NATIONAL CLINICAL TRAINING COURSE
Comprehensive Emergency Obstetric and Newborn Care

Participant's Notebook

Directorate of Reproductive Health
Ministry of Public Health
Islamic Republic of Afghanistan

2010

Prepared for the Ministry of Public Health (MoPH) of Islamic Republic of Afghanistan, as the national refresher training course in basic essential obstetric and newborn care (EmONC), for use by all those organizations implementing a basic Emergency Obstetric and Newborn Care refresher training course.

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FOREWORD

Dear Readers,

Women's and children's health is one of the top priorities of the Ministry of Public Health (MoPH) in Afghanistan. As reflected in the National Reproductive Health Strategy for 2010–2015, the MoPH will increase access to and utilization of emergency obstetric and neonatal care (EmONC) through high-quality training and performance improvement initiatives and retention strategies. The provision of basic Emergency Obstetric and Neonatal Care (BEmONC & CEmONC) is a globally recognized approach for improving safe motherhood and reducing maternal mortality.

With a maternal mortality ratio, there is an urgent need to improve the quality and availability of BEmONC and CEmONC services to women in Afghanistan.

These updated Learning Resource Packages (LRPs) provide updates needed to teach service providers the most current evidence-based care and best practices in BEmONC and CEmONC. These packages will enable clinicians to improve their communication with women, make appropriate clinical decisions, and develop competency in managing the most common complications of pregnancy and childbirth.

Increasing the capacity of health care providers through training must be complemented by a fully functioning health system and efforts to ensure that providers are working within enabling environments and a system of supportive supervision. The MoPH jointly with its partners will ensure that all skilled providers involved in basic and comprehensive EmONC have the opportunity to receive these trainings and improve the quality of the training centers.

The MoPH Government of Afghanistan acknowledges and appreciates the efforts of Reproductive Health Leadership and the organizations that supported the Reproductive Health Department, through the BEmONC and CEmONC working group of the Reproductive Health Taskforce, to update the BEmONC and CEmONC LRP. Technical and financial support was provided by UNICEF. JICA has kindly supported the Pashto language translation and printing of the LRP for the field level implementation. Professional staff from Jhpiego, Afghan Midwives Association (AMA) and the Afghan Society of Obstetrics and Gynecology (AFSOG) worked very hard to prepare these LRPs and are gratefully acknowledged.

The MoPH recognizes these LRPs as official training materials for the BEmONC and CEmONC courses and requires all health organizations conducting BEmONC and CEmONC courses to use this LRP in their trainings.

Regards,

Dr. Surya Dalil
Acting Minister of Public Health
Kabul, Afghanistan

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OVERVIEW

Training interventions to improve worker performance are among the most important aspects of performance management and support for human resources development. Health care providers must have the knowledge, attitudes, and skills required to perform their jobs in a competent and caring manner. Clinical training deals primarily with making sure that participants acquire the knowledge, attitudes, and skills needed to carry out a specific procedure or activity (such as assessing a newborn with a problem, inserting a gastric tube, or incising and draining an abscess) and helping participants apply this procedure or activity on the job. The goal of clinical training is to assist health care workers in learning to provide safe, high-quality health services through improved work performance.

Competency-Based Training

This clinical training course is designed to enable participants to immediately apply, on the job, the new information and skill(s) they have learned, and thus improve their performance. The course uses a competency-based learning approach that focuses on the specific knowledge, attitudes, and skills needed to carry out a procedure or activity. Competency-based learning is learning by doing—learning that emphasizes how the participant performs (i.e., a combination of knowledge, attitudes, and most important, skills). The trainer assesses participants' skill competency by evaluating their overall performance.

Learning to perform a skill occurs in three stages:

1. ***Skill acquisition***: The participant knows the steps and their sequence (if necessary) to perform the required skill or activity but needs assistance
2. ***Skill competency***: The participant knows the steps and their sequence (if necessary) and can perform the required skill or activity
3. ***Skill proficiency***: The participant knows the steps and their sequence (if necessary) and efficiently performs the required skill or activity

In the first stage, skill acquisition, participants attend a series of interactive and participatory sessions conducted by the trainer. The trainer involves the participants through a variety of learning methods including the use of questions, role plays, case studies, and problem-solving activities. In addition, the trainer demonstrates skills through role plays and with anatomic models or in simulations as participants observe and follow the steps in a competency-based learning guide (see below). As participants practice these skills, the trainer observes, provides feedback, and encourages the participants to assess each other using the learning guide. Participants practice until they achieve skill competency and feel confident performing the procedure. The final stage, skill proficiency, occurs only with repeated practice over time.

The use of competency-based learning guides and checklists to measure clinical skills or other observable behaviours in comparison to a predetermined standard are an integral part of learning new skills. A learning guide contains the individual steps or

tasks in sequence (if necessary) required to perform a skill or activity in a standard way.

A clinical skill or activity is standardized by identification of its essential steps. Each step is analyzed to determine the most efficient and safe way to perform and learn it. This process is called "standardization." Once a procedure has been standardized, competency-based learning guides and checklists can be developed for it.

Learning guides:

- help the participant learn the correct steps and sequence in which they should be performed (skill acquisition), and
- measure learning in small steps as the participant gains confidence and skill (skill competency).

Checklists are based on the learning guides and focus only on key steps or tasks. They allow the trainer to objectively assess a participant's skill competency and overall performance.

Assessment of Knowledge and Skills

Assessment of participants' knowledge and skills is an essential component of training and learning interventions. Participants should be aware of how and when they will be assessed. Assessment of their knowledge and skill performance should be made throughout the course using objective assessment methods, described below.

- Knowledge assessment occurs with the administration of a precourse questionnaire on the first day of the course. Participants score their own questionnaire because the purpose is to help them see the important content areas of the course.
- The trainer gives a midcourse questionnaire at the point during the course when all of the knowledge content has been presented. Participants must achieve a score of at least 75% to demonstrate that they have achieved the learning objectives. The trainer gives participants who did not achieve a score of at least 75% another opportunity to study and answer the items they missed.
- The trainer assesses participants' skills using a performance checklist. Once participants demonstrate skill competency during role plays and with anatomic models or simulations, they progress to learn other skills or to gain additional skill practice in a clinical setting with clients.

This means that participants know, from the beginning of the course, the basis on which the trainer will assess their competency. In addition, participants will have an opportunity to practice the skill(s) using the same checklist the trainer will use. Assessment of learning in competency-based training is:

- dynamic, because participants receive continual feedback and have ample opportunity for review and discussion with the trainer; and
- less stressful, because participants know from the beginning what they are expected to learn.

This interactive approach is the essence of competency-based training—and it is distinctly different from traditional training. In competency-based training, the participant is an active participant in the learning process. The trainer acts as a coach and is also actively involved in transferring new knowledge, attitudes, and skills through demonstration and regular feedback:

- Before skills practice—The trainer and participants meet briefly before each practice session to review the skill/activity, including the steps or tasks that will be emphasized during the session.
- During skills practice—The trainer observes, coaches, and provides feedback to the participant as s/he performs the steps or tasks outlined in the learning guide.
- After skills practice—Immediately after practice, the trainer uses the learning guide to discuss the strengths of the participant's performance and also offer specific suggestions for improvement.

The Use of Anatomic Models and Simulations

Another key component of competency-based training is the use of anatomic models and simulations to provide participants the opportunity to practice new skills before working in an actual clinical site. Practicing with models (e.g., to practice resuscitation) or in a simulated setting (e.g., learning stations equipped with real instruments and supplies to practice infection prevention practices) reduces stress for the participant. Only when participants have demonstrated skill competency and some degree of skill proficiency should they be allowed to apply their new skills in a clinical setting. Work with models also provides ample opportunity for practice before final evaluation for qualification in the clinical skill or activity being learned.

A Supportive Environment for Learning

Competency-based training is most effective when there is a supportive environment at the participant's workplace. In addition to the health care worker who attends the course and the trainer who conducts it, supervisors and coworkers play a critical role in helping create and maintain this environment. All of these individuals have responsibilities before, during, and after a training course. By working as partners, they can help sustain the knowledge and skills learned during training and, ultimately, the quality of clinical services. This process is called "transfer of learning." It is described in the next section.

Transfer of Learning [1]

> Transfer of learning is defined as ensuring the knowledge and skills acquired during a learning intervention are applied on the job.

The clinical knowledge and skills of providers are a critical factor in providing high-quality health care services. However, providers may acquire new knowledge and skills only to find that they are unable to use, or transfer, these new skills at their workplace. There are several inter-related factors that support good performance in the workplace, as described below.

THE PERFORMANCE FACTORS	POSSIBLE INTERVENTIONS
1. *Job expectations* Do providers know what they are supposed to do?	Provide adequate performance standards and detailed job descriptions. Create the necessary channels to communicate job roles and responsibilities effectively.
2. Performance feedback *Do providers know how well they are doing?*	Offer timely, constructive, and comprehensive information about how well performance is meeting expectations.
3. Physical environment and tools *What is the work environment like, and what systems are in place to support it?*	Develop logistical and maintenance systems to provide a satisfactory physical environment and maintain adequate supplies and equipment. Design work space to suit activities.
4. Motivation *Do people have a reason to perform as they are asked to perform? Does anyone notice?*	Seek provider input to identify incentives for good performance. Provide positive consequences for good performance and neutral or negative consequences for below standard performance. Encourage coworkers to support new skills.
5. Skills and knowledge to do the job Do providers know how to do the job?	Ensure job candidates have prerequisite skills. Provide access to trainers and information resources. Offer appropriate learning opportunities.

The final factor on the list, required knowledge and skills, is addressed primarily through training and learning interventions. Transfer of learning to the workplace is critical to improving job performance. The key individuals involved in this process include:

Supervisors: responsible for monitoring and maintaining the quality of services and ensuring health care workers are properly supported in the workplace.

Trainers: responsible for helping health care workers acquire the necessary knowledge and skills to perform well on the job.

[1] *Adapted from*: PRIME II and JHPIEGO Corporation. 2002. *Transfer of Learning: A Guide for Strengthening the Performance of Health Care Workers*. Intrah: Chapel Hill, NC.

Health care workers: responsible for the delivery of high-quality services (e.g., clinicians, counselors, administrators, cleaners).

Co-workers: responsible for supporting participants while they are engaged in training and as they apply new knowledge and skills at the workplace.

The "transfer of learning" process describes the tasks that supervisors, trainers, participants, and coworkers undertake before, during, and after training in order to assure transfer of knowledge and skills to the workplace. The goal is for participants to transfer 100% of their new knowledge and skills to their jobs. The following matrix outlines these specific tasks.

TRANSFER OF LEARNING MATRIX			
	Before Learning	**During Learning**	**After Learning**
Supervisors	• Understand the performance need • Participate in any additional assessments required for training • Influence selection of participants • Communicate with trainers about the learning intervention • Help participants create a preliminary action plan • Support and encourage participants	• Participate in or observe training • Protect participants from interruptions • Plan post-training debriefing • Provide supplies and space, and schedule opportunities for participants to practice	• Monitor progress of action plans with participants and revise as needed • Conduct post-training debriefing with participants and coworkers • Be a coach and role model—provide encouragement and feedback • Evaluate participants' performance • Stay in contact with trainers
Trainers	• Validate and supplement the results of the performance needs assessment • Use instructional design and learning principles to develop or adapt the course • Send the course syllabus, objectives and precourse learning activities in advance	• Provide work-related exercises and appropriate job aids • Give immediate and clear feedback • Help participants develop realistic action plans • Conduct training evaluations	• Conduct follow-up activities in a timely manner • Help strengthen supervisors' skills • Facilitate review of action plans with supervisors and participants • Share observations with supervisors and participants • Maintain communication with supervisors and participants
Participants	• Participate in needs assessments and planning • Review course objectives and expectations and prepare preliminary action plans • Begin establishing a support network • Complete precourse learning activities	• Participate actively in the course • Develop realistic action plans for transferring learning	• Meet with supervisor to review action plan • Apply new skills and implement action plan • Use job aids • Network with other participants and trainers for support • Monitor your own performance
Coworkers and others	• Participate in needs assessments and discussions of the training's intended impact • Ask participants to bring back key learning points to share with the work group	• Complete participants' reassigned work duties • Participate in learning exercises at the request of participants	• Be supportive of participants' accomplishments

As outlined in the matrix, transfer of learning is a complex process. An action plan can help make the process easier for all of the individuals involved. An action plan is a written document that describes the steps that supervisors, trainers, participants, and coworkers will complete to help maximize the transfer of learning.

An action plan should be initiated before the training intervention so that everyone who can support the transfer of learning is involved from the beginning. The participants refine their plan during the training course and usually do not complete it until after the course when they are using their new skills on the job. The content and layout of an action plan should support the users of the plan, especially the participants. In developing an action plan, keep in mind these important points:

- Write activities as discrete steps that are realistic, measurable, and attainable.
- Identify clear responsibilities for participants, supervisors, coworkers, and trainers.
- Develop a specific time schedule for completing activities.
- Identify resources necessary to complete the activities, including plans for acquiring those resources.
- Instruct participants to use a learning journal to help facilitate the development of an action plan. A learning journal is a notebook in which participants document issues, problems, additional skills they need to develop, and questions that arise as they apply their new knowledge and skills on the job.

Developing an action plan should be included in the training course. If it is not, however, participants can take the initiative to develop an action plan on their own. See page 12 for a sample of a completed action plan. This example is very detailed. This level of detail may not always be necessary, depending on the performance problem and the learning intervention being undertaken.

A blank action plan format can be found on page 13. Participants may copy this for their use or develop their own format.

Learning Methods

A variety of learning methods, which complement the learning approach described in the previous section, are included in the learning resource package. A description of each learning method is provided below.

Illustrated Lectures

Lectures should be used to present information about specific topics. The lecture content should be based on, but not necessarily limited to, the information in the *Managing Complications in Pregnancy and Childbirth* reference manual.

In preparation for each lecture or interactive presentation, participants should be directed to read relevant sections of the reference manual (and other resource materials, if and when used) before each lecture. The trainer should prepare for the lectures by becoming thoroughly familiar with lecture content.

During lectures, the trainer should direct questions to participants and also encourage them to ask questions at any point during the lecture. Another strategy that encourages interaction involves stopping at predetermined points during the lecture to discuss issues and information of particular importance.

Group Activities

Group activities provide opportunities for participants to interact with each other and learn together. The main group activities in the learning resource package cover two important topics: clinical decision-making and interpersonal communication. The group activities associated with these topics are important because they provide a foundation for learning the skills required for these topics. All of these skills are essential for providing advanced essential obstetric care (EOC).

Case Studies

The purpose of the case studies included in the training course is to help participants develop and practice clinical decision-making skills. The technical content of the case studies is taken from the relevant sections of the reference manual. While it is suggested in the course outline that the case studies be completed in small groups in the classroom, they can also be completed individually in the classroom or at the clinical site or as homework assignments.

The case studies follow a clinical decision-making framework comprising five steps (see below).

Steps in Clinical Decision-Making

1. Assessment (Gathering Information)

Both the client, through self-assessment, and the provider complete this first step in clinical decision-making. Usually it is the client (or the mother of a newborn) who first recognizes that there is a problem and goes to the provider for help. Often, the client's chief complaint leads to a more significant or underlying problem. To identify the problem correctly, the provider needs to collect information from and about the client that will assist in accurately diagnosing and treating the problem. Providers obtain information through history taking, physical examination, and diagnostic tests, if available and necessary. It is important to collect only the information that is relevant to reaching a diagnosis and providing appropriate treatment or care. Collecting unnecessary information may:

- slow the provision of services,
- prolong the time that clients are in the clinic,
- endanger clients' lives in emergency situations,
- increase costs, and
- lead to clients' dissatisfaction with the health care system.

Participants and inexperienced providers usually use a standard format, or "external guide," for history and physical examination to assist them in gathering information about a client in an orderly way. Experienced providers, however, have "internalized" this guide and gather information based on key diagnostic characteristics that help to direct their information gathering; they tend to ask fewer, more focused questions and perform a physical examination relevant to the client's chief complaint.

2. Diagnosis (Interpreting the Information)

After gathering information, the provider begins to formulate a differential diagnosis. Working from this point, the provider uses her/his experience, fund of knowledge, and clinical inference to guide the collection of additional information to accept or reject certain diagnoses and move toward a working diagnosis.

Initial impressions are often formulated early in the interaction with the client. Experienced providers may consider several possible diagnoses within the first five minutes with the client, often based on very little information. New providers, who may not be as familiar with the possible diagnoses, may take longer. The differential diagnoses will guide the collection of additional information that will help accept, reject, or distinguish between diagnoses. This additional information will also help the provider in selecting the appropriate treatment if the working diagnosis has several different treatment options.

3. Planning (Developing the Care Plan)

After reaching a working diagnosis, the provider decides on a treatment or care plan, using the information collected in the previous steps. When need for blood transfusion is expected, the practitioner must make sure blood is available or a volunteer safe candidate is present to donate blood when needed. When deciding on a treatment or care plan, the provider will discuss the risks and benefits with the mother and agree on implementation and follow-up.

There are a number of factors that influence the choice of a treatment option, including:

- Provider's experience
- Research and clinical evidence
- Provider's values
- Client's values
- Bias due to missing or incomplete data

4. Intervention (Implementing the Care Plan)

The next step in clinical decision-making is implementing the treatment or care plan. Implementation requires certain clinical skills and attention to detail during the performance of these skills. Some actions will have to be carried out simultaneously and others in sequence. In either case, advance preparation of equipment, supplies, and personnel will make the implementation of the treatment or care plan easier.

5. Evaluation (Evaluating the Care Plan)

In this step of clinical decision-making, the treatment or care provided is evaluated for its effectiveness. For example, evaluation of care for a woman who has received blood includes her haemoglobin level, and record of blood loss after blood was administered. Thus, planning, intervention, and evaluation follow a circular pattern in much the same way that assessment and diagnosis do.

Sometimes the evaluation of treatment or care, especially if it has not been effective, will require the collection of additional information and revision of the diagnosis, thus restarting the entire clinical decision-making process. Evaluation of the treatment or care plan can also lead the provider to a final diagnosis—a working diagnosis that has been confirmed by more objective information. When the final diagnosis agrees with the working or provisional diagnosis, the provider will use the details of this case in her/his body of clinical experience.

Skills Practice Sessions, Learning Guides, and Checklists

Skills practice sessions provide participants with opportunities to observe and practice clinical skills, usually in a simulated setting and occasionally at a clinical site. The outline for each skills practice session includes the purpose of the particular session, instructions for the trainer, and the resources needed to conduct the session, such as models, supplies, equipment, learning guides, and checklists. Before conducting a skills practice session, the trainer should review the session and ensure that s/he can perform the relevant skill or activity. It will also be important to ensure that the necessary resources are available and that an appropriate location or room has been reserved.

The first step in a skills practice session requires that participants review the relevant **learning guide**. Next, the trainer demonstrates the steps/tasks, several times if necessary, for the particular skill or activity and then has participants work in groups of two or three to practice the steps/tasks and observe each other's performance, using the relevant learning guide. The trainer should be available throughout the session to observe the performance of participants and provide guidance. Participants should be able to perform all of the steps/tasks in the learning guide before the trainer assesses skill competency using the relevant **checklist**.

There are ten (10) skills practice sessions, learning guides, and checklists included in the course:

- Adult Resuscitation
- Endotracheal Intubation
- Spinal Anesthesia
- Blood Transfusion
- Cord Prolapse
- Caesarean Section
- Emergency Laparotomy with salpingectomy
- Postpartum Hysterectomy
- Repair of cervical tears
- Repair of uterine rupture

The learning guides contain the steps or tasks relevant to the skills for providing advanced EOC and correspond to the information presented in the applicable chapters of the reference manual for the course.

- Initially, participants can follow the learning guides as the trainer demonstrates the steps or tasks for a particular procedure.
- Subsequently, during classroom and clinic practice sessions, they serve as step-by-step guides for the participant as s/he performs the skills. During this phase, participants work in groups of two or three, using the learning guides to rate each other's performance or prompt each other as necessary. The clinical trainer(s) will provide guidance to each group to ensure that learning is progressing and that participants are following the steps outlined in the learning guides.

Skills checklists are used by the clinical trainer to evaluate each participant's performance in providing care for the sick and small newborn. Unlike the learning guides, which are quite detailed, the checklists focus on the key steps in procedures.

Criteria for assessment are included at the beginning of the checklists. Assessment of clinical skills will usually take place at the end of the training course. It is important that each participant demonstrate the steps or tasks at least once for feedback and coaching before the final assessment. If a step or task is not performed correctly, the participant should repeat the entire skill or activity sequence, **not** just the incorrect step. In addition, it is recommended that the trainer not stop the participant at the incorrect step unless the safety of the client is at stake. If it is not, the trainer should allow the participant to complete the skill/procedure before providing coaching and feedback on her/his overall performance.

In determining whether the participant is qualified, the trainer(s) will observe and rate the participant's performance on each step/task of a skill or procedure. The participant must be rated as "Satisfactory" for each step/task in the checklist to be assessed as qualified.

Components of the Comprehensive EmONC Learning Resource Package

This clinical training course is based on the following components:

- A reference manual (Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors) containing the need-to-know information
- A guide for participants containing validated questionnaires, learning guides, skills checklists, case studies, and role plays
- A guide for trainers, which includes answer keys for questionnaires, case studies, and role plays; clinical simulations; and detailed information for conducting the course
- Well-designed learning aids, such as anatomic models
- Competency-based performance evaluation

Using the Comprehensive EmONC Learning Resource Package

In designing the training materials for this course, particular attention has been paid to making them "user friendly" and to permitting the course participants and clinical trainer the widest possible latitude in adapting the training to the participants' (group and individual) learning needs. For example, at the beginning of each course an assessment is made of each participant's knowledge. The results of this precourse assessment are then used jointly by the participants and the advanced or master trainer to adapt the course content as needed so that the training focuses on acquisition of **new** information and skills.

A second feature relates to the use of the reference manual and participant's handbook. The **reference manual** and the additional reference materials are designed to provide all of the essential information needed to conduct the course in a logical manner. Because they serve as the "text" for the participants and the "reference source" for the trainer, special handouts or supplemental materials are not needed. In addition, because the manual and additional reference materials **only** contain information that is consistent with the course goals and objectives, they become an integral part of all classroom activities, such as giving an illustrated lecture or leading a discussion.

The **participant's handbook**, on the other hand, serves a dual function. First, and foremost, it is the road map that guides the participant through each phase of the course. It contains the course syllabus and course schedule, as well as all supplemental printed materials (precourse questionnaire, individual and group assessment matrix, learning guides, case studies and role plays) needed during the course.

The **trainer's notebook** contains the same material as the participant's handbook as well as material for the trainer. This includes the course outline; precourse questionnaire and answer key; midcourse questionnaire and answer key; answer keys for case studies, role plays and other exercises; and competency-based skills checklists.

In keeping with the training philosophy on which this course is based, all training activities will be conducted in an interactive, participatory manner. To accomplish

this requires that the role of the trainer continually change throughout the course. For example, the trainer is an **instructor** when presenting a classroom demonstration; a **facilitator** when conducting small group discussions or using role plays; and shifts to the role of **coach** when helping participants practice a procedure. Finally, when objectively assessing performance, the trainer serves as an **evaluator**.

In summary, the learning approach used in this course incorporates a number of key features. First, it is based on adult learning principles, which means that it is interactive, relevant, and practical. Moreover, it requires that the trainer facilitate the learning experience rather than serve in the more traditional role of an instructor or lecturer. Second, it involves use of behaviour modelling to facilitate learning a standardized way of performing a skill or activity. Third, it is competency-based. This means that evaluation is based on how well the participant performs the procedure or activity, not just on how much has been learned. Fourth, where possible, it relies heavily on the use of anatomic models and other training aids (i.e., it is humanistic) to enable participants to practice repeatedly the standardized way of performing a skill or activity before working with clients. Thus, by the time the trainer evaluates each participant's performance, using a checklist, every participant should be able to perform every skill or activity competently. This is the ultimate measure of training.

EXAMPLE OF A COMPLETED ACTION PLAN

Action Plan Goal: Implementation of the New National Guidelines for Essential Maternal and Neonatal Care (EMNC)

Facility: Mercy Hospital

ACTIVITY	*WHO DOES IT?*	RESOURCES NEEDED	DATE NEEDED	HOW TO MONITOR THE ACTIVITY	RESULT AND HOW TO MEASURE
Acquire sufficient quantities of the service delivery guidelines to serve the needs of the facility	Sister-in-charge	Copies of the service provision guidelines	31 March 2005	Copies of the service provision guidelines are available and used by all staff	By December 2005, 90% of doctors and nurses will be providing EMNC services according to new national service provision guidelines. Observe clinical practice in comparison with clinical protocols.
Participate in the Orientation Seminar of the District Health Management Team (DHMT)	Sister-in-charge and senior nurse/midwife	Transport and daily expenses	21 April 2005	Sister-in-charge demonstrates familiarity with contents of service provision guidelines by conducting an accurate staff orientation	
Conduct orientation of all staff from the Maternity Ward	Sister-in-charge and senior nurse/ midwife	Copies of the service provision guidelines	31 May 2005	Staff demonstrates familiarity with contents of service provision guidelines through participatory discussion led by sister-in-charge	
Form Job Aids Committee	Senior nurse/ midwife	None	31 May 2005	Committee exists and is creating job aids	
Have Job Aids Committee review guidelines and identify clinical protocols to post on the walls of the Maternity Ward	Senior nurse/ midwife	Copies of service provision guidelines, pen and paper	15 June 2005	Observe minutes of the meeting	
Make enlarged photocopies of the selected clinical protocols	Job Aids Committee representative	Transport and funds to make photocopies	21 June 2005	Photocopies exist	
Post clinical protocols on the walls and show to staff	Job Aids Committee representative	Tape	30 June 2005	Observe that protocols are posted on the walls and referred to on a regular basis	

EXAMPLE OF A BLANK ACTION PLAN

Performance Gap Addressed: ____

Action Plan Goal: ____

Facility: ____

ACTIVITY	WHO DOES IT?	RESOURCES NEEDED	DATE NEEDED	HOW TO MONITOR THE ACTIVITY	RESULT AND HOW TO MEASURE

INTRODUCTION

TRAINING IN COMPREHENSIVE EMERGENCY OBSTETRIC AND NEWBORN CARE (CEmONC)

Although most pregnancies and births are uneventful, approximately 15% of all pregnant women develop a potentially life-threatening complication that calls for skilled care and some will require a major obstetrical intervention to survive. The main causes of maternal death and disability are complications arising from hemorrhage, unsafe abortion, eclampsia, sepsis and obstructed labor. This training course is, therefore, designed to train doctors, midwives and/or nurses with midwifery skills who, as team members, will provide Comprehensive Emergency Obstetric and Newborn Care (CEmONC) at district hospitals to avert maternal death and disability.

The course follows a symptom-based approach to the management of life-threatening obstetric emergencies, as described in the reference manual recommended for the course (see *Components of the CEmONC Learning Resource Package* in *Overview*). The main topics in this training course and the reference manual (MCPC) are arranged by **symptom** (e.g., "vaginal bleeding in early pregnancy" is how someone with unsafe abortion will present, "convulsions" is how a patient with eclampsia presents, "shock" is how someone with severe postpartum hemorrhage presents). The emphasis in this course is on rapid assessment and decision-making and clinical action steps based on clinical assessment with limited reliance on laboratory or other tests, suitable for district hospitals and health centers in low resource settings.

In addition, throughout the training course emphasis is placed on recognition of and respect for the right of women to life, health, privacy and dignity.

Finally, the setting up and effective day-to-day management of CEmONC services at district hospitals are included as an integral part of the course.

COURSE DESIGN

The course builds on each participant's past knowledge and takes advantage of her/his high motivation to accomplish the learning tasks in the minimum time. Training emphasizes **doing**, not just knowing, and uses **competency-based evaluation** of performance.

Specific characteristics of this course are as follows:

During the morning of the first day, participants demonstrate their knowledge of CEmONC by completing a written **Precourse Questionnaire**.

- Classroom and clinical sessions focus on key aspects of CEmONC.
- Progress in knowledge-based learning is measured during the course using a standardized written assessment (Midcourse Questionnaire).
- Clinical skills training builds on the participant's previous experience relevant to CEmONC. For many of the skills, participants practice first with anatomic models, using learning guides that list the key steps in performing the skills/procedures for managing obstetric emergencies. In this way, they learn the standardized skills more quickly.
- Progress in learning new skills is documented using the clinical skills learning guides.
- A clinical trainer uses competency-based skills checklists to evaluate each participant's performance.
- Clinical decision-making is learned and evaluated through case studies and simulated exercises and during clinical practice with patients.
- Appropriate interpersonal skills are learned through behavior modeling, role play and evaluation during clinical practice with patients.

Successful completion of the course is based on mastery of the knowledge and skills components, as well as satisfactory overall performance in providing care for women who experience obstetric emergencies.

EVALUATION

This clinical training course is designed to produce healthcare providers (i.e., doctors, midwives and/or nurses with midwifery skills) who are qualified to provide CEmONC, as team members, at district hospitals. Qualification is a statement by the training institution(s) that the participant has met the requirements of the course in knowledge, skills and practice. Qualification does **not** imply certification. Only an authorized organization or agency can certify personnel.

Qualification is based on the participant's achievement in three areas:

- **Knowledge** - A score of at least 75% on the **Midcourse Questionnaire**
- **Skills** - Satisfactory performance of clinical skills for managing obstetric emergencies
- **Practice** - Demonstrated ability to provide care in the clinical setting for women who experience obstetric emergencies

The participant and the trainer share responsibility for the participant becoming qualified.

The evaluation methods used in the course are described briefly below:

- **Midcourse Questionnaire**. Knowledge will be assessed at the end the first week of the course. A score of 75% or more correct indicates knowledge-based mastery of the material presented during classroom sessions. For those participants scoring less than 75% on their first attempt, the clinical trainer should review the results with the participant individually and guide her/him on using the reference manual(s) to learn the required information. Participants scoring less than 75% can take the Midcourse Questionnaire again at any time during the remainder of the course.
- **Clinical Skills**. Evaluation of clinical skills will occur with models in a simulated setting and with patients at the clinical training site. In each setting, the clinical trainer will use skills checklists to evaluate each participant as they perform the skills and procedures needed to manage obstetric emergencies and interact with patients. Case studies and clinical simulations will be used to assess problem-solving and decision-making skills. Evaluation of the interpersonal communication skills of each participant may take place at any point during this period through observation of participants during role plays. Participants should be competent in performing the steps/tasks for a particular skill or procedure in a simulated setting before undertaking supervised practice at a clinical site. Although it is desirable that all of the skills/procedures included in the training course are learned and assessed in this manner, it may not be possible. For example, because obstetric emergencies are not common, opportunities to practice particular skills with patients may be limited; therefore, practice and assessment of skill competency should take place in a simulated setting.
- **Clinical Practice**. It is the clinical trainer's responsibility to observe each participant's overall performance in providing basic CEmONC. This includes

observing the participant's attitude—a critical component of quality service provision—toward women who experience obstetric emergencies and toward other members of the CEmONC team. By doing this, the clinical trainer assesses how the participant uses what s/he has learned.

COURSE SYLLABUS

Course Description. This clinical training course is designed to prepare participants to manage obstetric emergencies and work effectively as members of an CEmONC team. The course consists of a 24 day block at a designated training site and focuses on the development, application and evaluation of knowledge and skills; the first 10 days take place in the classroom with check out in skill lab and the rest of the time at a designated clinical site, which should be as close to the classroom as possible. Participants will include obstetrician-gynecologists as well as anesthesiologists and nurse anesthetists.

Course Goals

- To influence in a positive way the attitudes of the participant toward team work and her/his abilities to manage and provide Comprehensive emergency obstetric services
- To provide the participant with the knowledge and clinical skills needed to provide Comprehensive emergency obstetric services
- To provide the participant with the decision-making skills needed to provide Comprehensive emergency obstetric services
- To provide the participant with the interpersonal communication skills needed to respect the right of women to life, health, privacy and dignity

Participant Learning Objectives

By the end of the training course, all participants will be able to:

- Describe Comprehensive Emergency Obstetric and Newborn Care (CEmONC) services and how they can reduce maternal mortality
- Describe ethical issues related to CEmONC
- Use effective interpersonal communication techniques when providing CEmONC services
- Use recommended infection prevention practices for all aspects of CEmONC
- Work as a team with other healthcare providers including obstetrician-gynecologists, anesthesiologists, anesthetists, nurses and midwives in the provision of CEmONC services
- Perform rapid initial assessment and management of a woman who presents with an obstetric emergency.

- Identify the presenting symptoms and signs of shock and perform immediate and specific management of shock
- Perform adult endotracheal intubation
- Perform a blood transfusion, including recognition and management of transfusion reactions.
- Describe anesthesia and pain management associated with obstetric emergencies including intravenous sedation, administration of ketamine, and spinal anesthesia.
- Describe pre- and post-operative care for women who require obstetric surgery.
- Describe the diagnosis and management of obstetric cervical tears
- Describe the diagnosis and management of umbilical cord prolapse
- Describe the diagnosis and management of ectopic pregnancy and ruptured uterus
- Describe how and when to perform a postpartum hysterectomy
- Describe the steps involved in setting up CEmONC services and managing them on a day-to-day basis.

Additionally, obstetrician-gynecologists will be able to:

- Identify and repair cervical tears.
- Perform a caesarean section.
- Perform a laparotomy for management of ectopic pregnancy and ruptured uterus.
- Perform a postpartum or gravid hysterectomy
- Demonstrate basic surgical skills including use of commonly used equipment such as forceps and retractors, use of appropriate suture material and suturing technique

Anesthetists and anesthesiologists will be able to:

- Provide intravenous sedation including administration of ketamine
- Provide spinal anesthesia
- Manage common anesthetic emergencies and complications

Training/Learning Methods

- Illustrated lectures and group discussions
- Case studies
- Role plays
- Simulated practice with anatomic models: cesarean section, adult endotracheal intubation, spinal anesthesia, emergency laparotomy for ectopic pregnancy and uterine rupture
- Simulations for clinical decision-making
- Guided clinical activities (providing care and performing procedures for women requiring CEmONC)

Learning Materials. The learning materials for the course are as follows:

- Reference manuals:
  - *Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors* (WHO)
  - *Infection Prevention Guidelines for Healthcare Facilities with Limited Resources* (Jhpiego)
- Audiovisuals (videotapes) and presentation graphics on CEmONC
- Instruments and equipment: The instruments and equipment required for demonstrating and practicing the procedures to be learned in the course are listed in each of the skills practice sessions.
- Anatomic models:
  - *Childbirth simulator and placenta/cord/ammion model*
  - *Vinyl or cloth pelvic model and/or foam block suitable for cesarean section, laparotomy with salpingectomy/repair of ruptured uterus/postpartum hysterectomy*
  - *Adult Endotracheal intubation model*
  - *Spinal anesthesia model*

Participant Selection Criteria

- Participants for this course must be practicing clinicians (doctors) who have been trained in Basic Emergency Obstetric and Newborn Care (BEmONC) and are involved in the provision of Comprehensive Emergency Obstetric and Newborn Care.

- Participants should have the support of their supervisors or managers to achieve improved job performance after completing the course. In particular, participants should be prepared to communicate with supervisors or managers about the course and seek endorsement for training, encouragement for attendance and participation, and involvement in the transfer of new knowledge and skills to their job.

Methods of Evaluation

Participant

- Precourse and Midcourse Knowledge Assessment Questionnaires

- Learning Guides and Checklists for Comprehensive emergency obstetric skills/procedures

Course

- Course Evaluation (to be completed by each participant)

Course Duration

The course is composed of 20 classroom sessions (10 days) including simulation practice and check out in skill lab and 13 days for supervised clinical practice at the clinical practice site. It is important to note that course duration may need to be revised depending on participants' experience and progress in learning new knowledge and skills. For example, if participants do not develop skills competency by the end of the course, it may be necessary to extend supervised clinical practice and/or the self-directed practicum. Alternatively, it may also be necessary to extend the classroom component of the course.

Suggested Course Composition

- A maximum of six pairs of doctors and anesthetists from the same facility (i.e., a total of 12 participants working in doctor anesthetist pairs)
- five clinical trainers (three doctors and two anesthetists)

Knowledge Update and Clinical Skills Standardization
Comprehensive Emergency Obstetric Care (CEmONC)
Course Schedule (24 Days)

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
A.M (4 Hours) **Opening:** • Welcome and introductions **Overview of the course:** • Goals, objectives, schedule • Review course materials • Identify participant expectations • Precourse knowledge assessment questionnaire • Review clinical experience • Review personal learning plan • Review individual and group learning needs **Presentation and Discussion:** Reducing Maternal Mortality – CEmONC	**A.M (4 Hours)** ***Agenda and opening activity*** **Presentation and Discussion:** Changing obstetric and midwifery practice **Presentation and Discussion:** • Rapid initial assessment • Adult resuscitation & management of shock • Monitoring blood transfusion **Learning Guides & Checklists** • How to use **Skill Demonstration in Small Groups:** • Adult resuscitation • Blood Transfusion	**A.M (4 Hours)** ***Agenda and opening activity*** **Presentation and Discussion** Review of Basic EOC management **Case Study:** Management of Prolapsed Cord **Presentation and Discussion:** Repair of cervical tears **Skill Demonstration in Small Groups**: Repair of cervical tears	**A.M (4 Hours)** ***Agenda and opening activity*** **Presentation and Discussion** : Obstetric Surgery: • Cesarean section **Video Demonstration: Cesarean Section** ***Skill Demonstration in Small Groups:*** Cesarean Section	**A.M (4 Hours)** **Agenda and opening activity** ***Presentation and Discussion:*** *Obstetric Surgery:* • *emergency laparotomy with salpingectomy for ectopic pregnancy* ***Video Demonstration:*** ***Salpingectomy for ectopic pregnancy*** ***Skill Demonstration in Small Groups:*** • *emergency laparotomy with salpingectomy for ectopic pregnancy*
LUNCH	**LUNCH**	**LUNCH**	**LUNCH**	**LUNCH**
P.M (3.5 Hours) **Presentation and Discussion:** Human Rights and CEmONC: • Feeling a sense of urgency • Accountability for one's actions • Respect for human life • Recognizing women's right to life, health, privacy and dignity **Role Play:** Interpersonal communication during CEmONC **Presentation and Discussion**: Review IP principles and practices • Videotape: IP	**P.M (3.5 Hours)** **Skill Practice on Models** • Adult resuscitation • Blood Transfusion **Clinical Simulation:** Emergency drill (Management of Shock) **Discussion**: Being prepared for an emergency	**P.M (3.5 Hours)** **Presentation and Discussion:** Analgesia and anesthesia in CEmONC, including use of ketamine anesthesia **Presentation and Discussion**: Endotracheal Intubation **Skill Demonstration:** Endotracheal Intubation **Skill Practice on Models:** • Endotracheal Intubation • Repair of cervical tears	**P.M (3.5 Hours)** **Presentation and Discussion:** • Spinal Anesthesia **Skill Demonstration:** Spinal Anesthesia **Skill Practice on Models:** • Spinal Anesthesia • Cesarean Section	P.M.**(3.5 Hours)** **Skill Practice on Models:** Endotracheal Intubation Spinal Anesthesia Cesarean Section Ex lap for ectopic ***Clinical Simulation:*** Management of a woman with a ruptured ectopic
Review of the day's activity	***Review of the day's activity***	***Review of the day's activity***	***Review of the day's activity***	***Review of the day's activity***
Reading Assignment: MCPC Manual C-1 to C-4; C-15 to C-33; S-1 to S-5 **Participants Handbook**: Learning Guides: Adult Resuscitation; Blood Transfusion	**Reading Assignment: MCPC Manual** C-37 to C-52; P-7 to P-14; P-81; S-7 to S-34; S-35 to S-50; S-83 to S-85; S-97 to S-98 **Participants Handbook**: Learning Guides: Endotracheal Intubation; Repair of cervical tears	**Reading Assignment: MCPC Manual** P-43 to P-52 **Participants Handbook**: Learning Guides: Spinal anesthesia, Cesarean Section	**Reading Assignment**: **MCPC Manual** S-13 to S-14; S-114 to S-118; P-109 to P-112 **Participants Handbook:** Learning Guides: Ectopic pregnancy	**MCPC Manual:** P-103 to P-108 **Participants Handbook:** Learning Guides: Postpartum Hysterectomy

DAY 6	DAY 7	DAY 8	DAY 9	DAY 10
Agenda and opening activity **Presentation & Discussion**: Management of anesthetic emergencies: difficult intubation, high spinal, repiratory arrest with IV sedation **Presentation & Discussion:** Obstetric surgery: Emergency postpartum hysterectomy **Video:** Postpartum hysterectomy **Skill Demonstration in Small Groups:** Postpartum hysterectomy	***Agenda and opening activity*** **Presentation & Discussion** Postoperative care principles & management postop emergencies **Presentation & Discussion:** Surgical repair of a ruptured uterus **Skill Demonstration:** Surgical repair of a ruptured uterus	***Agenda and opening activity*** **Skills Practice:** Participants practice all skills on models. Endotracheal intubation Spinal Anesthesia Cesarean section Exlap with salpingectomy Postpartum hysterectomy Repair of Ruptured Uterus	***Agenda and opening activity*** **Mid course knowledge questionnaire** **Instructions for Clinical Practice** **Skills practice & Evaluation** Endotracheal intubation Spinal Anesthesia Cesarean section Exlap with salpingectomy Postpartum hysterectomy Repair of ruptured uterus	***Agenda and opening activity*** **Review of individual learning needs and personal learning plans** **Individual meetings with participants** **Skill Practice & Evaluation** Endotracheal intubation Spinal Anesthesia Cesarean section Exlap with salpingectomy Postpartum hysterectomy Repair of ruptured uterus
LUNCH	**LUNCH**	**LUNCH**	**LUNCH**	**LUNCH**
Skill Practice Endotracheal intubation Spinal Anesthesia Cesarean section Exlap with salpingectomy Postpartum hysterectomy **Clinical Simulation:** Management of an anesthetic emergency	**Skill Practice** Endotracheal intubation Spinal Anesthesia Cesarean section Exlap with salpingectomy Postpartum hysterectomy Repair of Ruptured Uterus **Clinical Simulation:** Management of a ruptured uterus	**Skills Practice**: . Endotracheal intubation Spinal Anesthesia Cesarean section Exlap with salpingectomy Postpartum hysterectomy Repair of Ruptured Uterus	**Review individual and group learning needs** **Skill Practice & Evaluation** Endotracheal intubation Spinal Anesthesia Cesarean section Exlap with salpingectomy Postpartum hysterectomy Repair of ruptured uterus	**Visit to clinical practice site with prep for following week**
Review of the day's activity	***Review of the day's activity***	***Review of the day's activity***	***Review of the day's activity***	***Review of the day's activity***
Reading Assignment: MCPC Manual C-52 to C-55, S-20 to S-21; S-93 to S-94; P-95 to P-101; **Participants Handbook** Learning Guide: Repair of ruptured uterus	**Reading Assignment: MCPC Manual** Review all learning guides and checklists	**Reading Assignment: MCPC Manual.** Review relevant material for midcourse knowledge assessment Review all learning guides and checklists		

DAY 11	DAY 12	DAY 13	DAY 14	DAY 15
Team 1: **Emergency Reception Area:** **Demonstration and Practice**: • Rapid assessment • Shock management and adult resuscitation • Monitoring blood transfusion **Delivery Ward** **Ward rounds, case review and discussion** • Monitor and manage complicated labor • Decision-making for Cesarean • Obstetric surgery **Preoperative and Post Operative Care** **Team 2:** **Operating Room** **Demonstration/Observation in operating room** • Anesthesia: - Ketamine anesthesia - Endotracheal Intubation - Spinal anesthesia • Infection Prevention: - Instrument and linen preparation - High-level disinfection - Sterilization **Discussion**: Cases of the day	**Team 1:** **Emergency Reception Area:** **Demonstration and Practice**: • Rapid assessment • Shock management and adult resuscitation • Monitoring blood transfusion **Delivery Ward** **Ward rounds, case review and discussion** • Monitor and manage complicated labor • Decision-making for Cesarean • Obstetric surgery **Preoperative and Post Operative Care** **Team 2:** **Operating Room** **Demonstration/Observation in operating room** • Anesthesia: - Ketamine anesthesia - Endotracheal Intubation - Spinal anesthesia • Infection Prevention: - Instrument and linen preparation - High-level disinfection - Sterilization **Discussion**: Cases of the day	**Team 1:** **Emergency Reception Area:** **Demonstration and Practice**: • Rapid assessment • Shock management and adult resuscitation • Monitoring blood transfusion **Delivery Ward** **Ward rounds, case review and discussion** • Monitor and manage complicated labor • Decision-making for Cesarean • Obstetric surgery **Preoperative and Post Operative Care** **Team 2:** **Operating Room** **Demonstration/Observation in operating room** • Anesthesia: - Ketamine anesthesia - Endotracheal Intubation - Spinal anesthesia • Infection Prevention: - Instrument and linen preparation - High-level disinfection - Sterilization **Discussion**: Cases of the day	**Team 1:** **Emergency Reception Area:** **Demonstration and Practice**: • Rapid assessment • Shock management and adult resuscitation • Monitoring blood transfusion **Delivery Ward** **Ward rounds, case review and discussion** • Monitor and manage complicated labor • Decision-making for Cesarean • Obstetric surgery **Preoperative and Post Operative Care** **Team 2:** **Operating Room** **Demonstration/Observation in operating room** • Anesthesia: - Ketamine anesthesia - Endotracheal Intubation - Spinal anesthesia • Infection Prevention: - Instrument and linen preparation - High-level disinfection - Sterilization **Discussion**: Cases of the day	**Team1:** **Emergency Reception Area:** **Demonstration and Practice**: Rapid assessment Shock management and adult resuscitation Monitoring blood transfusion **Delivery Ward** **Ward rounds, case review and discussion** Monitor and manage complicated labor Decision-making for Cesarean Obstetric surgery **Preoperative and Post Operative Care** **Team 2:** **Operating Room** **Demonstration/Observation in operating room** Anesthesia: - Ketamine anesthesia - Endotracheal Intubation - Spinal anesthesia Infection Prevention: - Instrument and linen preparation - High-level disinfection - Sterilization **Discussion**: Cases of the day

DAY 16	DAY 17	DAY 18	DAY 19	DAY 20
Team 1: **Emergency Reception Area:** **Demonstration and Practice**: • Rapid assessment • Shock management and adult resuscitation • Monitoring blood transfusion **Delivery Ward** **Ward rounds, case review and discussion** • Monitor and manage complicated labor • Decision-making for Cesarean • Obstetric surgery **Preoperative and Post Operative Care** **Team 2:** **Operating Room** **Demonstration/Observation in operating room** • Anesthesia: - Ketamine anesthesia - Endotracheal Intubation - Spinal anesthesia • Infection Prevention: - Instrument and linen preparation - High-level disinfection - Sterilization **Discussion**: Cases of the day	**Team 1:** **Emergency Reception Area:** **Demonstration and Practice**: • Rapid assessment • Shock management and adult resuscitation • Monitoring blood transfusion **Delivery Ward** **Ward rounds, case review and discussion** • Monitor and manage complicated labor • Decision-making for Cesarean • Obstetric surgery **Preoperative and Post Operative Care** **Team 2:** **Operating Room** **Demonstration/Observation in operating room** • Anesthesia: - Ketamine anesthesia - Endotracheal Intubation - Spinal anesthesia • Infection Prevention: - Instrument and linen preparation - High-level disinfection - Sterilization **Discussion**: Cases of the day	**Team 2:** **Emergency Reception Area:** **Demonstration and Practice**: • Rapid assessment • Shock management and adult resuscitation • Monitoring blood transfusion **Delivery Ward** **Ward rounds, case review and discussion** • Monitor and manage complicated labor • Decision-making for Cesarean • Obstetric surgery **Preoperative and Post Operative Care** **Team 1:** **Operating Room** **Demonstration/Observation in operating room** • Anesthesia: - Ketamine anesthesia - Endotracheal Intubation - Spinal anesthesia • Infection Prevention: - Instrument and linen preparation - High-level disinfection **Discussion**: Cases of the day	**Team 2:** **Emergency Reception Area:** **Demonstration and Practice**: • Rapid assessment • Shock management and adult resuscitation • Monitoring blood transfusion **Delivery Ward** **Ward rounds, case review and discussion** • Monitor and manage complicated labor • Decision-making for Cesarean • Obstetric surgery **Preoperative and Post Operative Care** **Team 1:** **Operating Room** **Demonstration/Observation in operating room** • Anesthesia: - Ketamine anesthesia - Endotracheal Intubation - Spinal anesthesia • Infection Prevention: - Instrument and linen preparation - High-level disinfection - Sterilization **Discussion**: Cases of the day	**Team 2:** **Emergency Reception Area:** **Demonstration and Practice**: • Rapid assessment • Shock management and adult resuscitation • Monitoring blood transfusion **Delivery Ward** **Ward rounds, case review and discussion** • Monitor and manage complicated labor • Decision-making for Cesarean • Obstetric surgery **Preoperative and Post Operative Care** **Team 1:** **Operating Room** **Demonstration/Observation in operating room** • Anesthesia: - Ketamine anesthesia - Endotracheal Intubation - Spinal anesthesia • Infection Prevention: - Instrument and linen preparation - High-level disinfection - Sterilization **Discussion**: Cases of the day

DAY 21	DAY 22	DAY 23	DAY 24	
Team 2: **Emergency Reception Area:** **Demonstration and Practice**: • Rapid assessment • Shock management and adult resuscitation • Monitoring blood transfusion **Delivery Ward** **Ward rounds, case review and discussion** • Monitor and manage complicated labor • Decision-making for Cesarean • Obstetric surgery **Preoperative and Post Operative Care** **Team 1:** **Operating Room** **Demonstration/Observation in operating room** • Anesthesia: - Ketamine anesthesia - Endotracheal Intubation - Spinal anesthesia • Infection Prevention: - Instrument and linen preparation - High-level disinfection - Sterilization **Discussion**: Cases of the day	**Team 2:** **Emergency Reception Area:** **Demonstration and Practice**: • Rapid assessment • Shock management and adult resuscitation • Monitoring blood transfusion **Delivery Ward** **Ward rounds, case review and discussion** • Monitor and manage complicated labor • Decision-making for Cesarean • Obstetric surgery **Preoperative and Post Operative Care** **Team 1:** **Operating Room** **Demonstration/Observation in operating room** • Anesthesia: - Ketamine anesthesia - Endotracheal Intubation - Spinal anesthesia • Infection Prevention: - Instrument and linen preparation - High-level disinfection - Sterilization **Discussion**: Cases of the day	**Team 2:** **Emergency Reception Area:** **Demonstration and Practice**: • Rapid assessment • Shock management and adult resuscitation • Monitoring blood transfusion **Delivery Ward** **Ward rounds, case review and discussion** • Monitor and manage complicated labor • Decision-making for Cesarean • Obstetric surgery **Preoperative and Post Operative Care** **Team 1:** **Operating Room** **Demonstration/Observation in operating room** • Anesthesia: - Ketamine anesthesia - Endotracheal Intubation - Spinal anesthesia • Infection Prevention: - Instrument and linen preparation - High-level disinfection - Sterilization **Discussion**: Cases of the day	***Agenda and opening activity*** **Discussion**: Lessons from clinical experience **Presentation & Discussion**: Setting up and managing the Advanced Emergency Obstetric team and services **Discussion with Trainers**: Determine further individual learning needs of participants **Group Work**: Develop action plan **LUNCH** **Presentations**: Action plans **Next Steps**: Log book, on the job learning, planning mentoring visits **Course Summary** **Closing Ceremony**	

PRECOURSE KNOWLEDGE ASSESSMENT QUESTIONNAIRE

HOW THE RESULTS WILL BE USED

The main objective of the **Precourse Knowledge Assessment Questionnaire** is to assist both the **trainer** and the **participant** as they begin their work together in the course by assessing what the participants, individually and as a group, know about the course topics. This allows the trainer to identify topics which may need additional emphasis during the course. Providing the results of the precourse assessment to the participants enables them to focus on their individual learning needs. In addition, the questions alert participants to the content that will be presented in the course.

The questions are presented in the true-false format. A special form, the **Individual and Group Assessment Matrix**, is provided to record the scores of all course participants. Using this form, the trainer and participants can quickly chart the number of correct answers for each of the questions. By examining the data in the matrix, the group members can easily determine their collective strengths and weaknesses and jointly plan with the trainer how to best use the course time to achieve the desired learning objectives.

For the trainer, the questionnaire results will identify particular topics that may need additional emphasis during the learning sessions. Conversely, for those categories where 75% or more of participants answer the questions correctly, the trainer may elect to use some of the allotted time for other purposes.

PRECOURSE KNOWLEDGE ASSESSMENT QUESTIONNAIRE

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

INFECTION PREVENTION PRACTICES

1. Decontamination of soiled surgical instruments by soaking in 0,5% chlorine for 10 minutes prior to cleaning rapidly kills viruses causing hepatitis B (HBV) or AIDS (HIV) _______
2. Bacterial endospores which cause tetanus and gangrene are reliably killed by boiling (high-level disinfection) _______
3. Surgical (metal) instruments which have been decontaminated and thoroughly cleaned can be sterilized by boiling them for 20 minutes _______
4. Cleaning instruments by scrubbing with detergent and water until visibly clean and then thoroughly rinsing them is not necessary provided the instruments are sterilized or high-level disinfected before reusing _______
5. After completing a surgical procedure, the surgeon or assistant should dispose of waste items such as blood-soaked cotton or gauze pads before removing her/his gloves _______

RAPID INITIAL ASSESSMENT; MANAGEMENT OF SHOCK; TRANSFUSION

6. A woman who suffers shock as a result of an obstetric emergency may have a low blood pressure (systolic less than 90 mm Hg) _______
7. A woman in shock should be given fluids by mouth as one of the immediate management of shock _______
8. In the management of shock, vital signs should be monitored for every 10 minutes _______
9. The resuls of a bedside clotting test suggest coagulopathy if a clot fails to form after 5 minutes _______
10. For each unit of blood transfused, the woman should be monitored before starting the transfusion and 4 hours following completion _______
11. Dextran should be used as a replacement fluid of transfusion for a woman with established hypovolaemia _______
12. Management of heart failure due to anemia almost always involves transfusion with packed cells or sedimented cells _______

ANESTHESIA AND PAIN MANAGEMENT

13. When using local anesthesia for an obstetric surgery, telling the woman about what you are doing at each step of the procedure should be discouraged because it will only frighten her ________
14. Premedication is required for obstetric procedures that last longer than 30 minutes ________
15. For most obstetric procedures, the preparation of Lignocaine is diluted to 0,5%, which gives the maximum effect with the least toxicity ________
16. Adrenaline should be added if the obstetric procedure requires Lignocaine more than 40 mL ________

PRE- AND POST-OPERATIVE CARE

17. Shaving the woman pubic's hair is necessary as a preoperative care ________
18. If the woman is going to have a caesarean section, prophylactic antibiotic is given 30 minutes before the procedure ________
19. Before draining a pelvic abscess, a combination of oral antibiotics should be given ________
20. Ensuring a clear airway and adequate ventilation for the patient is included as an initial postoperative care ________
21. Keeping the dressing on the wound for the first 3 days after surgery is recommended as a good postoperative care ________

PROLAPSED CORD AND OBSTETRIC SURGERY

22. If the cord prolapses in the first stage of labor and is pulsating, a hand should be inserted into the vagina and the presenting part pushed up to decrease pressure on the cord and dislodge the presenting part from the pelvis ________
23. When the fetus is alive in the case of obstructed labor and the cervix is fully dilated and the head is at 0 station or below delivery should always be by caesarean section ________
24. If there are signs of obstruction or the fetal heart rate is abnormal in occiput posterior position, delivery should be by caesarean section ________
25. With a face presentation, when the chin is in the anterior position and the cervix is fully dilated, a caesarean section should be performed ________
26. If the first baby in a multiple pregnancy is a transverse lie delivery should be by caesarean section ________
27. In the case of a scarred uterus, when labor crossess the alert line on the partograph during a trial of labor and slow progress is found to be due to inefficient uterine contractions, immediate caesarean section should be performed ________

28. If a maternal cause for an abnormal fetal rate is not identified and the fetal heart rate remains abnormal throughout at least three contractions, delivery should be done by caesarean section _______

29. If labor is prolonged in the case of a breech presentation, a caesarean section should be performed _______

30. If an aymptomatic ovarian cyst of more than 10 cm is detected in the first trimester of pregnancy, an emergency lapaotomy should be performed _______

CONFIDENTIAL CLINICAL EXPERIENCE QUESTIONNAIRE

Name: ____

Date: ____

<table>
<tr><td>Name of institution you are working in:
For teaching/training:____

For clinical practice:____</td></tr>
<tr><td>Qualification (state all degrees and diplomas and year obtained)
Qualification ______________________________ Year obtained
____ ______________________
____ ______________________
____ ______________________
____ ______________________</td></tr>
<tr><td>Number of years in active clinical maternal and neonatal practice since qualification:______________________________</td></tr>
<tr><td>The following questions refer to your clinical and teaching activities. For each skill listed on the reverse, please record:

1. The number of cases you personally managed in the last six months

2. The degree of confidence you have in performing these skills

3. Whether you have taught this skill in the last six months</td></tr>
</table>

Skill	Number of Cases in Last 6 Months	Degree of Confidence (a, b, or c)*	Have Taught This Skill in Last 6 Months
Rapid initial assessment and management of a woman who presents with a problem			
Immediate and specific management of shock			
Procedure of blood transfusion, including recognition and management of transfusion reactions			
Anesthesia and pain management associated with obstetric emergencies.			
Identify and repair cervical tears.			
Pre- and post-operative care for women who require obstetric surgery.			
Endotracheal intubation.			
Perform a caesarean section.			
Perform a laparotomy for ectopic pregnancy and ruptured uterus			
Perform a postpartum hysterectomy			
Steps involved in setting up CEmONC services and managing them on a day-to-day basis			

*Rank degree of confidence: a = very confident, I do not need any coaching; b = not very confident, I need coaching; c = I cannot perform this skill

PERSONAL LEARNING PLAN

Name:____ **Date**:______________________

Instructions: Review the list of Comprehensive EmONC skills, below, and determine the five priority areas in which you wish to improve your knowledge and/or skills. This decision should be based on the Comprehensive EmONC Course learning objectives, your responses to the Confidential Clinical Experience Questionnaire, and discussions with your supervisor and colleagues.

Comprehensive EmONC Skills

Rapid initial assessment and management of a woman who presents with a problem

Immediate and specific management of shock

Procedure of blood transfusion, including recognition and management of transfusion reactions

Pre- and post-operative care for women who require obstetric surgery

Management of cord prolapse

Steps involved in setting up CEmONC services and managing them on a day-to-day basis

Anesthesia and pain management associated with obstetric emergencies.

Spinal Anesthesia

Endotracheal intubation

Cesarean section

Postpartum hysterectomy

Salpingectomy for ectopic pregnancy

Laparotomy with repair of uterine rupture

Cervical tears

The **five priority areas** for my learning plan are:

1. ____
2. ____
3. ____
4. ____
5. ____

For each of the five priority areas listed above, I wish to focus on the following component(s) of care (check all that apply):

1. ____

❒ Patient assessment/diagnosis ❒ Clinical procedures
❒ Patient management ❒ Infection prevention

2. ____

❒ Patient assessment/diagnosis ❒ Clinical procedures
❒ Patient management ❒ Infection prevention

3. ____

❒ Patient assessment/diagnosis ❒ Clinical procedures
❒ Patient management ❒ Infection prevention

4. ____

❒ Patient assessment/diagnosis ❒ Clinical procedures
❒ Patient management ❒ Infection prevention

5. ____

❒ Patient assessment/diagnosis ❒ Clinical procedures
❒ Patient management ❒ Infection prevention

RECORD OF SKILLS

Skill	Case Number									
	1	2	3	4	5	6	7	8	9	10
Rapid initial assessment and management of a woman who presents with a problem										
Immediate and specific management of shock										
Procedure of blood transfusion, including recognition and management of transfusion reactions										
Anesthesia and pain management associated with obstetric emergencies.										
Identify and repair cervical tears.										
Identify and manage cord prolapse										
Pre- and post-operative care for women who require obstetric surgery.										
Perform Endotracheal intubation.										
Perform Spinal Anesthesia										
Perform a caesarean section.										
Perform a laparotomy for ectopic pregnancy										
Perform a laparotomy for repair of uterine rupture										
Perform a postpartum hysterectomy										
Steps involved in setting up CEmONC services and managing them on a day-to-day basis										

Note: The trainer or clinical preceptor will initial case number and note level of competency: **M** = performed competently with models; **S** = performed with client/patient under supervision of trainer or clinical preceptor; **C** = performed competently with client/patient

GUIDELINES FOR *FINAL* ASSESSMENT OF COMPETENCY

Skills for which *final* assessment *may* be completed using case studies or clinical simulations (patients should be used whenever possible)	**Skills for which *final* assessment *must* be completed with patients (skills should be learned to competency with models, case studies, or clinical simulations first)**
Rapid initial assessment and management of a woman who presents with a problem	Immediate and specific management of shock
Procedure of blood transfusion, including recognition and management of transfusion reactions	Anesthesia and pain management associated with obstetric emergencies.
Identify and repair cervical tears.	Pre- and post-operative care for women who require obstetric surgery.
Endotracheal intubation.	Perform a caesarean section.
Perform a laparotomy for ectopic pregnancy	Perform a postpartum hysterectomy
Perform a laparotomy for repair of uterine rupture	Perform spinal anesthesia
Steps involved in setting up CEmONC services and managing them on a day-to-day basis	
Identify and manage cord prolapse	

LEARNING TOOLS

SKILLS PRACTICE SESSION 1:
ADULT RESUSCITATION

PURPOSE

The purpose of this activity is to enable participants to practice adult resuscitation related to obstetric emergencies and achieve competency in the skills required.

INSTRUCTIONS	RESOURCES
This activity should be conducted in a simulated setting with a fellow participant role-playing as a patient.	The following equipment or representations thereof: • Equipment for starting an IV infusion • Needles and syringes • Equipment for bladder catheterization • Sphygmomanometer and stethoscope • Self-inflating bag and mask, oxygen cylinder, gauge • Endotracheal tube • New examination or high-level disinfected surgical gloves
Participants should review the Learning Guide for Adult Resuscitation before beginning the activity.	Learning Guide for Adult Resuscitation
The trainer should demonstrate the steps/tasks in the procedure of adult resuscitation for participants. Under the guidance of the trainer, participants should then work in pairs to practice the steps/tasks and observe each other's performance, using the Learning Guide for Adult Resuscitation.	Learning Guide for Adult Resuscitation
Participants should be able to perform the steps/tasks in the Learning Guide for Adult Resuscitation before skill competency is assessed by the trainer in the simulated setting, using the Checklist for Adult Resuscitation. Finally, following supervised practice at a clinical site, the trainer should assess the skill competency of each participant, using the Checklist for Adult Resuscitation.[1]	Checklist for Adult Resuscitation Checklist for Adult Resuscitation

[1] If patients are not available at clinical sites for participants to practice adult resuscitation in relation to obstetric emergencies, the skills should be taught, practiced and assessed in a simulated setting.

CLINICAL SIMULATION 1:
MANAGEMENT OF SHOCK (SEPTIC OR HYPOVOLEMIC SHOCK)

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 septic or hypovolemic shock, with emphasis on thinking quickly and reacting (intervening) rapidly.

Instructions: The activity should be carried out in the most realistic setting possible.

- 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: Learning Guide for Adult Resuscitation, sphygmomanometer, stethoscope, equipment for starting an IV infusion, syringes and vials, oxygen cylinder, gauge, self-inflating mask, equipment for bladder catheterization, new examination or high-level disinfected surgical gloves.

SCENARIO 1 **(Information provided and questions asked by the trainer)**	***KEY REACTIONS/RESPONSES*** ***(Expected from participant)***
1. Mrs. L. is a 36-year-old multigravida who has five children. Her husband, who tells you that she gave birth at home with the help of a traditional birth attendant, has carried her into the hospital. The birth attendant told him that the placenta delivered easily and completely immediately after birth, but Mrs. L. has been bleeding "too much" since then. The family tried numerous things to help Mrs. L. before bringing her to the hospital, but she continues to bleed "too much." • What do you do?	• **Shouts** for help to urgently mobilize all available personnel • Evaluates Mrs. L. immediately for shock, including vital signs (temperature, pulse, blood pressure, and respiration rate), level of consciousness, color, and skin temperature • Tells Mrs. L. (and her husband) what is going to be done, listens to her, and responds attentively to her questions and concerns • Turns Mrs. L. on her side, if unconscious or semi-conscious, and keeps the airway open
2. On examination, you find that Mrs. L.'s temperature is 37º C, pulse 120 beats/minute, blood pressure 84/50 mm Hg, and respiration rate 34 breaths/minute. Her skin is cold and clammy. • What do you think is wrong with Mrs. L.? • What will you do now?	• States that Mrs. L. is in shock • 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 • While starting the IV, collects blood for appropriate tests (hemoglobin, blood typing and cross-matching, and bedside clotting test for coagulopathy) • Starts oxygen at 6–8 L/minute • Catheterizes bladder • Looks for the cause of shock (septic or hypovolemic) by palpating the uterus for firmness and tenderness, assessing the amount of blood loss • Covers Mrs. L. to keep her warm • Elevates legs
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*
Discussion Question 2*: If a peripheral vein cannot be cannulated, what should be done?*	***Expected Response****: A venous cut-down should be performed.*

SCENARIO 1 **(Information provided and questions asked by the trainer)**	***KEY REACTIONS/RESPONSES*** ***(Expected from participant)***
3. On further examination, you find that Mrs. L.'s uterus is soft and not contracted, but not tender. Her clothing from the waist down is blood-soaked. • What are Mrs. L.'s main problems? • What are the causes of her shock and bleeding? • What will you do next?	• States that Mrs. L. reportedly lost "too much" blood after childbirth and considerable blood loss is evident on her clothes • States that Mrs. L.'s uterus is soft and not contracted, but not tender; she has no fever • Determines that Mrs. L.'s shock is due to postpartum hemorrhage, atonic uterus • Massages Mrs. L.'s uterus to stimulate a contraction • Starts a second IV infusion and gives oxytocin 20 units in 1 L of fluid at 60 drops/minute
4. After 15 minutes, the uterus is firm and bleeding has stopped, but Mrs. L.'s pulse is still 116 beats/minute, blood pressure 88/60 mm Hg, and respiration rate 32 breaths/minute. • What will you do now?	• Gives another liter of fluid to ensure 2 L are infused within an hour of starting treatment • Continues to give oxygen at 6–8 L/minute • Continues to check that uterus remains contracted • Continues to monitor pulse and blood pressure
5. After another 15 minutes, the uterus is still firm and there is no further bleeding. Mrs. L.'s pulse is 90 beats/minute, blood pressure 100/60 mm Hg, and respiration rate 24 breaths/minute. • What will you do now?	• Adjusts rate of IV infusion to 1 L in 6 hours • Continues to check to ensure that uterus remains contracted • Continues to monitor pulse and blood pressure • Checks that urine output is 30 mL/hour or more
6. Mrs. L.'s conditions has stabilized. Twenty-four hours later, her hemoglobin is 6.5 g/dL. • What will you do now?	• Begins ferrous fumarate 120 mg by mouth PLUS folic acid 400 µg by mouth daily, and advises Mrs. L. that she will need to take this dosage for 3 months

SCENARIO 2 **(Information provided and questions asked by the trainer)**	***KEY REACTIONS/RESPONSES*** ***(Expected from participant*)**
1. Mrs. M. is 26 years old and gave birth at home to her second child, with the help of her neighbor. The family reports that Mrs. M. has had a fever since yesterday, was very restless during the night, and is very drowsy this morning. She was carried into the hospital by her husband and neighbor. ● What do you do?	● **Shouts** for help to urgently mobilize all available personnel ● Evaluates Mrs. M. immediately for shock, including vital signs (temperature, pulse, blood pressure, and respiration rate), level of consciousness, color, and skin temperature ● Tells Mrs. M. (and her husband and neighbor) what is going to be done, listens to her, and responds attentively to her questions and concerns ● Turns Mrs. M. on her side, if unconscious or semi-conscious, and keeps the airway open
2. On examination, you find that Mrs. M.'s temperature is 39.4º C, pulse 136 beats/minute, blood pressure 80/50 mm Hg, and respiration rate 34 breaths/minute. She is confused and drowsy. ● What do you think is wrong with Mrs. M.? ● What will you do now?	● States that Mrs. M. is in shock ● 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 ● While starting the IV, collects blood for appropriate tests (hemoglobin, blood typing and cross-matching, and bedside clotting test for coagulopathy) ● Starts oxygen at 6–8 L/minute ● Catheterizes bladder ● Looks for the cause of the shock (septic or hypovolemic) by palpating the uterus for firmness and tenderness ● Covers Mrs. M. to keep her warm ● Elevates legs
3. On further examination, you find that Mrs. M.'s uterus is tender and that she has foul-smelling lochia. Upon questioning, the neighbor admits that herbs were inserted into Mrs. M.'s vagina during labor. ● What are Mrs. M.'s main problems? ● What are the causes of her shock, and why? ● What will you do next?	● States that Mrs. M. has a fever, a tender uterus, and foul-smelling lochia ● Determines that Mrs. M.'s shock is due to infection resulting from unclean labor and childbirth practices ● Gives penicillin G 2 million units OR ampicillin 2 g IV (and repeats every 6 hours) PLUS gentamicin 5 mg/kg body weight IV (and repeats every 24 hours) PLUS metronidazole 500 mg IV (and repeats every 8 hours)

SCENARIO 2 **(Information provided and questions asked by the trainer)**	***KEY REACTIONS/RESPONSES*** ***(Expected from participant)***
4. After 6 hours, Mrs. M.'s temperature is 38º C, pulse 100 beats/minute, blood pressure 100/60 mm Hg, and respiration rate 24 breaths/minute. She is easily roused and is oriented. ● What will you do now?	● Adjusts rate of IV infusion to 1 L in 6 hours ● Continues to monitor temperature, pulse, and blood pressure ● Checks that urine output is 30 mL/hour or more ● Continues to administer antibiotics

LEARNING GUIDE 1:

ADULT RESUSCITATION

(To be completed by **Participants**)

Rate the performance of each step or task observed using the following rating scale:

1 **Needs Improvement**: Step or task not performed correctly or out of sequence (if necessary) or is omitted

2 **Competently Performed**: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently

3 **Proficiently Performed**: Step or task efficiently and precisely performed in the proper sequence (if necessary)

LEARNING GUIDE FOR ADULT RESUSCITATION (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
GENERAL MANAGEMENT					
1. SHOUT FOR HELP to urgently mobilize available personnel.					
2. Greet the woman respectfully and with kindness.					
3. If the woman is conscious and responsive, tell the woman (and her support person) what is going to be done, listen to her and respond attentively to her questions and concerns.					
4. Provide continual emotional support and reassurance, as feasible.					
IMMEDIATE MANAGEMENT					
1. Check the woman's vital signs: ● Temperature ● Pulse ● Blood pressure ● Respiration					
2. Turn the woman onto her side and ensure that her airway is open. If the woman is not breathing, begin resuscitation measures.					
3. Give oxygen at 6–8 L/minute by face mask or nasal cannula.					
4. Cover the woman with a blanket to ensure warmth.					
5. Elevate the woman's legs—if possible, by raising the foot of the bed.					
BLOOD COLLECTION AND FLUID REPLACEMENT					
1. Use antiseptic handrub or wash hands thoroughly with soap and water and dry with a sterile cloth or air dry.					
2. Put new examination or high-level disinfected surgical gloves on both hands.					

LEARNING GUIDE FOR ADULT RESUSCITATION (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
3. Connect IV tubing to a 1 L container of normal saline or Ringer's lactate.					
4. Run fluid through tubing.					
5. Select a suitable site for infusion (e.g., back of hand or forearm).					
6. Place a tourniquet around the woman's upper arm.					
7. Put new examination or high-level disinfected surgical gloves on both hands.					
8. Clean skin at site selected for infusion.					
9. Insert 16- or 18-gauge needle or cannula into the vein.					
10. Draw blood for hemoglobin, cross-matching and bedside clotting test.					
11. Detach syringe from needle or cannula.					
12. Connect IV tubing to needle or cannula.					
13. Secure the needle or cannula with tape.					
14. Adjust IV tubing to run fluid at a rate sufficiently rapid to infuse 1 L in 15–20 minutes.					
15. Place the blood drawn into a labeled test tube for hemoglobin and cross-matching.					
16. Place 2 mL of blood into a small glass test tube (approximately 10 mm x 75 mm) to do a bedside clotting test: • Hold the test tube in your closed fist to keep it warm. • After 4 minutes, tip the tube slowly to see if a clot is forming. • Tip it again every minute until the blood clots and the tube can be turned upside down. • If a clot fails to form or a soft clot forms that breaks down easily, coagulopathy is possible.					
17. If the woman is not breathing or is not breathing well, perform endotracheal intubation and ventilate with an Ambu bag.					
18. Before removing gloves, dispose of waste materials in a leakproof container or plastic bag.					
19. Immerse both gloved hands in 0.5% chlorine solution. Remove gloves by turning them inside out. • If disposing of gloves, place them in a leakproof container or plastic bag. • If reusing surgical gloves, submerge them in 0.5% chlorine solution for 10 minutes for decontamination.					
20. Use antiseptic handrub or wash hands thoroughly with soap and water and dry with a sterile cloth or air dry.					

LEARNING GUIDE FOR ADULT RESUSCITATION (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
BLADDER CATHETERIZATION					
1. Put new examination or high-level disinfected surgical gloves on both hands.					
2. Clean the external genitalia.					
3. Insert catheter into the urethral orifice and allow urine to drain into a clean receptacle, and measure and record amount.					
4. Secure catheter and attach it to urine drainage bag.					
5. Immerse both gloved hands in 0.5% chlorine solution. Remove gloves by turning them inside out. • If disposing of gloves, place them in a leakproof container or plastic bag. • If reusing surgical gloves, submerge them in 0.5% chlorine solution for 10 minutes decontamination.					
6. Use antiseptic handrub or wash hands thoroughly with soap and water and dry with a clean, dry cloth or air dry.					
REASSESSMENT AND FURTHER MANAGEMENT					
1. Reassess the woman's response to IV fluids within 30 minutes for signs of improvement: • Stabilizing pulse (90 beats/minute or less) • Increasing systolic blood pressure (100 mm Hg or more) • Improving mental status (less confusion or anxiety) • Increasing urine output (30 mL/hour or more)					
2. If the woman's condition improves: • Adjust the rate of IV infusion to 1 L in 6 hours. • Continue management for underlying cause of shock.					
3. If the woman's condition fails to improve: • Infuse normal saline rapidly until her condition improves. • Continue oxygen at 6–8 L/minute. • Continue to monitor vital signs every 15 minutes and intake and output every hour. • Arrange for additional laboratory tests.					
4. Check for bleeding. If heavy bleeding is seen, take steps to stop the bleeding and transfuse blood, if necessary.					
5. Perform the necessary history, physical examination and tests to determine cause of shock if not already known.					

CHECKLIST 1:

ADULT RESUSCITATION

(To be used by the **Participant** for practice and by the **Trainer** at the end of the course)

Place a "✓" in case box if step/task is performed **satisfactorily**, an "**X**" if it is **not** performed **satisfactorily**, or **N/O** if not observed.

Satisfactory: Performs the step or task according to the standard procedure or guidelines

Unsatisfactory: Unable to perform the step or task according to the standard procedure or guidelines

Not Observed: Step or task not performed by participant during evaluation by trainer

PARTICIPANT ____ **Date Observed** ________________

CHECKLIST FOR ADULT RESUSCITATION (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
GENERAL MANAGEMENT					
1. Shout for help.					
2. Greet woman respectfully and with kindness.					
3. Provide continual emotional support and reassurance, as feasible.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
IMMEDIATE MANAGEMENT					
1. Check the woman's vital signs.					
2. Ensure that her airway is open.					
3. Give oxygen at 6–8 L/minute by face mask or nasal cannula.					
4. Ensure that she is warm.					
5. Elevate the woman's legs.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
BLOOD COLLECTION, FLUID REPLACEMENT AND BLADDER CATHETERIZATION					
1. Use antiseptic handrub or wash hands thoroughly and put on new examination or high-level disinfected surgical gloves.					
2. Draw blood for hemoglobin, cross-matching and bedside clotting test before beginning IV infusion.					
3. Infuse IV fluid at the rate of 1 L in 15–20 minutes.					
4. Do a bedside clotting test.					

CHECKLIST FOR ADULT RESUSCITATION (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
5. If the woman is not breathing, or is not breathing well, perform endotracheal intubation and ventilate with a self-inflating bag.					
6. Before removing gloves, dispose of waste materials in a leakproof container or plastic bag.					
7. Remove gloves and discard them in a leakproof container or plastic bag if disposing of or decontaminate them in 0.5% chlorine solution if reusing.					
8. Use antiseptic handrub or wash hands thoroughly and put on new examination or high-level disinfected surgical gloves.					
9. Catheterize the bladder.					
10. Remove gloves and discard them in a leakproof container or plastic bag if disposing of or decontaminate them in 0.5% chlorine solution if reusing.					
11. Use antiseptic handrub or wash hands thoroughly.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
REASSESSMENT AND FURTHER MANAGEMENT					
1. Reassess the woman’s response to IV fluids and adjust rate accordingly.					
2. Continue to monitor vital signs every 15 minutes and intake and output every hour.					
3. Check for bleeding and transfuse blood if necessary.					
4. Perform history, physical examination and tests to determine cause of shock.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					

SKILLS PRACTICE SESSION 2:
BLOOD TRANSFUSION

PURPOSE	INSTRUCTIONS	RESOURCES
The purpose of this activity is to enable learners to practice starting and monitoring a blood transfusion and achieve competency in the skills required.	This activity should be conducted in a simulated setting, using a fellow learner role-playing as a patient.	• Equipment for starting an IV line • Equipment for blood transfusion • Examination or high-level disinfected surgical gloves
	Learners should review Learning Guide before beginning the activity.	Learning Guide: Blood Transfusion
	The teacher should demonstrate the steps/tasks in starting and monitoring a blood transfusion. Under the guidance of the teacher, learners should then work in pairs to practice the steps/tasks and observe each other's performance, using Learning Guide.	Learning Guide: Blood Transfusion
	Learners should be able to perform the steps/tasks in Learning Guide before skill competency is assessed by the teacher in the simulated setting, using Checklist.	Checklist: Blood Transfusion
	Finally, following supervised practice at a clinical site, the teacher should assess the skill competency of each learner, using Checklist.[1]	Checklist: Blood Transfusion

[1] If patients are not available at clinical sites for learners to practice starting and monitoring a blood transfusion in the clinical area, the skills should be taught, practiced and assessed in a simulated setting.

LEARNING GUIDE 2:

BLOOD TRANSFUSION

(To be completed by **Participants**)

Rate the performance of each step or task observed using the following rating scale:

1 **Needs Improvement**: Step or task not performed correctly or out of sequence (if necessary) or is omitted

2 **Competently Performed**: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently

3 **Proficiently Performed**: Step or task efficiently and precisely performed in the proper sequence (if necessary)

LEARNING GUIDE FOR BLOOD TRANSFUSION (Some of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
GETTING READY					
1. Prepare the necessary equipment.					
2. Treat the woman respectfully and with kindness.					
3. Tell the woman what is going to be done, listen to her and respond attentively to her questions and concerns.					
4. Provide continual emotional support and reassurance, as feasible.					
5. Record the following information on the woman's chart: • General appearance • Temperature • Pulse • Blood pressure • Respiration • Fluid intake (IV and oral) • Urine output					
6. Make sure that the woman has an infusion of normal saline or Ringer's lactate running.					
7. Wash hands thoroughly with soap and water and dry with a clean, dry cloth or air dry.					
8. Put new examination or high-level disinfected surgical gloves on both hands.					
STARTING THE BLOOD TRANSFUSION					
1. Confirms woman's identify by confirmation of 2 unique identifiers: (e.g., name, date of birth, medical record number)					

LEARNING GUIDE FOR BLOOD TRANSFUSION (Some of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
2. Check the label on the unit of blood to be transfused to make sure that it matches the woman's blood group.					
3. Have another member of staff double-check this with you.					
4. Attach a blood infusion set to the unit of blood.					
5. Open the clamp on the tubing of the blood infusion set and allow the blood to run through to the end of the tubing.					
6. Attach the tubing to the needle or cannula at the infusion site: • Detach the tubing containing the normal saline infusion. • Immediately attach the tubing from the blood infusion set.					
7. Regulate the clamp on the tubing so that the blood is running at a rate of 20–60 drops/minute.					
8. Immerse both gloved hands in 0.5% chlorine solution. Remove gloves by turning them inside out. • If disposing of gloves, place them in a leakproof container or plastic bag. • If reusing surgical gloves, submerge them in 0.5% chlorine solution for decontamination.					
9. Wash hands thoroughly with soap and water and dry with a clean, dry cloth or air dry.					
10. Record the following information on the woman's record: • Time of starting the transfusion • General appearance • Temperature • Pulse • Blood pressure • Respiration					
MONITORING THE BLOOD TRANSFUSION					
1. Record the following information on the woman's chart 15 minutes after starting the transfusion and then every hour during the transfusion: • General appearance • Temperature • Pulse • Blood pressure • Respiration • Fluid intake (IV and oral) • Urine output					

LEARNING GUIDE FOR BLOOD TRANSFUSION (Some of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
2. Record the following information on the woman's chart when the transfusion is completed: • Time of completion of the transfusion • Volume and type of blood products transfused • Unique donation numbers of products transfused • Any adverse effects of the transfusion					
RESPONDING TO TRANSFUSION REACTION					
1. Stop the transfusion and keep the IV line open with normal saline or Ringer's lactate, if the woman has any of the following adverse reactions to the transfusion: • Skin rash • Fever • Rise in pulse rate • Drop in blood pressure • Confusion • Anaphylactic shock					
2. For mild reactions (skin rash), give promethazine 10 mg by mouth and continue to observe the woman closely.					
3. For acute reactions, manage as for shock and give: • Adrenaline 1:1000 solution (0.1 mL in 10 mL IV normal saline or Ringer's lactate) IV slowly • Promethazine 10 mg IV • Hydrocortisone 1 g IV every 2 hours as needed					
4. If bronchospasm occurs, give aminophylline 250 mg in normal saline or Ringer's lactate 10 mL IV slowly.					
5. Combine resuscitation measures above until stabilized.					
6. Measure urinary output, and monitor respiratory and rate and pulse.					
7. Transfer to referral center when stable.					
8. Record the following information on the woman's chart: • Type of transfusion reaction • Length of time after the start of the transfusion that the reaction occurred • Volume and type of blood products transfused • Unique donation numbers of products transfused					

CHECKLIST 2:

BLOOD TRANSFUSION

(To be used by the **Participant** for practice and by the **Trainer** at the end of the course)

Place a "✓" in case box if step/task is performed **satisfactorily**, an "**X**" if it is **not** performed **satisfactorily**, or **N/O** if not observed.

Satisfactory: Performs the step or task according to the standard procedure or guidelines

Unsatisfactory: Unable to perform the step or task according to the standard procedure or guidelines

Not Observed: Step or task not performed by participant during evaluation by trainer

PARTICIPANT ____ **Date Observed** ________________

CHECKLIST FOR BLOOD TRANSFUSION **(Some of the following steps/tasks should be performed simultaneously.)**					
STEP/TASK	**CASES**				
GETTING READY					
1. Prepare the necessary equipment.					
2. Treat the woman respectfully and with kindness.					
3. Tell the woman (and her support person) what is going to be done, listen to her and respond attentively to her questions and concerns.					
4. Provide continual emotional support and reassurance, as feasible.					
5. Record the woman's vital signs, fluid intake and urine output.					
6. Make sure woman has an infusion of normal saline or Ringer's lactate running.					
7. Wash hands thoroughly and put on new examination or high-level disinfected surgical gloves.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
STARTING AND MONITORING BLOOD TRANSFUSION					
1. Make sure unit of blood matches the woman's blood group.					
2. Infuse blood, using a blood infusion set.					
3. Remove gloves and discard them in leakproof container or plastic bag if disposing of or decontaminate them in 0.5% chlorine solution if reusing.					
4. Wash hands thoroughly.					
5. Monitor the woman's vital signs, fluid intake and urine output every 15 minutes.					

CHECKLIST FOR BLOOD TRANSFUSION (Some of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
6. Respond appropriately to adverse reactions, if necessary.					
7. Record the required information on the woman's record.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					

CASE STUDY 1:
PROLAPSED CORD

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 35-year-old gravida seven, para six. You have provided antenatal care at two antenatal visits, during which Mrs. B.'s pregnancy was found to be progressing well. Her last antenatal visit was 1 week ago. She is now 37 weeks pregnant and has come to the district hospital to report that labor pains started 2 hours ago.

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 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. is having two contractions in 10 minutes, each lasting 20–40 seconds. Her cervix is 4 cm dilated.
The presentation is vertex and the head is not engaged. The fetal heart rate is 130 beats/minute.
Mrs. B.'s vital signs are normal.

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

Two hours after admission, Mrs. B.'s membranes rupture. On vaginal examination, the cord is felt below the head, which is at 0 station. The cervix is 6 cm dilated. The fetal heart rate is 160 beats/minute.

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

SKILLS PRACTICE SESSION 3:
MANAGING PROLAPSED CORD

PURPOSE	INSTRUCTIONS	RESOURCES
The purpose of this activity is to enable learners to practice management of prolapsed cord and achieve competency in the procedure.	This activity should be conducted in a simulated setting, using the appropriate models.	The following equipment or representations thereof: • High-level disinfected or sterile surgical gloves
	Learners should review the Learning Guide before beginning the activity.	Learning Guide : Managing Prolapsed Cord
	The teacher should demonstrate the steps/task in the management of prolapsed cord for learners. Under the guidance of the trainer, learners should then work in pairs to practice the steps/tasks and observe each other's performance, using the Learning Guide.	Learning Guide: Managing Prolapsed Cord
	Learners should be able to perform the steps/tasks in Learning Guide before skill competency is assessed in the simulated setting, using the Checklist	Checklist: Managing Prolapsed Cord
	Finally, following supervised practice at a clinical site, the teacher should assess the skill competency of each learner, using the Checklist	Checklist: Managing Prolapsed Cord

LEARNING GUIDE 3:

MANAGING PROLAPSED CORD

(To be completed by **Participants**)

Rate the performance of each step or task observed using the following rating scale:

1 **Needs Improvement**: Step or task not performed correctly or out of sequence (if necessary) or is omitted

2 **Competently Performed**: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently

3 **Proficiently Performed**: Step or task efficiently and precisely performed in the proper sequence (if necessary)

LEARNING GUIDE FOR MANAGING PROLAPSED CORD (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
GENERAL MANAGEMENT **Note:** The steps/tasks in this learning guide are for managing prolapsed cord when the cord is pulsating and the woman is in the first stage of labor.					
1. Tell the woman (and her support person) what is going to be done, listen to her and respond attentively to her questions and concerns.					
2. Provide continual emotional support and reassurance, as feasible.					
3. Give oxygen 4–6 L/minute by face mask or nasal cannula.					
SPECIFIC MANAGEMENT					
1. Wash hands thoroughly with soap and water and dry with a clean, dry cloth or air dry.					
2. Put high-level disinfected or sterile surgical gloves on both hands.					
3. Place one hand into the vagina.					
4. Push the presenting part upward to: ● Decrease pressure on the cord ● Dislodge the presenting part from the pelvis					
5. Place the other hand on the abdomen in the suprapubic region: ● Hold the presenting part firmly out of the pelvic brim with this hand					
6. Remove the other hand from the vagina.					
7. Continue to hold the presenting part firmly out of the pelvic brim with the hand on the abdomen until the woman has been prepared for cesarean section.					

LEARNING GUIDE FOR MANAGING PROLAPSED CORD (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
POSTPROCEDURE TASKS					
1. Immerse both gloved hands in 0.5% chlorine solution. Remove gloves by turning them inside out. • If disposing of gloves, place them in a leakproof container or plastic bag. • If reusing surgical gloves, submerge them in 0.5% chlorine solution for 10 minutes for decontamination.					
2. Wash hands thoroughly with soap and water and dry with a clean, dry cloth or air dry.					

CHECKLIST 3:

MANAGING PROLAPSED CORD

(To be used by the **Participant** for practice and by the **Trainer** at the end of the course)

Place a "✓" in case box if step/task is performed **satisfactorily**, an "**X**" if it is **not** performed **satisfactorily**, or **N/O** if not observed.

Satisfactory: Performs the step or task according to the standard procedure or guidelines

Unsatisfactory: Unable to perform the step or task according to the standard procedure or guidelines

Not Observed: Step or task not performed by participant during evaluation by trainer

PARTICIPANT ____ **Date Observed** ________________

CHECKLIST FOR MANAGING PROLAPSED CORD **(Many of the following steps/tasks should be performed simultaneously.)**					
STEP/TASK	**CASES**				
GENERAL MANAGEMENT					
1. Tell the woman (and her support person) what is going to be done and encourage them to ask questions.					
2. Provide continual emotional support and reassurance, as feasible.					
3. Give oxygen 4–6 L/minute by face mask or nasal cannula.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
SPECIFIC MANAGEMENT					
1. Wash hands thoroughly and put on high-level disinfected or sterile surgical gloves.					
2. Place one gloved hand into the vagina and push the presenting part upward.					
3. Hold the presenting part firmly out of the pelvic brim with the abdominal hand until woman has been prepared for cesarean section.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
POSTPROCEDURE TASKS					
1. Remove gloves and discard them in a leakproof container or plastic bag if disposing of or decontaminate them in 0.5% chlorine solution if reusing.					
2. Wash hands thoroughly.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					

SKILLS PRACTICE SESSION 4:
REPAIR OF CERVICAL TEARS

PURPOSE

The purpose of this activity is to enable participants to practice repair of cervical tears and achieve competency in the skills required.

INSTRUCTIONS	RESOURCES
This activity should be conducted in a simulated setting, using the appropriate model.	The following equipment or representations thereof: • Foam block to simulate a vagina and cervix • High-level disinfected or sterile surgical gloves • Personal protective equipment • Source running water or alcohol based handrub • Examination light • Vaginal speculum • Ring or sponge forceps • Long needle driver • Suture materials: 0 chromic/polyglycolic • Antiseptic solution • Sterile cotton balls or gauze • Sharps box • Medical waste container • Container for decontamination of equipment
Participants should review the Learning Guide for Repair of Cervical Tears before beginning the activity.	Learning Guide for Repair of Cervical Tears
The trainer should demonstrate the steps/tasks in the procedure of repair of cervical tears for participants. Under the guidance of the trainer, participants should then work in pairs to practice the steps/tasks and observe each other's performance, using the Learning Guide for Repair of Cervical Tears.	Learning Guide for Repair of Cervical Tears
Participants should be able to perform the steps/tasks in the Learning Guide for Repair of Cervical Tears before skill competency is assessed by the trainer in the simulated setting, using the Checklist for Repair of Cervical Tears.	Checklist for Repair of Cervical Tears
Finally, following supervised practice at a clinical site, the trainer should assess the skill competency of each participant, using the Checklist for Repair of Cervical Tears.[1]	Checklist for Repair of Cervical Tears

[1] If patients are not available at clinical sites for participants to practice repair of cervical tears, the skills should be taught, practiced and assessed in a simulated setting.

LEARNING GUIDE 4:

REPAIR OF CERVICAL TEARS

(To be completed by **Participants**)

Rate the performance of each step or task observed using the following rating scale:

1 **Needs Improvement**: Step or task not performed correctly or out of sequence (if necessary) or is omitted

2 **Competently Performed**: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently

3 **Proficiently Performed**: Step or task efficiently and precisely performed in the proper sequence (if necessary)

LEARNING GUIDE FOR REPAIR OF CERVICAL TEARS (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
GETTING READY					
1. Prepare the necessary equipment.					
2. Tell the woman (and her support person) what is going to be done, listen to her and respond attentively to her questions and concerns.					
3. Provide continual emotional support and reassurance, as feasible.					
4. Have the woman empty her bladder or insert a catheter, if necessary.					
5. Give anesthesia (IV pethidine and diazepam, or ketamine), if necessary.					
6. Put on personal protective equipment.					
REPAIR OF CERVICAL TEARS					
1. Use antiseptic handrub or wash hands thoroughly with soap and water and dry with a sterile cloth or air dry.					
2. Put high-level disinfected or sterile surgical gloves on both hands.					
3. Have an assistant shine a light into the vagina.					
4. Clean the vagina and cervix with antiseptic solution.					
5. Have the assistant massage the uterus and provide fundal pressure.					
6. Insert a ring or sponge forceps into the vagina and grasp the cervix on one side of the tear.					
7. Insert a second ring or sponge forceps and grasp the cervix on other side of the tear.					

LEARNING GUIDE FOR REPAIR OF CERVICAL TEARS (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
8. Gently pull in various directions to see the entire cervix as there may be several tears.					
9. Place the handles of both forceps in one hand: ● Hold the cervix steady by gently pulling the forceps toward you.					
10. Place the first suture at the top (the apex) of the tear.					
11. Close the tear with a continuous suture: ● Be sure to include the whole thickness of the cervix each time the suture needle is inserted.					
12. If a long section of the rim of the cervix is tattered, under-run it with a continuous 0 chromic (or polyglycolic) suture.					
13. If the apex is difficult to reach and ligate: ● Grasp it with artery or ring forceps. ● Leave the forceps in place for 4 hours. ● After 4 hours, open the forceps partially but do not remove. ● After another 4 hours, remove the forceps completely.					
POSTPROCEDURE TASKS					
1. Before removing gloves, dispose of waste materials in a leakproof container or plastic bag.					
2. Place all instruments in 0.5% chlorine solution for 10 minutes for decontamination.					
3. Immerse both gloved hands in 0.5% chlorine solution. Remove gloves by turning them inside out. ● If disposing of gloves, place them in a leakproof container or plastic bag. ● If reusing surgical gloves, submerge them in 0.5% chlorine solution for 10 minutes for decontamination.					
4. Use antiseptic handrub or wash hands thoroughly with soap and water and dry with a clean, dry cloth or air dry.					
5. Record the procedure on the woman's record.					

CHECKLIST 4:

REPAIR OF CERVICAL TEARS

(To be used by the **Participant** for practice and by the **Trainer** at the end of the course)

Place a "✓" in case box if step/task is performed **satisfactorily**, an "**X**" if it is **not** performed **satisfactorily**, or **N/O** if not observed.

Satisfactory: Performs the step or task according to the standard procedure or guidelines

Unsatisfactory: Unable to perform the step or task according to the standard procedure or guidelines

Not Observed: Step or task not performed by participant during evaluation by trainer

PARTICIPANT ____ **Date Observed** _________________

CHECKLIST FOR REPAIR OF CERVICAL TEARS (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
GETTING READY					
1. Prepare the necessary equipment.					
2. Tell the woman (and her support person) what is going to be done, listen to her and respond attentively to her questions and concerns.					
3. Provide continual emotional support and reassurance, as feasible.					
4. Have the woman empty her bladder or insert a catheter.					
5. Give anesthesia, if necessary.					
6. Put on personal protective equipment.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
REPAIR OF CERVICAL TEARS					
1. Use antiseptic handrub or wash hands thoroughly and put on high-level disinfected or sterile surgical gloves.					
2. Clean the vagina and cervix with an antiseptic solution.					
3. Grasp both sides of the cervix using ring or sponge forceps (one forceps for each side of tear).					
4. Place the first suture at the top of the tear and close it with a continuous suture, including the whole thickness of the cervix each time the suture needle is inserted.					
5. If a long section of the rim of the cervix is tattered, under-run it with a continuous suture.					
6. Use ring forceps if the apex is difficult to reach and ligate.					

CHECKLIST FOR REPAIR OF CERVICAL TEARS (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
POSTPROCEDURE TASKS					
1. Before removing gloves, dispose of waste materials in a leakproof container or plastic bag.					
2. Place all instruments in 0.5% chlorine solution for decontamination.					
3. Remove gloves and discard them in a leakproof container or plastic bag if disposing of or decontaminate them in 0.5% chlorine solution if reusing.					
4. Use antiseptic handrub or wash hands thoroughly.					
5. Record procedure on woman's record.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					

SKILLS PRACTICE SESSION 5:
ENDOTRACHEAL INTUBATION

PURPOSE

The purpose of this activity is to enable participants to practice endotracheal intubation and achieve competency in the skills required.

INSTRUCTIONS	RESOURCES
This activity should be conducted in a simulated setting, using the appropriate model.	The following equipment or representations thereof: ● Model for endotracheal intubation ● Adult laryngoscope and endotracheal tubes ● Self-inflating bag and mask (adult size) ● New examination or high-level disinfected surgical gloves ● Adhesive tape
Participants should review the Learning Guide for Endotracheal Intubation before beginning the activity.	Learning Guide for Endotracheal Intubation
The trainer should demonstrate the steps/tasks in the procedure of endotracheal intubation for participants. Under the guidance of the trainer, participants should then work in pairs to practice the steps/tasks and observe each other's performance, using the Learning Guide for Endotracheal Intubation.	Learning Guide for Endotracheal Intubation
Participants should be able to perform the steps/tasks in the Learning Guide for Endotracheal Intubation before skill competency is assessed by the trainer in the simulated setting, using the Checklist for Endotracheal Intubation.	Checklist for Endotracheal Intubation
Finally, following supervised practice at a clinical site, the trainer should assess the skill competency of each participant, using the Checklist for Endotracheal Intubation.[1]	Checklist for Endotracheal Intubation

[1] If patients are not available at clinical sites for participants to practice endotracheal intubation, the skills should be taught, practiced and assessed in a simulated setting or, if permitted, on cadavers.

LEARNING GUIDE 5:

ENDOTRACHEAL INTUBATION

(To be completed by **Participants**)

Rate the performance of each step or task observed using the following rating scale:

1. **Needs Improvement**: Step or task not performed correctly or out of sequence (if necessary) or is omitted
2. **Competently Performed**: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently
3. **Proficiently Performed**: Step or task efficiently and precisely performed in the proper sequence (if necessary)

LEARNING GUIDE FOR ENDOTRACHEAL INTUBATION (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
GETTING READY					
1. Prepare the necessary equipment.					
2. If the woman is conscious and responsive, tell the woman (and her support person) what is going to be done, listen to her and respond attentively to her questions and concerns.					
3. Provide continual emotional support and reassurance, as feasible.					
INTUBATION					
1. Use antiseptic handrub or wash hands thoroughly with soap and water and dry with a sterile cloth or air dry.					
2. Put new examination or high-level disinfected surgical gloves on both hands.					
3. Give 100% oxygen by bag and mask for 5 minutes.					
4. Position the woman's head on a folded sheet, ensuring her neck is not extended.					
5. If the woman is conscious, give diazepam 5–10 mg IV slowly over 2 minutes.					
6. Ask an assistant to apply pressure to the cricoid against the esophagus.					
7. Open the woman's mouth and gently insert the laryngoscope over the tongue and toward the back of the throat.					
8. If necessary, suction out any secretions in the throat.					

LEARNING GUIDE FOR ENDOTRACHEAL INTUBATION (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
9. Lift the blade of the laryngoscope upward and forward, using the wrist, to visualize the glottis.					
10. Insert the endotracheal tube and stylet through the glottis into the trachea.					
11. Remove the laryngoscope.					
12. Withdraw the stylet.					
13. Inflate the cuff of the endotracheal tube with 3–5 mL of air.					
14. Connect the endotracheal tube to the Ambu bag.					
ENSURING CORRECT PLACEMENT OF ENDOTRACHEAL TUBE					
1. Press the Ambu bag 2–3 times rapidly while observing the woman's chest for inflation.					
1a. If the chest inflates while pressing the Ambu bag, auscultate the chest to confirm that air is entering both lungs equally. • If air entry into both lungs is unequal, deflate the cuff and gently withdraw the endotracheal tube slightly until air entry is heard equally on both sides. Re-inflate the cuff.					
1b. If the chest does not inflate: • Deflate the cuff and withdraw the endotracheal tube. • Give 100% oxygen by bag and mask for 3 minutes. • Attempt intubation again.					
2. Once the endotracheal tube is properly positioned, use adhesive tape to fix the tube to the woman's face.					
3. Before removing gloves, dispose of waste materials in a leakproof container or plastic bag.					
4. Immerse both gloved hands in 0.5% chlorine solution. Remove gloves by turning them inside out. • If disposing of gloves, place them in a leakproof container or plastic bag. • If reusing surgical gloves, submerge them in 0.5% chlorine solution for 10 minutes for decontamination.					
5. Use antiseptic handrub or wash hands thoroughly with soap and water and dry with a clean, dry cloth or air dry.					
EXTUBATION					
1. Confirm that the woman is ready for extubation.					
2. Use antiseptic handrub or wash hands thoroughly with soap and water and dry with a sterile cloth or air dry.					
3. Put new examination or high-level disinfected surgical gloves on both hands.					

LEARNING GUIDE FOR ENDOTRACHEAL INTUBATION (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
4. Remove adhesive tape that holds the tube in position.					
5. Gently open the woman's mouth and suction out any secretions in the throat.					
6. Deflate the cuff of the endotracheal tube and gently remove the tube.					
7. Give oxygen by mask while ensuring that regular breathing is established.					
8. Before removing gloves, dispose of waste materials in a leakproof container or plastic bag.					
9. Immerse both gloved hands in 0.5% chlorine solution. Remove gloves by turning them inside out. ● If disposing of gloves, place them in a leakproof container or plastic bag. ● If reusing surgical gloves, submerge them in 0.5% chlorine solution for 10 minutes for decontamination.					
10. Use antiseptic handrub or wash hands thoroughly with soap and water and dry with a clean, dry cloth or air dry.					

CHECKLIST 5:

ENDOTRACHEAL INTUBATION

(To be used by the **Participant** for practice and by the **Trainer** at the end of the course)

Place a "✓" in case box if step/task is performed **satisfactorily**, an "**X**" if it is **not** performed **satisfactorily**, or **N/O** if not observed. **Satisfactory**: Performs the step or task according to the standard procedure or guidelines **Unsatisfactory**: Unable to perform the step or task according to the standard procedure or guidelines **Not Observed**: Step or task not performed by participant during evaluation by trainer

PARTICIPANT ____ **Date Observed** ________________

CHECKLIST FOR ENDOTRACHEAL INTUBATION (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
GETTING READY					
1. Prepare the necessary equipment.					
2. If the woman is conscious and responsive, tell the woman (and her support person) what is going to be done, listen to her and respond attentively to her questions and concerns.					
3. Provide continual emotional support and reassurance, as feasible.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
INTUBATION					
1. Use antiseptic handrub or wash hands thoroughly and put on new examination or high-level disinfected surgical gloves.					
2. Give oxygen.					
3. Position the woman's head.					
4. Give diazepam, if necessary.					
5. Ask an assistant to apply pressure to the cricoid against the esophagus.					
6. Insert the laryngoscope. If necessary, suction out any secretions in the throat. Visualize the glottis.					
7. Insert the endotracheal tube, remove the laryngoscope and withdraw the stylet.					
8. Inflate the cuff of the endotracheal tube and connect it to the Ambu bag.					

CHECKLIST FOR ENDOTRACHEAL INTUBATION (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
ENSURING CORRECT PLACEMENT OF ENDOTRACHEAL TUBE					
1. Observe inflation of the chest and auscultate the chest to ensure correct placement of the endotracheal tube.					
2. Once the endotracheal tube is properly positioned, fix the tube to the woman's face.					
3. Before removing gloves, dispose of waste materials in a leakproof container or plastic bag.					
4. Remove gloves and discard them in a leakproof container or plastic bag if disposing of or decontaminate them in 0.5% chlorine solution if reusing.					
5. Use antiseptic handrub or wash hands thoroughly.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
EXTUBATION					
1. Confirm that the woman is ready for extubation.					
2. Use antiseptic handrub or wash hands thoroughly and put on new examination or high-level disinfected surgical gloves.					
3. Remove the tube.					
4. Give oxygen while ensuring that regular breathing is established.					
5. Before removing gloves, dispose of waste materials in a leakproof container or plastic bag.					
6. Remove gloves and discard them in a leakproof container or plastic bag if disposing of or decontaminate them in 0.5% chlorine solution if reusing.					
7. Use antiseptic handrub or wash hands thoroughly.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					

SKILLS PRACTICE SESSION 6:
CESAREAN SECTION

PURPOSE

The purpose of this activity is to enable participants to practice performing cesarean section and achieve competency in the skills required.

INSTRUCTIONS	RESOURCES
This activity should be performed under close supervision of the trainer.	The following equipment or representations thereof: • High-level disinfected or sterile surgical gloves • Face masks, eye shields, head/shoe covering, OT gowns • Water source/alcohol handrub • Waste receptacles • Sharps disposal box • Antiseptic solution • Pelvic model or foam block • Drapes • Bladder catheter • Needles and syringes • Infusion kits • Suture materials • Fetal model (with hard skull) • Receptacle for placenta • Cesarean Section kit
Participants should review the Learning Guide for Cesarean Section before beginning the activity.	Learning Guide for Cesarean Section
The trainer should demonstrate the correct use of all instruments and correct suturing and knots technique with a pelvic block or foam model. Under the guidance of the trainer, participants should then do a return demonstration.	Learning Guide for Cesarean Section
The trainer should then demonstrate each step of a cesarean section.. One participant acts as second assistant. As second assistant, the participant observes the demonstration.	Learning Guide for Cesarean Section

INSTRUCTIONS	RESOURCES
The trainer demonstrates each step again but this time the same participant acts as first assistant. As first assistant, the participant provides retraction, keeps site clear of blood, removes clamps, cuts sutures and, under guidance of the trainer, closes the abdomen.	Learning Guide for Cesarean Section
The same participant now performs the procedure with the trainer as first assistant.	Learning Guide for Cesarean Section
Finally, the same participant performs the procedure again. The trainer acts as second assistant. The trainer should assess the skill competency of the participant, using the Checklist for Cesarean Section.	Checklist for Cesarean Section

LEARNING GUIDE 6:

CESAREAN SECTION

(To be completed by **Participants**)

Rate the performance of each step or task observed using the following rating scale:

1 **Needs Improvement**: Step or task not performed correctly or out of sequence (if necessary) or is omitted

2 **Competently Performed**: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently

3 **Proficiently Performed**: Step or task efficiently and precisely performed in the proper sequence (if necessary)

LEARNING GUIDE FOR CESAREAN SECTION (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
GETTING READY					
1. Prepare the necessary equipment.					
2. Tell the woman (and her support person) what is going to be done, listen to her, respond attentively to her questions and concerns and obtain informed consent.					
3. Examine the woman, check fetal presentation and fetal heart rate, and examine the medical record for information and completeness including indication for caesarean section. Ensure that vaginal delivery is not possible.					
4. Obtain blood for hemoglobin and blood type and cross-match 2 units of blood. ● Do not wait for results if maternal or fetal distress. If patient is severely plan to transfuse two units of blood if available.					
5. Set up an IV line and infuse 500 cc of IV fluids (normal saline or Ringer's lactate).					
6. Give premedication including: ● Atropine 0.6 mg IM (or IV if in theater) ● Magnesium trisilicate 300 mg by mouth, OR sodium citrate 30 ml by mouth (sodium citrate works for only 20 minutes and should be given immediately before induction of anesthesia if general anesthesia is used) or ranitidine 150 mgs by mouth or 50 mgs IV to reduce stomach acidity					
7. Catheterize the woman's bladder and keep a catheter in place during the procedure.					
8. Help the woman to put on a gown and cap.					

LEARNING GUIDE FOR CESAREAN SECTION (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
9. Evaluate anesthetic options: • General anesthetic • Local anesthetic • Spinal anesthetic					
PREPROCEDURE TASKS					
1. Put on theater clothes, protective footwear, cap, facemask, protective eyeglasses and a plastic apron.					
2. Perform a surgical handscrub for 3 to 5 minutes and dry each hand on a separate high-level disinfected or sterile towel.					
3. Put on a sterile gown and put high-level disinfected or sterile surgical gloves on both hands.					
4. Ensure that the instruments and supplies are available and arrange them on a sterile tray or in a high-level disinfected container. Conduct an instrument and swab count and ask an assistant to note on board.					
5. Ensure that an assistant is scrubbed and dressed.					
PREPARING THE WOMAN					
1. Tilt operating table to the left or place a pillow under the woman's right lower back.					
2. Ensure that the woman has been anesthetized and the anesthesia has taken full effect.					
3. Check the fetal heart rate.					
4. Beginning at the proposed incision site and working outward in a circular motion, apply antiseptic solution three times using an HLD/sterilized ring forceps and sterile cotton or gauze swab. Keep arms and elbows high and surgical dress away from the surgical field. Do not contaminate the glove by touching unprepared skin. Allow to dry.					
5. Drape the abdomen, leaving the surgical area exposed, and then drape the woman.					
PROCEDURE					
1. Ask the instrument nurse to stand with the instrument tray on the other side toward the foot of the woman.					
2. Stand on the right side of the woman and ask the assistant to stand on the left side of the woman.					
3. Make a midline vertical incision below the umbilicus to the pubic hair through the skin and to the level of the fascia.					
4. Clamp any significant bleeding points with artery forceps, and tie off the vessels with plain 0 catgut or cauterize the tissue.					

LEARNING GUIDE FOR CESAREAN SECTION (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
5. Make a 2–3 cm midline vertical incision in the fascia					
6. Hold the fascial edges with forceps and lengthen the incision up and down using scissors.					
7. Use fingers or scissors to separate the rectus muscle.					
8. Use fingers to make an opening in the peritoneum near the umbilicus. Use scissors to lengthen the incision up and down in order to see the entire uterus. Carefully, to prevent bladder injury, use scissors to separate layers and open the lower part of the peritoneum.					
9. Place a bladder retractor over the pubic bone.					
10. After careful identification of the midline, use forceps to pick up the loose peritoneum covering the anterior surface of the lower uterine segment and incise with scissors.					
11. Extend the incision by placing the scissors between the uterus and the loose serosa and cutting about 3 cm on each side in a transverse fashion.					
12. Use two fingers to push the bladder downwards off of the lower uterine segment and replace the bladder retractor over the pubic bone to retract the bladder downward.					
13. Use a scalpel to make a 3 cm transverse incision in the lower segment of the uterus at the midline. It should be about 1 cm below the level where the vesico-uterine serosa was incised to bring the bladder down.					
14. Widen the incision by placing a finger at each edge and gently pulling upward and laterally at the same time.					
15. If it is necessary to extend the incision, do so using scissors instead of fingers to avoid extension into the uterine vessels. Make a crescent-shaped incision.					
16. If the membranes are intact, rupture them. Ask the assistant to suction the liquid.					
DELIVERING THE NEWBORN					
1. Place one hand inside the uterine cavity between the uterus and the fetal head.					
2. With your fingers, grasp and flex the head.					
3. Gently lift the fetal head through the incision, taking care not to extend the incision down toward the cervix.					
4. With the other hand, gently press on the abdomen over the top of the uterus to help deliver the head.					

LEARNING GUIDE FOR CESAREAN SECTION (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
5. If the fetal head is deep in the pelvis or vagina, ask an assistant (not the scrubbed nurse) to put on high-level disinfected gloves and push the head up through the vagina from below. Then lift and deliver the head.					
6. Suction the newborn's mouth and nose immediately after delivery of the head through the incision.					
7. Deliver the shoulders and body.					
8. Start infusion of oxytocin 20 units in 1 L IV fluid (normal saline or Ringer's lactate) at 60 drops per minute for 2 hours.					
9. Clamp the umbilical cord at two points and cut in between the clamps.					
10. Hand the newborn to midwife or assistant for initial care.					
11. Ask an assistant to give a single dose of prophylactic antibiotics—ampicillin 2 g IV or cefazolin 1 g IV.					
12. While massaging the uterus, deliver the placenta and membranes by controlled cord traction or if necessary, manually extract.					
13. Quickly inspect the placenta for completeness and abnormalities.					
CLOSING THE UTERINE INCISION AND ABDOMEN					
1. Ask an assistant to conduct an instrument and swab count and immediately begin closure of the uterine incision.					
2. Grasp the edges and corners of the uterine incision with clamps or ring forceps. Make sure that the clamp on the lower edge of the incision is separate from the bladder. Look carefully for any vertical extensions of the uterine incision and hold edges in similar fashion with clamps or ring forceps.					
3. Repair any vertical extensions of the original incision first, with a single layer of continuous locking stitch of 0 chromic catgut suture. Then repair the uterine incision, starting at the opposite corner using a single layer of continuous locking stitch of 0 chromic catgut suture. Take care not to touch the needle with fingers					
4. Ensure hemostasis. If there is any further bleeding from the incision site, close with figure-of-eight sutures. There is no need for a routine second layer of sutures along the uterine incision unless the walls of the lower uterine segment wall is unusually thick.					
5. Make sure there is no bleeding and the uterus is firm before closing the abdomen. Perform uterine massage as necessary to keep uterus firm. Use a sponge to remove any clots inside the abdomen.					

LEARNING GUIDE FOR CESAREAN SECTION (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
6. Check for injury to the bladder. If the bladder has been injured, identify the extent of the injury and repair it. There is no need to close the bladder or abdominal peritoneum routinely.					
7. Hold the fascia at the upper and lower ends of the incision using clamps. Place a clamp midway on either side of the incision.					
8. Close the fascia with a continuous 0 polyglycolic (or 0 chromic catgut) suture. • Ensure that the peritoneum and intraperitoneal contents are not included in the suture.					
9. *If there are signs of infection*, pack the subcutaneous tissue with gauze and place loose interrupted 0 catgut (or polyglycolic) sutures. Close the skin with a delayed closure after the infection has cleared. *If there are no signs of infection*: • Use plain catgut interrupted sutures to bring the fat layer together, if necessary. • Use 3-0 nylon (or silk) on a cutting needle to place interrupted mattress sutures about 2 cm apart to bring the skin layer together.					
10. Ensure there is no bleeding or oozing from the incision and apply a sterile dressing. Clean off any dried blood or other fluids from the abdominal wall with a moistened gauze.					
11. Gently push on the abdomen over the uterus to evacuate clots from the uterus and the vagina.					
12. Assist in getting woman off operating table.					
POSTPROCEDURE TASKS					
1. Before removing gloves, remove blade from knife handle with a small clamp, and dispose of blade and all suture needles in sharps container. Dispose of waste materials in a leakproof container or plastic bag.					
2. Place all instruments in 0.5% chlorine solution for 10 minutes for decontamination.					
3. Remove gown and then immerse both gloved hands in 0.5% chlorine solution. Remove gloves by turning them inside out and then place in a leakproof container or plastic bag for disposal..					
4. Wash hands thoroughly with soap and water and dry with a clean, dry cloth or air dry.					
5. Write notes of the operation, postoperative observations and management instructions.					
6. Monitor pulse, blood pressure, respiration rate and bleeding, both from the wound and vaginally.					

LEARNING GUIDE FOR CESAREAN SECTION (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
7. Assess the woman before she is transferred out of the recovery area.					
8. Check woman on the ward daily or as frequently as necessary.					
9. Discuss reasons for cesarean section, family planning options and spacing of future pregnancies before discharge.					
10. Schedule appointment for postpartum care.					

CHECKLIST 6:

CESAREAN SECTION

(To be used by the **Participant** for practice and by the **Trainer** at the end of the course)

Place a "✓" in case box if step/task is performed **satisfactorily**, an "**X**" if it is **not** performed **satisfactorily**, or **N/O** if not observed.

Satisfactory: Performs the step or task according to the standard procedure or guidelines

Unsatisfactory: Unable to perform the step or task according to the standard procedure or guidelines

Not Observed: Step or task not performed by participant during evaluation by trainer

PARTICIPANT ______________________________________ **Date Observed** ________________

CHECKLIST FOR CESAREAN SECTION (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
GETTING READY					
1. Prepare the necessary equipment.					
2. Tell the woman (and her support person) what is going to be done, listen to her, respond attentively to her questions and concerns and obtain informed consent.					
3. Examine the woman, check fetal presentation and heartrate, assess her condition and ensure that vaginal delivery is not possible.					
4. Obtain blood for hemoglobin and blood type and cross-match 2 units of blood.					
5. Set up an IV line and infuse 500 cc of IV fluids.					
6. Give premedication including: • Atropine • Antacid					
7. Catheterize the woman's bladder.					
8. Help the woman to put on a gown and cap.					
9. Evaluate anesthetic options: • General anesthetic • Local anesthetic • Spinal anesthetic					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					

CHECKLIST FOR CESAREAN SECTION (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
PREPROCEDURE TASKS					
1. Put on theater clothes, protective footwear, cap, facemask, protective eyeglasses and a plastic apron.					
2. Perform a surgical handscrub and put on high-level disinfected or sterile surgical gloves and a sterile gown.					
3. Ensure that the instruments and supplies are available and arrange them on a sterile tray or in a high-level disinfected container. Conduct an instrument and swab count and ask an assistant to note on board.					
4. Ensure that an assistant is scrubbed and dressed.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
PREPARING THE WOMAN					
1. Tilt operating table to the left or place a pillow under the woman's right lower back.					
2. Ensure that the anesthesia has taken full effect.					
3. Check the fetal heartrate					
4. Apply antiseptic solution to the abdomen, allow to dry, and place a drape over the woman.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
PROCEDURE					
1. Make a 2–3 cm midline vertical incision below the umbilicus to the pubic hair through skin and fascia.					
2. Lengthen the fascial incision and separate the rectus muscle.					
3. Open the the peritoneum carefully.					
4. Place a bladder retractor over the pubic bone.					
5. Incise the loose peritoneum covering the lower uterine segment and extend transversely.					
6. Push the bladder downward off the lower uterine segment and replace the bladder retractor over the pubic bone to retract the bladder downward.					
7. Make a 3 cm transverse incision in the lower segment of the uterus at the midline.					
8. Widen the incision and extend with scissors if necessary.					
9. If the membranes are intact, rupture them.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					

CHECKLIST FOR CESAREAN SECTION (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
DELIVERING THE NEWBORN					
1. Place one hand inside the uterine cavity between the uterus and the fetal head.					
2. Grasp and flex the head, and gently lift the fetal head through the incision.					
3. Gently press on the abdomen over the top of the uterus to help deliver the head. If necessary, ask an assistant to push the head up through the vagina from below.					
4. Suction the newborn's mouth and nose after delivery of the head.					
5. Deliver the shoulders and body of the baby and clamp and cut the umbilical cord. Hand the baby to an assistant.					
6. Ask an assistant to give a single dose of prophylactic antibiotics—ampicillin 2 g IV or cefazolin 1 g IV.					
7. Deliver the placenta and inspect it for completeness or abnormalities.					
8. Perform uterine massage to keep uterus firm.					
9. Conduct an instrument and swab count.					
10. Repair the uterus and ensure hemostatsis.					
11. Ensure that there is no further bleeding.					
12. Check the bladder for injury and repair injury, if necessary.					
13. Close the fascia with a continuous 0 polyglycolic or 0 chromic catgut suture, ensuring that the peritoneum and intraperitoneal contents are not included in the suture.					
14. If there are signs of infection, pack the subcutaneous tissue with gauze and place interrupted 0 catgut (or polyglycolic) sutures. Perform delayed skin closure after the infection has cleared. If there are no signs of infection, close the fat layer, if necessary, with an interrupted plain catgut suture and close the skin with interrupted mattress sutures about 2 cm apart, using a cutting needle and 3-0 nylon or silk.					
15. Ensure there is no bleeding and apply a sterile dressing.					
16. Evacuate clots from vagina by gently pushing on the abdomen over the uterus.					
17. Assist in getting woman off operating table.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					

CHECKLIST FOR CESAREAN SECTION (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
POSTPROCEDURE TASKS					
1. Before removing gloves, remove blade from knife handle. Dispose of blade and all suture needles in sharps container, and dispose of waste materials in a leakproof container or plastic bag.					
2. Place all instruments in 0.5% chlorine solution for decontamination.					
3. Remove gown and then gloves and discard them in a leakproof container or plastic bag					
4. Wash hands thoroughly with soap and water.					
6. Write operation notes and post-operative management instructions.					
7. Monitor pulse, blood pressure, respiration rate and bleeding.					
8. Assess the woman before she is transferred out of the recovery area.					
9. Check woman on the ward daily or as frequently as necessary.					
10. Discuss reasons for cesarean section, family planning options and future pregnancies before discharge.					
11. Schedule appointment for postpartum care.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					

SKILLS PRACTICE SESSION 7:
SALPINGECTOMY FOR ECTOPIC PREGNANCY

PURPOSE

The purpose of this activity is to enable participants to practice performing salpingectomy for ectopic pregnancy and achieve competency in the skills required.

INSTRUCTIONS	RESOURCES
This activity should be performed under close supervision of the trainer.	The following equipment or representations thereof: • High-level disinfected or sterile surgical gloves • Face masks, eye shields, head/shoe covering, OT gowns • Water source/alcohol handrub • Waste receptacles • Sharps disposal box • Antiseptic solution • Pelvic model or foam block • Drapes • Bladder catheter • Needles and syringes • Infusion kits • Suture materials
Participants should review the Learning Guide for Salpingectomy before beginning the activity.	Learning Guide for Salpingectomy
The trainer should demonstrate the correct use of all instruments and correct suturing and knots technique with a pelvic block or foam model. Under the guidance of the trainer, participants should then do a return demonstration.	Learning Guide for Salpingectomy
The trainer should then demonstrate each step of a cesarean section.. One participant acts as second assistant. As second assistant, the participant observes the demonstration.	Learning Guide for Salpingectomy
The trainer demonstrates each step again but this time the same participant acts as first assistant. As first assistant, the participant provides retraction, keeps site clear of blood, removes clamps, cuts sutures and, under guidance of the trainer, closes the abdomen.	Learning Guide for Salpingectomy

INSTRUCTIONS	RESOURCES
The same participant now performs the procedure with the trainer as first assistant.	Learning Guide for Salpingectomy
Finally, the same participant performs the procedure. The trainer acts as second assistant. The trainer should assess the skill competency of the participant, using the Checklist for Salpingectomy.	Checklist for Salpingectomy

LEARNING GUIDE 7:

SALPINGECTOMY FOR ECTOPIC PREGNANCY

(To be completed by **Participants**)

Rate the performance of each step or task observed using the following rating scale:

1 Needs Improvement: Step or task not performed correctly or out of sequence (if necessary) or is omitted

2 Competently Performed: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently

3 Proficiently Performed: Step or task efficiently and precisely performed in the proper sequence (if necessary)

LEARNING GUIDE FOR SALPINGECTOMY FOR ECTOPIC PREGNANCY (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
GETTING READY					
1. Prepare the necessary equipment.					
2. Tell the woman (and her support person) what is going to be done, listen to her, respond attentively to her questions and concerns and obtain informed consent.					
3. Examine the woman, assess her condition and examine the medical record for information and completeness.					
4. Infuse IV fluids (normal saline or Ringer's lactate) and check hemoglobin and availability of cross-matched blood.					
5. Catheterize the woman's bladder.					
6. Arrange for anesthesia.					
7. Ask the anesthetist to give a single dose of prophylactic antibiotics: • Ampicillin 2 g IV, OR • Cefazolin 1 g IV					
PREPROCEDURE TASKS					
1. Put on theater clothes, protective footwear, cap, facemask, protective eyeglasses and a plastic apron.					
2. Perform a surgical handscrub for 3 to 5 minutes and dry each hand on a separate high-level disinfected or sterile towel.					
3. Put on a sterile gown and put high-level disinfected or sterile surgical gloves on both hands.					

LEARNING GUIDE FOR SALPINGECTOMY FOR ECTOPIC PREGNANCY (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
4. Ensure that the instruments and supplies are available and arrange them on a sterile tray or in a high-level disinfected container. Conduct an instrument and swab count and ask an assistant to note on board.					
5. Ensure that an assistant is scrubbed and dressed.					
PREPARING THE WOMAN					
1. Place the woman in the supine position on the operating table.					
2. Ensure that the woman has been anesthetized and the anesthesia has taken full effect.					
3. Beginning at the proposed skin incision site and working outward in a circular motion, apply antiseptic solution three times using an HLD/sterilized ring forceps and sterile cotton or gauze swab. Keep arms and elbows high and surgical dress away from the surgical field. Do not contaminate the glove by touching unprepared skin. Allow to dry.					
4. Drape the abdomen, leaving the surgical area exposed, and then drape the woman.					
OPENING THE ABDOMEN					
1. Ask the instrument nurse to stand with the instrument tray at the foot of the woman.					
2. Stand on the right side of the woman and ask the assistant to stand on the left side of the woman.					
3. Make a midline vertical incision below the umbilicus to the pubic hair, through the skin and to the level of the fascia.					
4. Clamp any significant bleeding points with artery forceps, and tie off the vessels with plain 0 catgut or cauterize the tissue.					
5. Make a 2–3 cm midline vertical incision in the fascia.					
6. Hold the fascial edges with forceps and push the tip of closed scissors under the fascia and above the rectus muscles through this incision.					
7. Open the scissors to make a tunnel under the fascia.					
8. Close the scissors and withdraw them. Use the scissors to cut the fascia along and up to the end of the tunnel.					
9. Repeat steps 7–9 until the fascia is opened the entire length of the skin incision.					
10. Insert the index fingers of both hands, back to back, between the rectus muscles (abdominal wall muscles) and separate the muscles. At the lower end, separate the two pyramidalis muscles by using scissors to cut the aponeurosis between them. The peritoneum should now be exposed.					

LEARNING GUIDE FOR SALPINGECTOMY FOR ECTOPIC PREGNANCY (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
11. Use fingers to make an opening in the peritoneum near the umbilicus.					
12. Lift the peritoneum up using forceps.					
13. Use scissors to extend the incision in the peritoneum up and down, under direct vision, taking care to avoid damage to the bladder and other organs.					
14. Explore the abdomen and inspect the uterus and both tubes and ovaries					
15. Place a bladder retractor over the pubic bone.					
16. Place self-retaining abdominal retractors.					
SALPINGECTOMY					
1. Identify and bring to view the fallopian tube with the ectopic pregnancy and its ovary.					
2. Apply traction forceps (e.g., Babcock) to increase exposure and clamp the mesosalpinx to stop any bleeding.					
3. Aspirate blood from the lower abdomen and remove blood clots.					
4. If necessary, use agauze pad moistened with warm, sterile saline to pack away the bowel and omentum from the operative field.					
5. Divide the mesosalpinx using a series of clamps, applying each clamp close to the tube to preserve ovarian vasculature.					
6. Transfix and tie the divided mesosalpinx with 2-0 chromic catgut (or polyglycolic) suture before releasing the clamps.					
7. Place a proximal suture around the tube at the isthmic end and excise the tube.					
8. Ensure that there is no bleeding from the cut end of the fallopian tube and remove blood clots.					
9. Before closing the abdomen, check for injury to the bladder. If the bladder has been injured, identify the extent of the injury and repair it.					
CLOSING THE ABDOMEN					
1. Conduct an instrument and swab count and ask an assistant to record.					
2. Hold the fascia at the upper and lower ends of the incision using Kocher's forceps. Place a clamp midway on either side of the incision. The abdominal peritoneum does not require closure.					
3. Close the fascia with a continuous 0 polyglycolic (or 0 chromic catgut) suture. Ensure that the peritoneum and intraperitoneal contents are not included in the suture.					

LEARNING GUIDE FOR SALPINGECTOMY FOR ECTOPIC PREGNANCY (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
4. Use plain catgut interrupted sutures to bring the fat layer together, if necessary. Use 3-0 nylon (or silk) on a cutting needle to place interrupted mattress sutures about 2 cm apart to bring the skin layer together.					
5. Ensure there is no bleeding or oozing from the incision and apply a sterile dressing. Clean off any dried blood or other fluids from the abdominal wall with a moistened gauze. .					
6. Before removing gloves, remove blade from knife handle with a small clamp and dispose of blade and all suture needles in sharps container. Dispose of waste materials in a leakproof container or plastic bag.					
7. Place all instruments in 0.5% chlorine solution for 10 minutes for decontamination.					
8. Immerse both gloved hands in 0.5% chlorine solution. Remove gloves by turning them inside out and then place in a leakproof container or plastic bag for disposal.					
9. Wash hands thoroughly with soap and water and dry with a clean, dry cloth or air dry.					
POSTPROCEDURE CARE					
1. Transfer the woman to the recovery area. Do not leave the woman unattended until the effects of the anesthesia have worn off.					
2. Write notes of the operation, postoperative observations and management instructions.					
3. Assess the woman before she is transferred out of the recovery area.					
4. Once the woman has woken fully from the anesthesia, explain what was found at surgery and what procedures have been done.					
5. Ensure the woman has written postoperative instructions (e.g., awareness of complications and warning signs, when to return to work) and necessary medications before discharge.					
6. Tell her when to return if followup is needed and that she can return anytime she has concerns.					
7. Discuss reproductive goals, provide counseling on prognosis for fertility including risk of another ectopic and, if appropriate, provide family planning.					

CHECKLIST 7:

SALPINGECTOMY FOR ECTOPIC PREGNANCY

(To be used by the **Participant** for practice and by the **Trainer** at the end of the course)

Place a "✓" in case box if step/task is performed **satisfactorily**, an "**X**" if it is **not** performed **satisfactorily**, or **N/O** if not observed.

Satisfactory: Performs the step or task according to the standard procedure or guidelines

Unsatisfactory: Unable to perform the step or task according to the standard procedure or guidelines

Not Observed: Step or task not performed by participant during evaluation by trainer

PARTICIPANT ____ **Date Observed** ________________

CHECKLIST FOR SALPINGECTOMY FOR ECTOPIC PREGNANCY (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
GETTING READY					
1. Prepare the necessary equipment.					
2. Tell the woman (and her support person) what is going to be done, listen to her, respond attentively to her questions and concerns and obtain informed consent.					
3. Examine the woman, assess her condition and examine the medical record for information and completeness.					
4. Infuse IV fluids.					
5. Catheterize the woman's bladder.					
6. Have anesthetist give anesthesia and prophylactic antibiotics.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
PREPROCEDURE TASKS					
1. Put on theater clothes, protective footwear, cap, facemask, protective eyeglasses and a plastic apron.					
2. Perform a surgical handscrub and put on high-level disinfected or sterile surgical gloves and a sterile gown.					
3. Ensure that the instruments and supplies are available and arrange them on a sterile tray or in a high-level disinfected container. Conduct an instrument and swab count and ask an assistant to note on board.					
4. Ensure that an assistant is scrubbed and dressed.					

CHECKLIST FOR SALPINGECTOMY FOR ECTOPIC PREGNANCY (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
PREPARING THE WOMAN					
1. Place the woman in the supine position on the operating table.					
2. Ensure that the anesthesia has taken full effect.					
3. Apply antiseptic solution to the abdomen and place a drape over the woman.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
OPENING THE ABDOMEN					
1. Make a midline vertical incision below the umbilicus to the pubic hair through skin and fascia.					
2. Lengthen the incision and separate the rectus muscle.					
3. Enter the peritoneum well above the bladder.					
4. Place a bladder retractor and self-retaining abdominal retractors.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
SALPINGECTOMY					
1. Identify and bring to view the affected fallopian tube and its ovary.					
2. Clamp the mesosalpinx to stop bleeding, aspirate blood from the abdomen and remove any blood clots.					
3. If necessary, use a moistened gauze pad to pack away the bowel and omentum from the operative field.					
4. Divide the mesosalpinx using a series of clamps and tie the mesosalpinx with 2-0 chromic catgut (or polyglycolic) suture.					
5. Place a proximal suture around the tube at the isthmic end and excise the tube.					
6. Ensure that there is no bleeding.					
7. Check the bladder for injury and repair injury, if necessary.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
CLOSING THE ABDOMEN					
1. Conduct an instrument and swab count and record					
2. Close the fascia with a continuous 0 polyglycolic (or 0 chromic catgut) suture. Ensure that the peritoneum and intraperitoneal contents are not included in the suture.					
3. Close the fat layer if necessary and close the skin with interrupted mattress sutures.					

CHECKLIST FOR SALPINGECTOMY FOR ECTOPIC PREGNANCY (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
4. Ensure there is no bleeding, apply a sterile dressing and clean off any dried blood or other fluids from the abdominal wall with a moistened gauze.					
5. Before removing gloves, dispose of waste materials in a leakproof container or plastic bag and dispose of sharps in the sharps container.					
6. Place all instruments in 0.5% chlorine solution for decontamination.					
7. Remove gloves and discard them in a leakproof container or plastic bag.					
8. Use antiseptic handrub or wash hands thoroughly.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
POSTPROCEDURE CARE					
1. Do not leave the woman unattended until the effects of the anesthesia have worn off.					
2. Explain to the woman what was found at surgery and what procedures have been done.					
3. Ensure the woman has written postoperative instructions, necessary medications before discharge and instructions regarding a followup visit.					
4. Provide counseling on prognosis for fertility and, if appropriate, provide family planning.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					

SKILLS PRACTICE SESSION 8:
POSTPARTUM HYSTERECTOMY

PURPOSE

The purpose of this activity is to enable participants to practice performing postpartum hysterectomy and achieve competency in the skills required.

INSTRUCTIONS	RESOURCES
This activity should be done in a real patient situation under close supervision of the trainer.	The following equipment or representations thereof: • High-level disinfected or sterile surgical gloves • Face masks, eye shields, head/shoe covering, OT gowns • Water source/alcohol handrub • Waste receptacles • Sharps disposal box • Antiseptic solution • Sterile gauze • Pelvic model or foam block • Drapes • Bladder catheter • Needles and syringes • Infusion kits • Suture materials
Participants should review the Learning Guide for postpartum hysterectomy before beginning the activity.	Learning Guide for postpartum hysterectomy
The trainer should demonstrate the correct use of all instruments and correct suturing and knots technique with a pelvic block or foam model. Under the guidance of the trainer, participants should then do a return demonstration.	Learning Guide for postpartum hysterectomy
The trainer should then demonstrate each step of a cesarean section.. One participant acts as second assistant. As second assistant, the participant observes the demonstration.	Learning Guide for postpartum hysterectomy

INSTRUCTIONS	RESOURCES
The trainer demonstrates each step again but this time the same participant acts as first assistant. As first assistant, the participant provides retraction, keeps site clear of blood, removes clamps, cuts sutures and, under guidance of the trainer, closes the abdomen.	Learning Guide for postpartum hysterectomyy
The same participant now performs the procedure with the trainer as first assistant.	Learning Guide for postpartum hysterectomy
Finally, the same participant performs the procedure. The trainer acts as second assistant. The trainer should assess the skill competency of the participant, using the Checklist for postpartum hysterectomy	Checklist for postpartum hysterectomy

LEARNING GUIDE 8:

POSTPARTUM HYSTERECTOMY

(To be completed by **Participants**)

Rate the performance of each step or task observed using the following rating scale:

1 **Needs Improvement**: Step or task not performed correctly or out of sequence (if necessary) or is omitted

2 **Competently Performed**: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently

3 **Proficiently Performed**: Step or task efficiently and precisely performed in the proper sequence (if necessary)

LEARNING GUIDE FOR POSTPARTUM HYSTERECTOMY

(Many of the following steps/tasks should be performed simultaneously. If hysterectomy is performed for uncontrollable hemorrhage following vaginal delivery, keep in mind that speed is essential.)

STEP/TASK	CASES				
GETTING READY					
1. Prepare the necessary equipment.					
2. Tell the woman (and her support person) what is going to be done, listen to her, respond attentively to her questions and concerns and obtain informed consent.					
3. Examine the woman, assess her condition and examine the medical record for information and completeness.					
4. Infuse IV fluids (normal saline or Ringer's lactate). Obtain blood for hemoglobin and blood type and cross-match 2 units of blood.					
5. Catheterize the woman's bladder and keep catheter in place during the procedure.					
6. Discuss anesthesia options with anesthetist.					
7. Ask the anesthetist to give a single dose of prophylactic antibiotics: ● Ampicillin 2 g IV ● Cefazolin 1 g IV					
PREPROCEDURE TASKS					
1. Put on theater clothes, protective footwear, cap, facemask, protective eyeglasses and a plastic apron.					
2. Perform a surgical handscrub for 3 to 5 minutes and dry each hand on a separate high-level disinfected or sterile towel.					
3. Put on a sterile gown and put high-level disinfected or sterile surgical gloves on both hands.					

LEARNING GUIDE FOR POSTPARTUM HYSTERECTOMY (Many of the following steps/tasks should be performed simultaneously. If hysterectomy is performed for uncontrollable hemorrhage following vaginal delivery, keep in mind that speed is essential.)					
STEP/TASK	**CASES**				
4. Ensure that the instruments and supplies are available and arrange them on a sterile tray or in a high-level disinfected container. Conduct an instrument and swab count and ask an assistant to note on board.					
5. Ensure that an assistant is scrubbed and dressed.					
PREPARING THE WOMAN					
1. Place the woman in supine position on the operating table. Consider dorsal lithotomy position where appropriate equipment is available.					
2. Ensure that the woman has been anesthetized and the anesthesia has taken full effect.					
3. Beginning at the proposed skin incision site and working outward in a circular motion, apply antiseptic solution three times using an HLD/sterilized ring forceps and sterile cotton or gauze swab. Keep arms and elbows high and surgical dress away from the surgical field. Do not contaminate the glove by touching unprepared skin. Allow to dry.					
4. Drape the abdomen, leaving the surgical area exposed, and then drape the woman.					
OPENING THE ABDOMEN					
1. Ask the instrument nurse to stand with the instrument tray toward the foot of the woman.					
2. Stand on the right side of the woman and ask the assistant to stand on the left side of the woman.					
3. Make a midline vertical incision below the umbilicus to the pubic hair, through the skin and to the level of the fascia.					
4. Clamp any significant bleeding points with artery forceps, and tie off the vessels with plain 0 catgut or cauterize the tissue.					
5. Make a 2–3 cm midline vertical incision in the fascia.					
6. Hold the fascial edges with forceps and push the tip of closed scissors under the fascia and above the rectus muscles through this incision.					
7. Open the scissors to make a tunnel under the fascia.					
8. Close the scissors and withdraw them. Use the scissors to cut the fascia along and up to the end of the tunnel.					
9. Repeat steps 7–9 until the fascia is opened the entire length of the skin incision.					

LEARNING GUIDE FOR POSTPARTUM HYSTERECTOMY (Many of the following steps/tasks should be performed simultaneously. If hysterectomy is performed for uncontrollable hemorrhage following vaginal delivery, keep in mind that speed is essential.)					
STEP/TASK	**CASES**				
10. Insert the index fingers of both hands, back to back, between the rectus muscles (abdominal wall muscles) and separate the muscles. At the lower end, separate the two pyramidalis muscles by using scissors to cut the aponeurosis between them. The peritoneum should now be exposed.					
11. Use fingers to make an opening in the peritoneum near the umbilicus. Alternatively, lift the peritoneum with two forceps, ensure that no intra-abdominal contents are caught in forceps, and incise the peritoneum.					
12. Lift the peritoneum up using forceps.					
13. Use scissors to extend the incision in the peritoneum up and down, under direct vision, taking care to avoid damage to the bladder and other organs.					
14. Explore the abdomen and inspect the uterus					
15. Aspirate blood from the lower abdomen and remove any blood clots.					
16. Place a bladder retractor over the pubic bone.					
17. Place self-retaining abdominal retractors.					
SUBTOTAL HYSTERECTOMY					
1. Lift the uterus out of the pelvis and examine the front, back and sides of the uterus.					
2. Identify uterine landmarks: round ligaments, fallopian tubes and ovaries					
3. Doubly clamp and then cut the round ligaments bilaterally with scissors and ligate with 0 or 1 chromic catgut (or polyglycolic) suture					
4. If performed in setting of severe postpartum hemorrhage, ligate the round ligaments with 0 or 1 chromic catgut (or polyglycolic) suture after the uterine arteries are ligated					
5. From the edge of the cut round ligament, open the anterior leaf of the broad ligament bilaterally with scissors and incise to the point where the bladder peritoneum is reflected onto the lower uterine surface at the midline.					
6. If performed after caesarean section, open the anterior leaf of the broad ligament and extend to where the bladder peritoneum was opened in preparation for hysterotomy.					
7. Use two fingers to push the posterior leaf of the broad ligament forward, just under the tube and ovary. Make a hole the size of a finger in the broad ligament using scissors.					

LEARNING GUIDE FOR POSTPARTUM HYSTERECTOMY (Many of the following steps/tasks should be performed simultaneously. If hysterectomy is performed for uncontrollable hemorrhage following vaginal delivery, keep in mind that speed is essential.)					
STEP/TASK	**CASES**				
8. Doubly clamp and cut the tube, the utero-ovarian ligament and the broad ligament through the hole in the broad ligament. Repeat the procedure on the opposite side.					
9. If performed in setting of severe postpartum hemorrhage, ligate the utero- ovarian pedicles with 0 or 1 chromic catgut (or polyglycolic) suture after the uterine arteries are secured.					
10. Divide the posterior leaf of the broad ligament downwards towards the utero sacral ligaments bilaterally, using scissors					
11. Grasp the edge of the bladder flap anteriorly with forceps or a small clamp. • Using fingers or scissors, dissect the bladder downwards off of the lower uterine segment. Direct the pressure downwards but inwards toward the cervix and the lower uterine segment. If performed after caesarean section, check to be sure that bladder is adequately dissected from the lower uterine segment and cervix.					
12. Feel for the junction of the uterus and cervix. If cervix cannot be easily identified or palpated (common finding after labor and or vaginal delivery), have an assistant place an antiseptic-soaked gauze on a long ring forceps and slide up to the apex of the vagina to assist in identification of cervico-vaginal junction. Leave gauze and ring forceps in place at apex with ring forceps.					
13. Locate the uterine artery on each side of the uterus at the junction of the uterus and the cervix.					
14. Doubly clamp across the uterine vessels at a 90˚ angle to the uterus on each side of the cervix. Place a third clamp on the uterine vessels higher up to control back bleeding. Cut and doubly ligate with 0 chromic catgut (or polyglycolic) suture.					
15. Observe carefully for any further bleeding from the uterine pedicles and the uterus. If the uterine arteries are ligated correctly, bleeding should stop and the uterus should look pale.					
16. Return to the clamped pedicles of the round ligaments and tubo-ovarian ligaments and ligate them with 0 chromic catgut (or polyglycolic) suture					
17. Amputate the uterus at the cervico-vaginal junction and above the level where the uterine arteries are ligated using scissors					
18. Close the cervical stump with interrupted 2-0 or 3-0 chromic catgut (or polyglycolic) sutures					

LEARNING GUIDE FOR POSTPARTUM HYSTERECTOMY (Many of the following steps/tasks should be performed simultaneously. If hysterectomy is performed for uncontrollable hemorrhage following vaginal delivery, keep in mind that speed is essential.)					
STEP/TASK	**CASES**				
19. Carefully inspect the cervical stump, leaves of the broad ligament and other pelvic floor structures for any bleeding					
20. If bleeding persists or a clotting disorder is suspected, place a drain through the abdominal wall: • Make a stab incision in the lower abdomen about 3–4 cm away from the edge of the midline incision, just below the level of the anterior superior iliac spine. • Insert a long clamp through the incision. • Grasp the end of the abdominal drain and bring this end out through the incision. • Ensure that the peritoneal end of the drain is in place and anchor the drain to the skin with nylon or silk suture.					
21. Ensure there is no bleeding and remove any blood clots.					
22. Before closing the abdomen, check for injury to the bladder. If the bladder has been injured, identify the extent of the injury and repair it.					
CLOSING THE ABDOMEN					
1. Conduct an instrument and swab count and ask an assistant to record.					
2. Hold the fascia at the upper and lower ends of the incision using Kocher's forceps. Place a clamp midway on either side of the incision. (There is no need to close the bladder or the abdominal peritoneum)					
3. Close the fascia with a continuous 0 polyglycolic (or 0 chromic catgut) suture. Ensure that the peritoneum and intraperitoneal contents are not included in the suture.					
4. *If there are signs of infection*, pack the subcutaneous tissue with gauze and place loose interrupted 0 catgut (or polyglycolic) sutures. Close the skin with a delayed closure after the infection has cleared. • *If there are no signs of infection*: Use plain catgut interrupted sutures to bring the fat layer together, if necessary.Use 3-0 nylon (or silk) on a cutting needle to place interrupted mattress sutures about 2 cm apart to bring the skin layer together.					
5. Ensure there is no bleeding or oozing from the incision and apply a sterile dressing. Clean off any dried blood or other fluids from the abdominal wall with a moistened gauze. .					
6. Before removing gloves, remove blade from knife handle with a small clamp and dispose of blade and all suture needles in sharps container. Dispose of waste materials in a leakproof container or plastic bag.					

LEARNING GUIDE FOR POSTPARTUM HYSTERECTOMY (Many of the following steps/tasks should be performed simultaneously. If hysterectomy is performed for uncontrollable hemorrhage following vaginal delivery, keep in mind that speed is essential.)					
STEP/TASK	**CASES**				
7. Place all instruments in 0.5% chlorine solution for 10 minutes for decontamination.					
8. Immerse both gloved hands in 0.5% chlorine solution. Remove gloves by turning them inside out and then place in a leakproof container or plastic bag for disposal..					
9. Wash hands thoroughly with soap and water and dry with a clean, dry cloth or air dry.					
POSTPROCEDURE CARE					
1. Transfer the woman to the recovery area. Do not leave the woman unattended until the effects of the anesthesia have worn off.					
2. Write notes of the operation, postoperative observations and management instructions.					
3. Assess the woman before she is transferred out of the recovery area.					
4. Once the woman has woken fully from the anesthesia, explain what was found at surgery and what procedures have been done.					
5. Ensure the woman has written postoperative instructions (e.g., awareness of complications and warning signs, when to return to work) and necessary medications before discharge.					
6. Tell her when to return if followup is needed and that she can return anytime she has concerns.					

CHECKLIST 8:

POSTPARTUM HYSTERECTOMY

(To be used by the **Participant** for practice and by the **Trainer** at the end of the course)

Place a "✓" in case box if step/task is performed **satisfactorily**, an "**X**" if it is **not** performed **satisfactorily**, or **N/O** if not observed.

Satisfactory: Performs the step or task according to the standard procedure or guidelines

Unsatisfactory: Unable to perform the step or task according to the standard procedure or guidelines

Not Observed: Step or task not performed by participant during evaluation by trainer

PARTICIPANT ____ **Date Observed** ________________

CHECKLIST FOR POSTPARTUM HYSTERECTOMY (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
GETTING READY					
1. Prepare the necessary equipment.					
2. Tell the woman (and her support person) what is going to be done, listen to her, respond attentively to her questions and concerns and obtain informed consent.					
3. Examine the woman, assess her condition and examine the medical record for information and completeness.					
4. Set up an IV line and infuse IV fluids.					
5. Catheterize the woman's bladder.					
6. Have anesthetist give anesthesia and prophylactic antibiotics.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
PREPROCEDURE TASKS					
1. Put on theater clothes, protective footwear, cap, facemask, protective eyeglasses and a plastic apron.					
2. Perform a surgical handscrub and put on high-level disinfected or sterile surgical gloves and a sterile gown.					
3. Ensure that the instruments and supplies are available and arrange them on a sterile tray or in a high-level disinfected container. Conduct an instrument and swab count and ask an assistant to note on board.					
4. Ensure that an assistant is scrubbed and dressed.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					

CHECKLIST FOR POSTPARTUM HYSTERECTOMY (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
PREPARING THE WOMAN					
1. Place the woman in the supine position on the operating table.					
2. Ensure that the anesthesia has taken full effect.					
3. Apply antiseptic solution to the abdomen and place a drape over the woman.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
OPENING THE ABDOMEN					
1. Make a 2–3 cm midline vertical incision below the umbilicus to the pubic hair through skin and fascia.					
2. Lengthen the incision and separate the rectus muscle.					
3. Enter the peritoneum well above the bladder.					
4. Aspirate blood from the abdomen and remove any blood clots.					
5. Place a bladder retractor and self-retaining abdominal retractors.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
SUBTOTAL HYSTERECTOMY					
1. Lift the uterus out of the pelvis and identify landmarks.					
2. Doubly clamp and cut the round ligaments bilaterally.					
3. Open the anterior leaf of the broad ligament bilaterally and extend to the midline					
4. Perforate the posterior leaf of the broad ligament and then doubly clamp and cut the utero-ovarian pedicles bilaterally adjacent to the uterus					
5. Dissect the bladder away from the lower uterine segment					
6. Identify the uterine arteries bilaterally at the the junction of the uterus and cervix. Doubly clamp cut and ligate the uterine arteries bilaterally with 1 or 0 chromic catgut (polyglycolic) suture. Use a third clamp to control back bleeding.					
7. Ligate the clamped pedicles of the round ligaments and tubo-ovarian ligaments with 1 or 0 chromic catgut (polyglycolic) suture.					
8. Amputate the uterus above the level where the uterine arteries are ligated.					
9. Close the cervical stump with interrupted 0 chromic catgut (polyglycolic) sutures.					
10. Place an abdominal drain if necessary.					
11. Check the bladder for injury and repair injury, if necessary.					

CHECKLIST FOR POSTPARTUM HYSTERECTOMY (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
CLOSING THE ABDOMEN					
1. Conduct an instrument and swab count.					
2. Close the fascia with a running suture, using a cutting needle and 0 chromic catgut (or polyglycolic) suture					
3. If there are signs of infection, pack the subcutaneous tissue with gauze. Close the skin with a delayed closure after the infection has cleared. If there are no signs of infection, close the fat layer, if necessary, with an interrupted plain catgut suture and close the skin with interrupted mattress sutures.of 3-0 nylon or silk.					
4. Ensure there is no bleeding from the incision and apply a sterile dressing.					
5. Before removing gloves, dispose of waste materials in a leakproof container or plastic bag.					
6. Place all instruments in 0.5% chlorine solution for decontamination.					
7. Remove gloves and discard them in a leakproof container or plastic bag					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
POSTPROCEDURE CARE					
1. Do not leave the woman unattended until the effects of the anesthesia have worn off.					
2. Explain to the woman what was found at surgery and what procedures have been done.					
3. Ensure the woman has written postoperative instructions, necessary medications before discharge and instructions regarding a followup visit.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					

SKILLS PRACTICE SESSION 9:
REPAIR OF UTERINE RUPTURE

PURPOSE

The purpose of this activity is to enable participants to practice performing repair of a rupture uterus and achieve competency in the skills required.

INSTRUCTIONS	RESOURCES
This activity should be done in a real patient situation under close supervision of the trainer.	The following equipment or representations thereof: • High-level disinfected or sterile surgical gloves • Face masks, eye shields, head/shoe covering, OT gowns • Water source/alcohol handrub • Waste receptacles • Sharps disposal box • Antiseptic solution • Sterile gauze • Pelvic model or foam block • Drapes • Bladder catheter • Needles and syringes • Infusion kits • Suture materials
Participants should review the Learning Guide for ruptured uterus before beginning the activity.	Learning Guide for ruptured uterus
The trainer should demonstrate the correct use of all instruments and correct suturing and knots technique with a pelvic block or foam model. Under the guidance of the trainer, participants should then do a return demonstration.	Learning Guide for ruptured uterus
The trainer should then demonstrate each step of a ruptured uterus repair.One participant acts as second assistant. As second assistant, the participant observes the demonstration.	Learning Guide for ruptured uterus

INSTRUCTIONS	RESOURCES
The trainer demonstrates each step again but this time the same participant acts as first assistant. As first assistant, the participant provides retraction, keeps site clear of blood, removes clamps, cuts sutures and, under guidance of the trainer, closes the abdomen.	Learning Guide for ruptured uterus
The same participant now performs the procedure with the trainer as first assistant.	Learning Guide for ruptured uterus
Finally, the same participant performs the procedure. The trainer acts as second assistant. The trainer should assess the skill competency of the participant, using the Checklist for postpartum hysterectomy	Checklist for ruptured uterus

LEARNING GUIDE 9:

LAPAROTOMY AND REPAIR OF RUPTURED UTERUS

(To be completed by **Participants**)

Rate the performance of each step or task observed using the following rating scale:

1. **Needs Improvement**: Step or task not performed correctly or out of sequence (if necessary) or is omitted
2. **Competently Performed**: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently
3. **Proficiently Performed**: Step or task efficiently and precisely performed in the proper sequence (if necessary)

LEARNING GUIDE FOR LAPAROTOMYAND REPAIR OF RUPTURED UTERUS

(Many of the following steps/tasks should be performed simultaneously. If uterine rupture occurs during labor or is associated with hemorrhage, keep in mind that speed is essential)

STEP/TASK	CASES				
GETTING READY					
1. Prepare the necessary equipment.					
2. Tell the woman (and her support person) what is going to be done, listen to her, respond attentively to her questions and concerns and obtain informed consent.					
3. Examine the woman, assess her condition and examine the medical record for information and completeness. If rupture occurs during labor, check fetal presentation and fetal heart rate.					
4. Infuse IV fluids (normal saline or Ringer's lactate). Obtain blood for hemoglobin and blood type and cross-match 2 units of blood					
5. Catheterize the woman's bladder and keep catheter in place during the procedure..					
6. Discuss anesthesia options with anesthetist.					
7. Ask the anesthetist to give a single dose of prophylactic antibiotics: • Ampicillin 2 g IV • Cefazolin 1 g IV • If baby still in utero, delay prophylactic antibiotics until after cord is clamped and cut.					
PREPROCEDURE TASKS					
1. Put on theater clothes, protective footwear, cap, facemask, protective eyeglasses and a plastic apron.					
2. Perform a surgical handscrub for 3 to 5 minutes and dry each hand on a separate high-level disinfected or sterile towel.					

LEARNING GUIDE FOR LAPAROTOMYAND REPAIR OF RUPTURED UTERUS (Many of the following steps/tasks should be performed simultaneously. If uterine rupture occurs during labor or is associated with hemorrhage, keep in mind that speed is essential)					
STEP/TASK	**CASES**				
3. Put on a sterile gown and put high-level disinfected or sterile surgical gloves on both hands.					
4. Ensure that the instruments and supplies are available and arrange them on a sterile tray or in a high-level disinfected container. Conduct an instrument and swab count and ask an assistant to note on board.					
5. Ensure that an assistant is scrubbed and dressed.					
PREPARING THE WOMAN					
1. Tilt operating table to the left or place a pillow under the woman's right lower back.if baby still in utero. If postpartum, place the woman in dorsal supine position.					
2. Ensure that the woman has been anesthetized and the anesthesia has taken full effect.					
3. Beginning at the proposed incision site and working outward in a circular motion, apply antiseptic solution three times using an HLD/sterilized ring forceps and sterile cotton or gauze swab. Keep arms and elbows high and surgical dress away from the surgical field. Do not contaminate the glove by touching unprepared skin. Allow to dry.					
4. Drape the abdomen, leaving the surgical area exposed, and then drape the woman.					
OPENING THE ABDOMEN					
1. Ask the instrument nurse to stand with the instrument tray toward the foot of the woman.					
2. Stand on the right side of the woman and ask the assistant to stand on the left side of the woman.					
3. Make a midline vertical incision below the umbilicus to the pubic hair, through the skin and to the level of the fascia.					
4. Clamp any significant bleeding points with artery forceps, and tie off the vessels with plain 0 catgut or cauterize the tissue.					
5. Make a 2–3 cm midline vertical incision in the fascia.					
6. Hold the fascial edges with forceps and push the tip of closed scissors under the fascia and above the rectus muscles through this incision.					
7. Open the scissors to make a tunnel under the fascia.					
8. Close the scissors and withdraw them. Use the scissors to cut the fascia along and up to the end of the tunnel.					
9. Repeat steps 7–9 until the fascia is opened the entire length of the skin incision.					

LEARNING GUIDE FOR LAPAROTOMYAND REPAIR OF RUPTURED UTERUS (Many of the following steps/tasks should be performed simultaneously. If uterine rupture occurs during labor or is associated with hemorrhage, keep in mind that speed is essential)					
STEP/TASK	**CASES**				
10. Insert the index fingers of both hands, back to back, between the rectus muscles (abdominal wall muscles) and separate the muscles. At the lower end, separate the two pyramidalis muscles by using scissors to cut the aponeurosis between them. The peritoneum should now be exposed.					
11. Use fingers to make an opening in the peritoneum near the umbilicus. Alternatively, lift the peritoneum with two forceps, ensure that no intra-abdominal contents are caught in forceps, and incise the peritoneum.					
12. Lift the peritoneum up using forceps.					
13. Use scissors to extend the incision in the peritoneum up and down, under direct vision, taking care to avoid damage to the bladder and other organs.					
14. Eplore the abdomen and inspect the uterus for the site of rupture.					
15. Aspirate blood from the lower abdomen and remove any blood clots.					
16. Place a bladder retractor over the pubic bone.					
17. Place self-retaining abdominal retractors.					
REPAIR OF UTERINE RUPTURE					
1. If baby still in utero, deliver the newborn and placenta as usual for caesarean delivery. Repair caesarean hysterotomy in standard fashion.					
2. Ask the anesthetist to infuse oxytocin 20 units in 1 L normal saline or Ringer's lactate at 60 drops per minute.					
3. Check for uterine contractions. After the uterus contracts, ask the anesthetist to reduce oxytocin infusion rate to 20 drops per minute.					
4. Lift the uterus out of the pelvis and examine the front, back and sides of the uterus and identify the rupture site.					
5. Hold the bleeding edges of the rupture with Green Armytage clamps (or ring forceps).					
6. If necessary, separate the urinary bladder from the lower uterine segment by sharp and blunt dissection depending on the extent of scarring. .					

LEARNING GUIDE FOR LAPAROTOMYAND REPAIR OF RUPTURED UTERUS (Many of the following steps/tasks should be performed simultaneously. If uterine rupture occurs during labor or is associated with hemorrhage, keep in mind that speed is essential)					
STEP/TASK	**CASES**				
7. Determine if the tear is through the cervix and vagina or laterally through the uterine artery or if there is a broad ligament hematoma, and repair as necessary. Seek additional surgical assistance as needed *If rupture through cervix and vagina:* • mobilize the bladder at least 2 cms below the tear if possible, place a suture 1 cm below the upper end of the cervical tear and maintain traction on the suture to bring the lower end of the tear into view as the repair continues *If rupture laterally through the uterine artery* • ligate the injured artery after careful identification of the ureter					
8. Repair the uterine tear using continuous locking sutures with 0 chromic catgut (or polyglycolic) suture, ensuring the ureter is not included in a stitch.					
9. Place a second layer of sutures if bleeding is not controlled or if the upper segment of the uterus is involved in the rupture.					
10. Check the fallopian tubes and ovaries. If tubal ligation was requested, perform the procedure.					
11. If there is bleeding, control by clamping with long artery forceps and ligating. If the bleeding points are deep, use figure-of-eight sutures.					
12. If bleeding persists or a clotting disorder is suspected, place a drain through the abdominal wall: • Make a stab incision in the lower abdomen about 3–4 cm away from the edge of the midline incision, just below the level of the anterior superior iliac spine. • Insert a long clamp through the incision. • Grasp the end of the abdominal drain and bring this end out through the incision. • Ensure that the peritoneal end of the drain is in place and anchor the drain to the skin with nylon or silk suture.					
13. Ensure there is no bleeding and remove any blood clots.					
14. Before closing the abdomen, check for injury to the bladder. If the bladder has been injured, identify the extent of the injury and repair it.					
CLOSING THE ABDOMEN					
1. Conduct an instrument and swab count.					
2. Hold the fascia at the upper and lower ends of the incision using Kocher's forceps. Place a clamp midway on either side of the incision.					
3. Close the fascia with a continuous 0 polyglycolic (or 0 chromic catgut) suture. Ensure that the peritoneum and intraperitoneal contents are not included in the suture.					

LEARNING GUIDE FOR LAPAROTOMYAND REPAIR OF RUPTURED UTERUS (Many of the following steps/tasks should be performed simultaneously. If uterine rupture occurs during labor or is associated with hemorrhage, keep in mind that speed is essential)					
STEP/TASK	**CASES**				
4. *If there are signs of infection*, pack the subcutaneous tissue with gauze and place loose interrupted 0 catgut (or polyglycolic) sutures. Close the skin with a delayed closure after the infection has cleared. • *If there are no signs of infection*: Use plain catgut interrupted sutures to bring the fat layer together, if necessary.Use 3-0 nylon (or silk) on a cutting needle to place interrupted mattress sutures about 2 cm apart to bring the skin layer together.					
5. Ensure there is no bleeding or oozing from the incision and apply a sterile dressing. Clean off any dried blood or other fluids from t abdominal wall with a moistened gauze					
6. Before removing gloves, remove blade from knife handle with a small clamp and dispose of blade and all suture needles in sharps container. Dispose of waste materials in a leakproof container or plastic bag.					
7. Place all instruments in 0.5% chlorine solution for 10 minutes for decontamination.					
8. Immerse both gloved hands in 0.5% chlorine solution. Remove gloves by turning them inside out and then place in a leakproof container or plastic bag for disposal.					
9. Wash hands thoroughly with soap and water and dry with a clean, dry cloth or air dry.					
POSTPROCEDURE CARE					
1. Transfer the woman to the recovery area. Do not leave the woman unattended until the effects of the anesthesia have worn off.					
2. Write notes of the operation, postoperative observations and management instructions.					
3. Assess the woman before she is transferred out of the recovery area.					
4. Once the woman has woken fully from the anesthesia, explain what was found at surgery and what procedures have been done.					
5. Ensure the woman has written postoperative instructions (e.g., awareness of complications and warning signs, when to return to work) and necessary medications before discharge.					
6. Tell her when to return if followup is needed and that she can return anytime she has concerns.					
7. If tubal ligation was not performed, discuss reproductive goals, provide counseling on prognosis for fertility and, if appropriate, provide family planning. If the woman wishes to have more children, advise her to have an elective cesarean section for future pregnancies.					

CHECKLIST 9:

LAPAROTOMY AND REPAIR OF RUPTURED UTERUS

(To be used by the **Participant** for practice and by the **Trainer** at the end of the course)

Place a "✓" in case box if step/task is performed **satisfactorily**, an "**X**" if it is **not** performed **satisfactorily**, or **N/O** if not observed.

Satisfactory: Performs the step or task according to the standard procedure or guidelines

Unsatisfactory: Unable to perform the step or task according to the standard procedure or guidelines

Not Observed: Step or task not performed by participant during evaluation by trainer

PARTICIPANT ____ **Date Observed** ________________

CHECKLIST FOR LAPAROTOMY AND REPAIR OF RUPTURED UTERUS (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
GETTING READY					
1. Prepare the necessary equipment.					
2. Tell the woman (and her support person) what is going to be done, listen to her, respond attentively to her questions and concerns and obtain informed consent.					
3. Examine the woman, assess her condition and examine the medical record for information and completeness.					
4. Set up an IV line and infuse IV fluids. Send blood for haemoglobin and crossmatch.					
5. Catheterize the woman's bladder.					
6. Have anesthetist give anesthesia and prophylactic antibiotics. If baby still in utero, delay prophylactic antibiotics until after cord is clamped and cut.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
PREPROCEDURE TASKS					
1. Put on theater clothes, protective footwear, cap, facemask, protective eyeglasses and a plastic apron.					
2. Perform a surgical handscrub and put on high-level disinfected or sterile surgical gloves and a sterile gown.					

CHECKLIST FOR LAPAROTOMY AND REPAIR OF RUPTURED UTERUS (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
3. Ensure that the instruments and supplies are available and arrange them on a sterile tray or in a high-level disinfected container. Conduct an instrument and swab count and ask an assistant to note on board.					
4. Ensure that an assistant is scrubbed and dressed.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
PREPARING THE WOMAN					
1. Place the woman in the left lateral tilt position on the operating table.					
2. Ensure that the anesthesia has taken full effect.					
3. Apply antiseptic solution to the abdomen and place a drape over the woman.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
OPENING THE ABDOMEN					
1. Make a 2–3 cm midline vertical incision below the umbilicus to the pubic hair through skin and fascia.					
2. Lengthen the incision and separate the rectus muscle.					
3. Enter the peritoneum bluntly well above the bladder.					
4. Examine the uterus for the site of rupture.					
5. Aspirate blood from the abdomen and remove any blood clots.					
6. Place a bladder retractor and self-retaining abdominal retractors.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
REPAIR OF UTERINE RUPTURE					
1. Deliver the newborn and placenta. Repair the caesarean hysterotomy.					
2. Infuse oxytocin.					
3. Separate urinary bladder from uterus as required.					
4. Determine if the tear is through the cervix and vagina or laterally through the uterine artery or if there is a broad ligament hematoma, and repair as necessary.					
5. Repair uterine tear using continuous locking sutures with 0 chromic catgut (or polyglycolic) suture.					
6. Check the fallopian tubes and ovaries, and perform tubal ligation, if requested.					
7. Control bleeding by clamping and using figure-of-eight sutures.					

CHECKLIST FOR LAPAROTOMY AND REPAIR OF RUPTURED UTERUS (Many of the following steps/tasks should be performed simultaneously.)					
STEP/TASK	**CASES**				
8. Place an abdominal drain if necessary.					
9. Check the bladder for injury and repair injury, if necessary.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
CLOSING THE ABDOMEN					
1. Conduct an instrument and swab count.					
2. Close the fascia with a running suture, using 0 chromic catgut (or polyglycolic) suture					
3. *If there are signs of infection*, pack the subcutaneous tissue with gauze. Close the skin with a delayed closure after the infection has cleared. *If there are no signs of infection*, close the fat layer, if necessary, with an interrupted plain catgut suture, and close the skin with interrupted mattress sutures of 3-0 nylon or silk.					
4. Ensure there is no bleeding from the incision and apply a sterile dressing.					
5. Before removing gloves, dispose of waste materials in a leakproof container or plastic bag.					
6. Place all instruments in 0.5% chlorine solution for decontamination.					
7. Remove gloves and discard them in a leakproof container or plastic bag					
8. Wash hands thoroughly with soap and water.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
POSTPROCEDURE CARE					
1. Do not leave the woman unattended until the effects of the anesthesia have worn off.					
2. Explain to the woman what was found at surgery and what procedures have been done.					
3. Ensure the woman has written postoperative instructions, necessary medications before discharge and instructions regarding a followup visit.					
4. If tubal ligation was not performed, discuss reproductive goals, provide counseling on prognosis for fertility and, if appropriate, provide family planning. If the woman wishes to have more children, advise her to have an elective cesarean section for future pregnancies.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					

COURSE EVALUATION:

(To be completed by Participants)

Please indicate your opinion of the course components using the following rating scale:

5–Strongly Agree 4–Agree 3–No Opinion 2–Disagree 1–Strongly Disagree

COURSE COMPONENT	RATING
1. The precourse questionnaire helped me to study more effectively during the course.	
2. The illustrated lectures and discussions helped me to understand the course content.	
3. The case studies were useful for practicing clinical decision-making.	
4. The skills practice sessions made it easier for me to perform the skills for providing basic essential obstetric care.	
5. There was sufficient time scheduled for practicing skills with clients at clinical sites.	
6. There was sufficient time scheduled for practicing skills in the simulated setting when clients were not available.	
7. The clinical simulations helped me to think quickly and intervene rapidly in an emergency situation.	
8. The interactive learning approach used in this course made it easier for me to learn how to provide basic essential obstetric care.	
9. I feel confident about providing advanced essential obstetric care.	
10. I feel confident about using the recommended infection prevention practices.	
11. Twenty four days was an adequate length of time for the course.	

Comments: ____

____

____

____

____

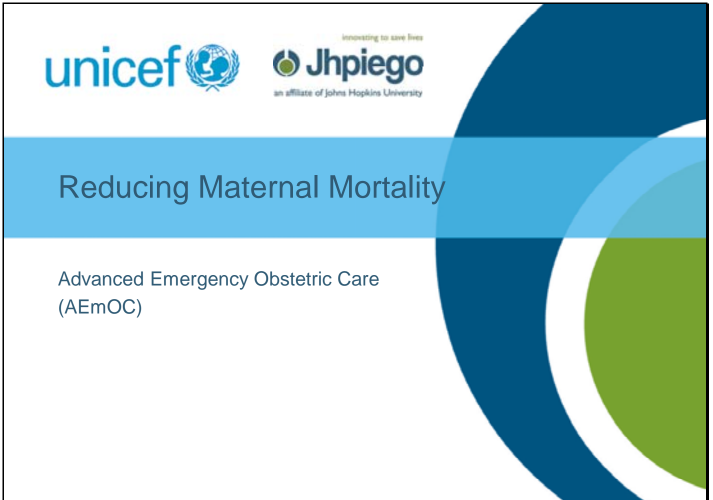
____

HANDOUTS

This Presentation Covers:

- Causes of Maternal Death and Disability
- Evolution of Understanding of the Problem
- Central Role of Emergency Obstetric Care

1



What Is Maternal Death?

The death of a woman while she is pregnant

…or…

within 42 days of the termination of the pregnancy…

…From any cause related to or aggravated by the pregnancy

World Health Organization (WHO)

3

WHO Estimates 515,000 Maternal Deaths Each Year

More

Than One Woman

Dies Every Minute From Pregnancy-related Causes

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4

What Is Maternal Disability?

Short- or Long-term Illness
Caused by
Obstetric Complications

The Most Serious Is Obstetric Fistula
(An Abnormal Passage Between Vagina and Bladder or Rectum Often Caused by Obstructed Labor When it is Not Treated with Cesarean Section)

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5

What Do Women Die Of?

- They Die of Obstetric Complications that Need Not Be Fatal

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6

DIRECT

- **OBSTETRIC COMPLICATIONS**
  - Hemorrhage 38%
  - Unsafe Abortion 14%
  - PIH 9%
  - Obstructed Labor 26%
  - Infection 5%
  - Other 4%

Account for about 3/4 of Maternal Deaths

7

INDIRECT

- **OBSTETRIC COMPLICATIONS**
  - Are Due to Pre-existing Conditions, Including Malaria, Anemia and Hepatitis
  - And Increasingly HIV/AIDS

Account for about 1/4 of Maternal Deaths

8

Most Obstetric Complications Occur Suddenly

Without Warning

If women do not receive
medical treatment on time,
they will probably suffer disability…

Or Die

9

Where Do Women Die Today?

- 99% of Maternal Deaths today occur in Africa, Asia and Latin America

10

What About The Rest Of The World?

Maternal Mortality Used to Be Very High in Europe and the US and so Was Infant Mortality.

In 1915,
Maternal and Infant Mortality Rates
Were as High in the US
as They Are in Africa Today

11

What Happened to Reduce Maternal Mortality in the West?

Effective treatment for obstetric complications was developed and used, e.g., antibiotics for infection, blood transfusions for hemorrhage

12

Most Obstetric Complications

- Can Neither
- Be Predicted
- Nor Prevented…
- But if Women Receive Effective Treatment in Time,
- **…Almost All Can Be Saved**

13

How Much Time Do We Have?

- It is estimated that, if untreated, death occurs on average in:
- **2 hours** from Postpartum Hemorrhage
- **12 hours** from Antepartum Hemorrhage
- **2 days** from Obstructed Labor
- **6 days** from Infection

14

To Avert Death and Disability…

…We Need to Ensure that Women have Access To…

Emergency Obstetric Care (EmOC)

15

How Can We Improve Access to EmOC?

- By making sure health facilities provide the services needed to save women's lives.

Eight key functions "signal" a facility's ability to provide EmOC

16

EmOC Key Functions Cover These Services:

- Antibiotics
- Oxytocic Drugs
- Anticonvulsants
- Manual Removal of Placenta
- Removal of Retained Products
- Assisted Vaginal Delivery
- Surgery (Cesarean Section)
- Blood Transfusion

17

Basic and Comprehensive EmOC Facilities

- **BASIC**
- EmOC Facilities Provide the First Six Services
  - Antibiotics
  - Oxytocic Drugs
  - Anticonvulsants
  - Manual Removal of Placenta
  - Removal of Retained Products
  - Assisted Vaginal Delivery

18

Basic and Comprehensive EmOC Facilities

- **COMPREHENSIVE**
- EmOC Facilities Provide All Eight Services
  - Antibiotics
  - Oxytocic Drugs
  - Anticonvulsants
  - Manual Removal of Placenta
  - Removal of Retained Products
  - Assisted Vaginal Delivery
  - Surgery (Cesarean Section)
  - Blood Transfusion

19

The Good News

- Not all these functions need hospitals and doctors
- Well-trained nurses and midwives can perform most functions at Basic EmOC Facilities

An Important Point
for Resource Poor Areas

20

How Can We Tell We Are Making a Difference?

- If we know we have provided enough EmOC…
- …and if we know that these services are being used by women suffering obstetric complications…

We Can Be Confident
That We Are Saving Women's Lives

21

- …But we do know that of any population of pregnant women at least 15% will experience an obstetric complication
- …This is as true of pregnant women in the US and Europe as of women in Africa, Asia and Latin America

Nobody Knows Why This Happens.
It is a Fact of Life.

23

Can We Really Tell if Services Are Functioning?

…And Are Being Used?

In 1991,
United Nations Children's Fund (UNICEF) and Columbia University developed 6 Process Indicators to do just that.

These were issued by UNICEF/WHO/United Nation's Population Fund (UNFPA) in 1997:
Guidelines for Monitoring Availability and Use of Obstetric Services

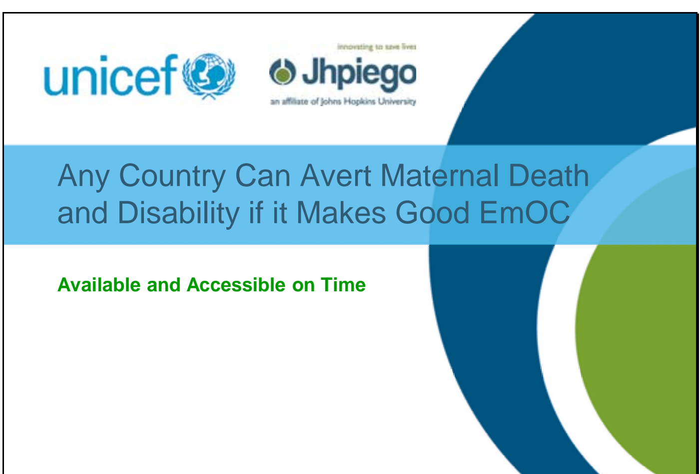
24

QUALITY OF EmOC

Action:
Get More Information

- Find out if your EmOC facilities are really functioning
- Check staff numbers, skills, management capacity, supplies and equipment
- Lobby your health ministry for more support—and get the community to lobby with you

25



Why Use a Human Rights Approach to Reduce Maternal Mortality?

- Human rights are international standards that governments have accepted as binding upon them and the protection and promotion of human rights is their first responsibility
- Basic human rights include rights to liberty and security, to respect for private and family life, to health and to be free from inhuman and degrading treatment
- Human rights can identify the forces that keep unacceptable events from changing, for example, maternal deaths
- Human rights means using a different vision of human well-being to call for the re-arrangement of power necessary for change

2

Examples of Human Rights-Related Problems before and during pregnancy

- Early teenage pregnancy
- Unwanted pregnancy due to lack of access to contraception
- Unsafe abortion
- Complications during pregnancy
  - Delay in seeking care: Lack of information about when and where to go for care, low status of women, poverty
  - Delay in getting to the appropriate facility: Poor transportation and communication infrastructure
  - Delay in receiving care: Attitudes of healthcare providers, expensive drugs, lack of resources

3

How to Apply Human Rights Principles to Maternal Mortality Reduction

- Right to Health: Every person has "the right to the highest attainable standard of physical and mental health."—Article 12, International Covenant on Economic, Social and Cultural Rights
- Realizing the Right: To comply with the obligation to fulfill the right to health, states must take "appropriate measures" toward the "progressive realization" of the right, and must do so to the "maximum of available resources"
- Appropriate measure: Emergency obstetric care

4

Basic Principles and Values of a Human Rights Approach

- Every person, whether woman, man, or child, regardless of ethnic background, color or religion deserves to be treated with dignity
- Dignity in health is not only about preventing death and disease, but also about the way individuals, communities and societies obtain and maintain a standard of health

5

Using Human Rights Principles in Maternal Mortality Programs

- Human rights can affect health programs on multiple levels
  - **Individual**: Change the way patients and providers are treated
  - **Institutional**: Help facilities function effectively through community involvement
  - **Systemic**: Address global influential factors such as gender inequity

6

Human Rights in the Clinical Setting

- Availability of human resources, equipment and drugs
- How services are delivered:
  - Dignity: Privacy and respect
  - Non-discrimination: Eliminating social and cultural barriers that limit access to care

Q: Try to identify some actions which violate these rights?

7

SC1

AMDD (Averting maternal Death and Disability) Approach to Human Rights

- Identify the human rights laws and the principles and values that underlie them
- Ask how these laws/principles/values would change the way that a facility functions
- Identify concrete actions needed to make such functioning possible

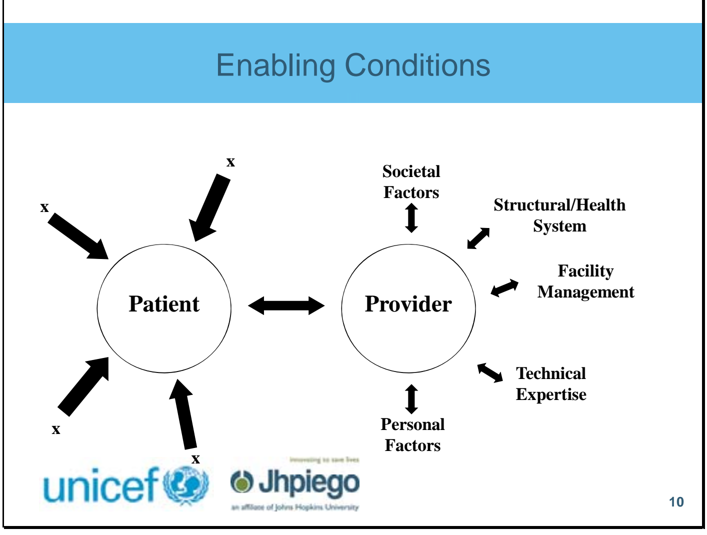
8

"Whole-Site" Approach

- All human interactions in the facility matter
- How do we create the enabling conditions that make respect for human rights possible?
- Focus on BOTH patients AND providers

9

Enabling Conditions



10

Universal Access to Emergency Obstetric Care

- Fulfilling the right to health means working progressively toward universal access to emergency obstetric care

11

Role Play

- Group 1: Skit of an “ideal” interaction between patient and provider(s) showing respect for human rights
- Group 2: Skit of an interaction between patient and provider(s) in which, from a human rights perspective, everything goes wrong

12

What Standard Precautions Are

- Definition
  - Guidelines designed to create a physical, mechanical, or chemical barrier between microorganisms and a person to prevent the spread of infection (i.e., the barrier serves to break the disease transmission cycle)
- Examples of Barriers
  - **Physical**: High-level disinfection (HLD) by boiling or steaming and sterilization by autoclaving or dry heat ovens
  - **Mechanical**: Personal protective equipment (gloves, face masks, goggles, gowns, plastic or rubber aprons, and drapes)
  - **Chemical**: Antiseptics (iodophors and alcohol-based antiseptic agents) and high-level disinfectants (chlorine, glutaraldehydes, and OPA)?

2

What are standard precautions designed to do?

- Purpose
- Primary strategy to prevent nosocomial infections in all hospitalized patients and clients attending healthcare facilities
- Reduce risk of transmitting microorganisms from known or unknown sources of infection
- Provide rationale for appropriate use of limited infection prevention resources in caring for all clients and patients

One-Handed Recap Method

3

Standard Precautions

- Apply to care of all clients and patients attending healthcare facilities
  - **Reason**: Most people with HIV or other life-threatening bloodborne diseases do not have symptoms.
- Apply to all blood, body fluids, secretions and excretions (except sweat), nonintact skin and mucous membranes
  - **Reason**: Increased risk of exposure by touching, accidental injury (needle-stick), or contact (splashing or spraying of potentially contaminated blood or body fluids)

4

Standard Precautions

- Key components
  - **Consider every person (patient or staff)** as potentially infectious and susceptible to infection.
  - **Wash hands (or use an antiseptic handrub)** before and after touching blood or body fluids, after removing gloves, and between patient contacts.
  - **Wear gloves (both hands)** before touching anything wet—broken skin, mucous membranes, blood or body fluids, soiled instruments or contaminated waste materials—and before performing invasive procedures.
  - **Use physical barriers (protective goggles, face masks, aprons, shoe covers, head covering)** if splashes and spills of blood or body fluids (secretions and excretions) are likely.

5

Standard Precautions

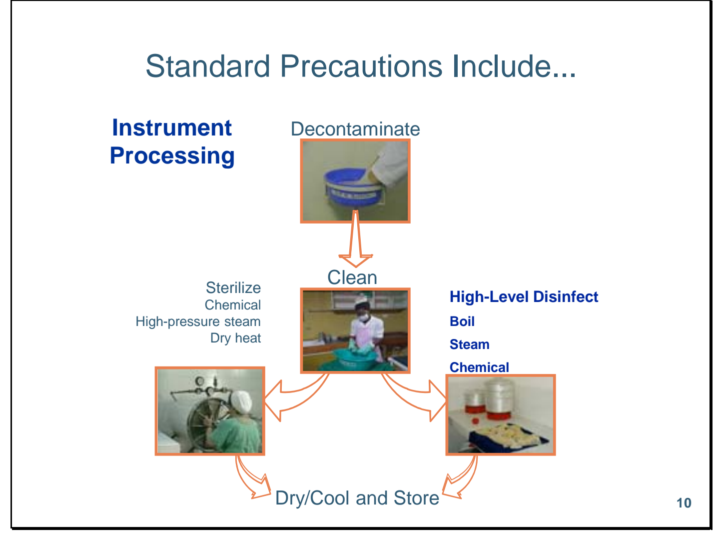
- Key components (continued)
  - **Use antiseptic agents** for cleansing the skin or mucous membrane prior to surgery, cleaning wounds, or doing handrubs or surgical handscrubs with an alcohol-based antiseptic product.
  - **Use safe work practices** such as not recapping or bending needles, safely passing sharp instruments, and suturing, when appropriate, with blunt needles.
  - **Safely dispose of infectious waste materials** to protect those who handle them and prevent injury or spread of infection to the community.
  - **Process instruments, gloves, and other items** after use by first decontaminating and thoroughly cleaning and then either sterilizing or high-level disinfecting them using recommended procedures.

6

Standard Precautions Include...
Hand Hygiene
Wearing Gloves
7

Standard Precautions Include...
Use of PPE
8

Standard Precautions Include...
Handling
Linen
unicef
Jhpiego
9


Standard Precautions Include...
Instrument Processing
Decontaminate
Clean
Sterilize
Chemical
High-pressure steam
Dry heat
High-Level Disinfect
Boil
Steam
Chemical
Dry/Cool and Store
10

Standard Precautions Include...
Environmental Cleaning
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11

Standard Precautions Include...
Handling Sharps
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12

Standard Precautions Include...

Handling and Disposing of Sharps

13

Standard Precautions Include...

Immunization for Adults

- Hepatitis A
- Hepatitis B
- Influenza
- Pneumococcus
- Tetanus, diphtheria
- Chicken pox
- Measles, mumps, Rubella (German measles)

14

Standard Precautions Include...

Waste Management

15

Making the Workplace Safer

- Continue identifying risk.
- Continue to use Standard Precautions.
- Teach patients that it is okay to remind healthcare workers to wash their hands and use gloves.
- Actively be a role model and support IP practices.

16

Supporting a Safer Workplace

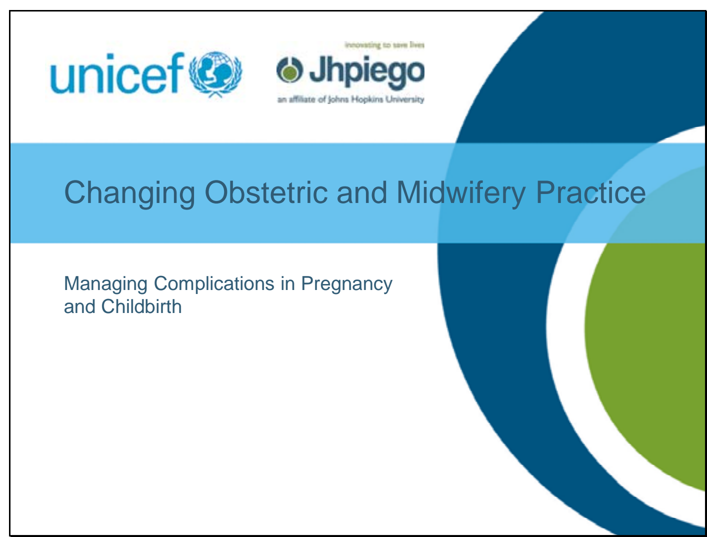
- Support from hospital administrator
- Positive feedback from supervisor

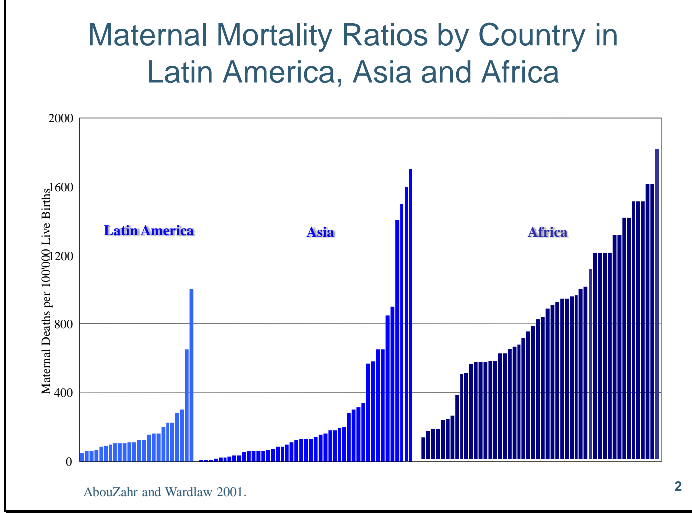
17

Summary

- Minimize and prevent exposure to infection by:
  - Using standard precautions with every patient
  - Disposing of clinic waste properly
- Work together to make the workplace safer.
- Teach patients and their families how to reduce risk of exposure in the home.

18





Maternal Mortality: Scope of Problem

- 600,000 maternal deaths (1 per min) every year
  - 180–200 million pregnancies per year
  - 87 million unwanted pregnancies1
  - 46 million induced abortions1
  - 18.4 million unsafe abortions
  - 1 maternal death=30 maternal morbidities
- There is a growing unmet need for contraception

[1] WHO 2005.

3

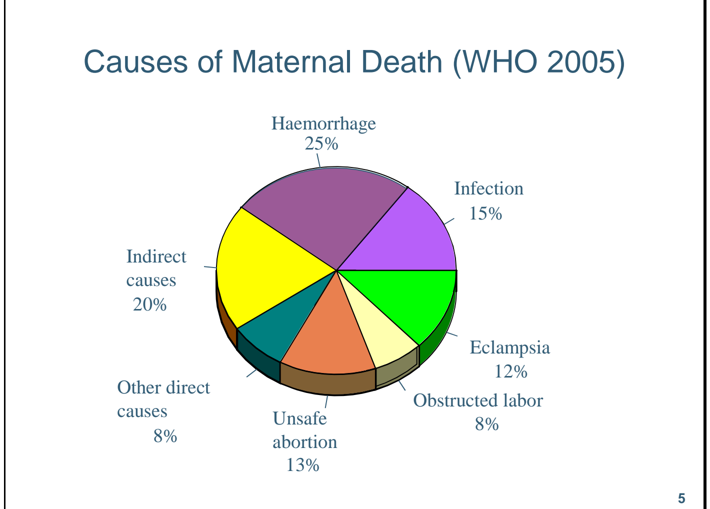
Newborn Mortality: Scope of Problem

- 4 million neonatal deaths (first 28 days of life)
- 3.3 million stillbirths

- Afghanistan noted to have highest stillbirth rate and second highest early neonatal mortality rate in the world (WHO 2005)

4

Causes of Maternal Death (WHO 2005)



5

Interventions to Reduce Maternal Mortality

- Historical review
- Traditional birth attendants
- Antenatal care
- Risk screening
- Current approach
- Skilled provider at childbirth

6

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) antenatal care clinics opened in UK
- No reduction in maternal mortality
- But, widely used as a maternal mortality reduction strategy in 1980s and early 1990s
- Is antenatal care important? YES!!
- Early detection of problems and birth preparation

7

Interventions: Risk Screening

- Disadvantages
  - Very poorly predictive
  - **Costly**—may remove woman to maternity waiting homes
  - Large number of women classified as "high risk" never develop any complications
  - Most women who develop complications do not have risk factors and were classified as "low risk"
  - **Conclusion**: Cannot identify those at risk of maternal mortality—every pregnancy is at risk. Focus now on complication readiness.

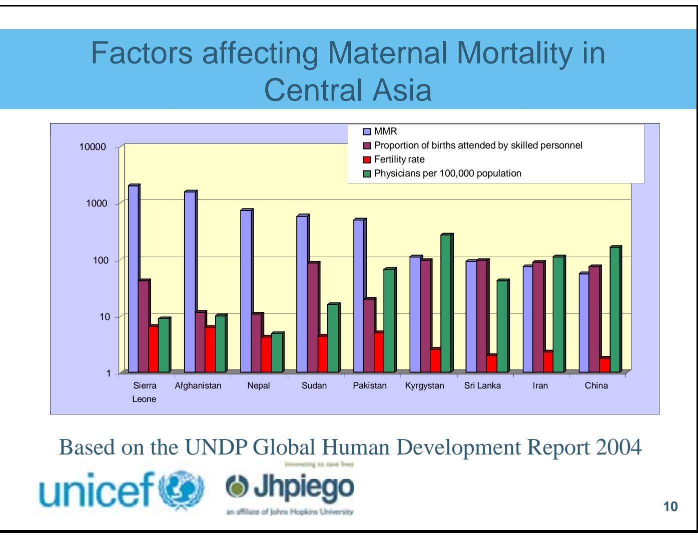
8

Interventions: CHWs

- **Advantages**:
  - Identify pregnant women
  - (Through community Mapping)
  - Counseling
  - Support for birth planning
- **Disadvantages**

9

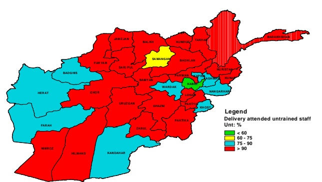
Factors affecting Maternal Mortality in Central Asia



Based on the UNDP Global Human Development Report 2004

10

Afghanistan



- Most deliveries are not attended by trained staff
- Most deliveries take place at home
- MMR second highest in the world at 1600 per 100 000 live births
- The most common cause of maternal death is PPH followed by labour

11

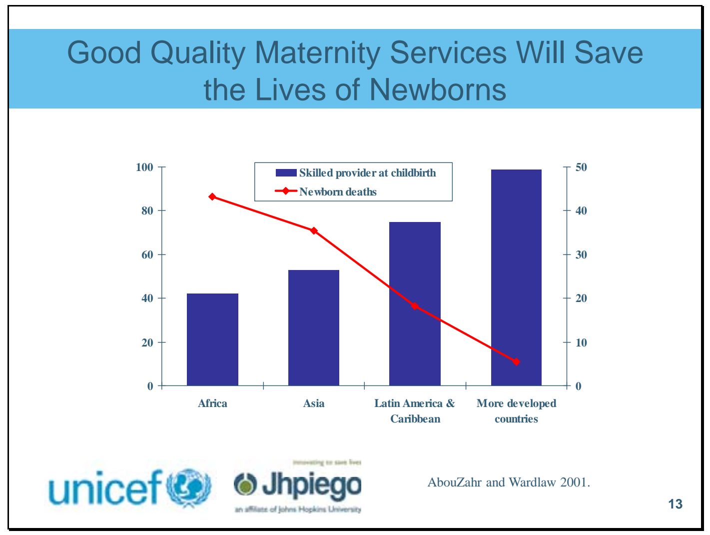
Skilled Provider at Childbirth

- **A skilled attendant is:**
  - an accredited health professional – midwife, doctor or nurse – who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postpartum period and in the identification, management and referral of complications in women and newborns

(WHO, ICM & FIGO 2004)

WHO 1999

12



Millennium Development Goals

- Goal # 5: Improve Maternal health
- Target: Reduce by three quarters, by 2015, the maternal mortality ratio NEED
  - Increase the proportion of births that are attended by skilled health personnel
  - Ensure that women everywhere have timely and affordable access to quality care
  - Increase awareness of and access to birth control, and improve the quality and availability of antenatal care.
  - Improve the availability of health services and reduce the social barriers to accessing health care by educating and empowering women to make decisions about when and how to seek care.

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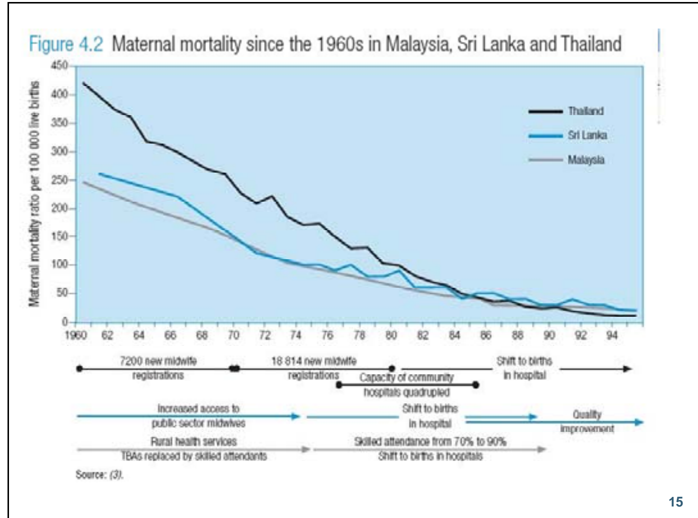

Solutions for Maternal and Newborn Survival

Identifying the problem: Maternal and newborn death

- Delay in decision to seek care
  - Lack of understanding of complications
  - Acceptance of maternal death
  - Low status of women
  - Sociocultural barriers to seeking care
- Delay in reaching care
  - Mountains, islands, rivers— **no money, no transport**
- Delay in receiving care
  - Supplies, personnel, finances
  - Poorly trained personnel with bad attitude

Embracing the solution: Maternal and newborn survival

- Community involvement and social mobilization
  - Mother-friendly services
  - Community education
- Taking care to the community
  - Skilled provider at every birth
  - Innovative community programs
- Improved standards of care
  - Developing clinical standards
  - Preservice training
  - Performance improvement strategies
  - Monitoring and evaluation

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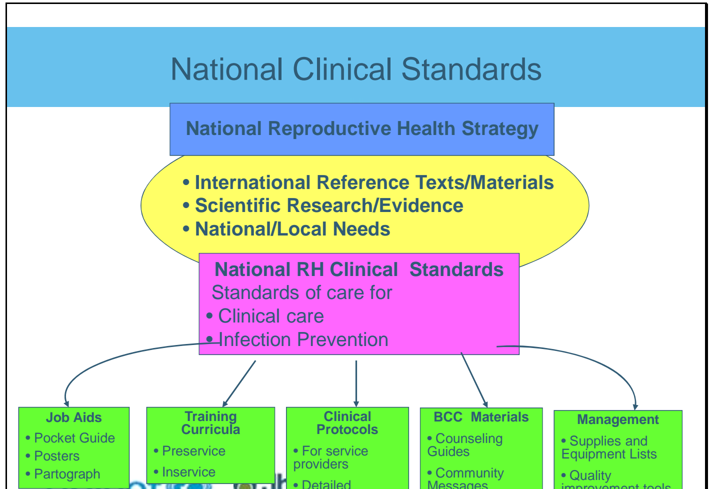
16

National Clinical Standards



Clinical Care

Improve Clinical Services

Service Provider Training

Performance & Quality Improvement

- **Individuals**
  - Refresher training of doctors and nurses
- **Services**
  - Essential Obstetric Care
  - Infection Prevention
- **Standards-based Management**
  - Performance and Quality Improvement (PQI)

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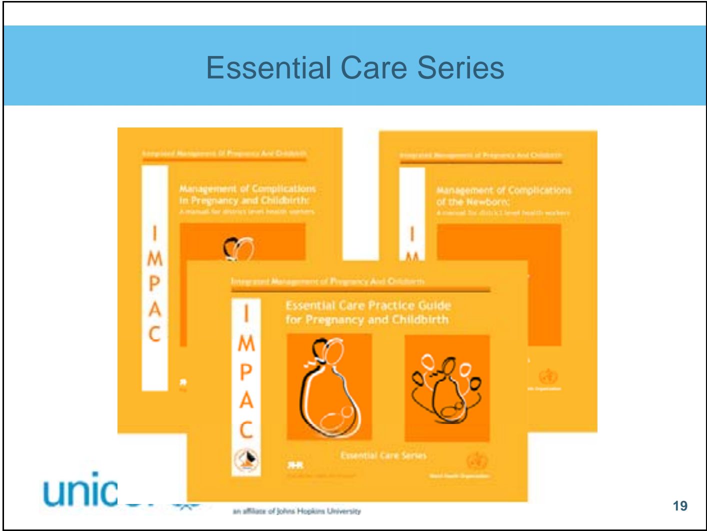
18

Essential Care Series



19

Promoting a Culture of Quality Care

- Good quality care saves time and money
  - Partograph
  - Manual vacuum aspiration/post abortion care
  - Active management of third stage of labor
  - **Care of the newborn**
- Team responsibility:
  - Providers
  - Supervisors
  - Community

20

Summary

- Skilled attendants at every delivery
- Promote ANC
- Promote risk screening for pregnant women
- Improving clinical services through training to clinical staff and PQI.
- Promote a culture of quality care understanding benefits of quality care and responsibilities.

21

References

- AbouZahr C and T Wardlaw. 2001. Maternal Mortality in 1995: Estimates Developed by WHO, UNICEF, UNFPA. World Health Organization (WHO): Geneva.
- Maine D. 1999. What's So Special about Maternal Mortality?, in Safe Motherhood Initiatives: Critical Issues. Berer M et al (eds). Blackwell Science Limited: London.
- WHO 2005 Make every mother and child count.

22

Session Objectives

- To discuss best practices for the initial assessment of obstetrical patients
- To review implementation of a rapid assessment scheme

2

Definition

- A quick check of a woman's condition when she presents with a problem to rapidly determine her degree of illness

3

Assess Condition

- Airway
- Breathing
- Circulation (signs of shock)
- Vaginal bleeding (early or late pregnancy or after childbirth)
- Unconscious or convulsing
- Dangerous fever
- Abdominal pain

4

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

5

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

6

Assess Vaginal Bleeding

- Ask if:
  - Pregnant and length of gestation
  - Recently given birth
  - Placenta delivered
- Examine:
  - Vulva: Amount of bleeding, placenta retained, obvious tears
  - Uterine fundus: Atony
  - Bladder: Full
- **DO NOT DO VAGINAL EXAMINATION AT THIS STAGE**

7

Assess Vaginal Bleeding (continued)

Consider:

Early Pregnancy	Late Pregnancy	Postpartum
Abortion	Abruptio placenta	Atonic uterus
Ectopic pregnancy	Ruptured uterus	Tears of cervix and vagina
Molar pregnancy	Placenta previa	Retained placenta
		Inverted uterus

8

Assess Unconsciousness or Convulsions

- Danger signs
  - Ask if pregnant and length of gestation
  - Examine:
    - Blood pressure: Diastolic 90 mm Hg or more
    - Temperature: 38ºC or more
- Consider:
  - Eclampsia
  - Malaria
  - Epilepsy
  - Tetanus

9

Assess Dangerous Fever

- Danger signs:
  - Ask if:
    - Weak, lethargic
    - Frequent, painful urination
  - Examine:
    - Temperature: 38ºC or more
    - Unconscious
    - Neck: Stiffness
    - Lungs: Shallow breathing, consolidation
    - Abdomen: Severe tenderness
    - Vulva: Purulent discharge
    - Breasts: Tenderness

10

Assess Dangerous Fever (continued)

- Consider:
  - Urinary tract infection
  - Malaria
  - Metritis
  - Pelvic abscess
  - Peritonitis
  - Breast infection
  - Complications of abortion
  - Pneumonia

11

Assess Abdominal Pain

- Danger signs:
  - Ask if pregnant and length of gestation
  - Examine:
    - Temperature: 38ºC or more
    - Pulse: 110 beats/min. or more
    - Blood pressure: Systolic less than 90 mm Hg
    - Uterus: State of pregnancy

12

Assess Abdominal Pain (continued)

- Consider:
  - Obstetrical Causes
  - Ectopic pregnancy
  - Possible term or preterm labor
  - Amnionitis
  - Abruptio placenta
  - Ruptured uterus
- Nonobstetrical Causes
- Ovarian cyst
- Appendicitis

13

Signs and Symptoms that Require Prompt Treatment

- Blood-stained mucus discharge with palpable contractions
- Ruptured membranes
- Pallor
- Weakness
- Fainting
- Severe headaches
- Blurred vision
- Vomiting
- Fever
- Respiratory distress

14

Implementing a Rapid Initial Assessment Scheme

- Train ALL staff to react in agreed upon fashion when a woman arrives at a facility with an 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 is properly trained to use equipment

15

Implementing a Rapid Initial Assessment Scheme (continued)

- 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

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16

Session Objectives

- Identify presenting symptoms and signs of shock
- Describe common conditions during pregnancy and postpartum which can lead to shock
- Perform immediate and specific management of shock

2

Definition of Shock

- Failure of the circulatory system to maintain adequate perfusion of the vital organs.
- Life-threatening condition that requires immediate and intensive evaluation and treatment

3

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 placenta, 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)

4

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)

5

Immediate Management of Shock

- Shout for help—mobilize personnel
- Monitor vital signs
- Position woman onto her side
- Keep woman warm
- Elevate legs
- Collect blood for testing

6

Management Principles

- Secure and maintain an Airway as needed
- Ensure adequate Breathing
- Maintain adequate Circulatory volume

7

Specific Management of Shock

- Give oxygen at 6-8 L/min. by mask, nasal prong, ET tube
- 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
- If peripheral vein cannot be cannulated, perform venous cutdown
- Monitor vital signs
- Catheterize bladder
- Blood work: Hemoglobin, cross-match
- Assess clotting status with bedside clotting test
- Manage specific cause

8

Manage Specific Cause: Heavy Bleeding

- Stop bleeding (use oxytocics, uterine massage, bimanual compression, aortic compression, surgery)
- Transfuse as soon as possible
- Determine and 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 placenta or ruptured uterus
  - After childbirth: Ruptured uterus, uterine atony, genital tract tears, retained placenta or placental fragments
- Reassess condition

9

Prevention of Hemorrhagic Shock

- Minimize wastage of blood:
  - Use best anesthesia and surgical technique to minimize blood loss at surgery
  - Autotransfuse during procedures where appropriate
  - Active management of third stage of labor
  - Management of postpartum hemorrhage

10

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

11

Manage Specific Cause: Trauma

- Intervention will vary with gestational age, type of injury and severity of injury
- Indications for tetanus prophylaxis do not change during pregnancy
- Types of injury:
  - blunt abdominal injury
  - pelvic fractures
  - penetrating trauma

12

Blunt Abdominal Trauma

- Extent of intervention will vary with gestational age
- Fetal loss often results from abruptio placentae or other placental injury, direct fetal injury, uterine rupture, maternal shock or death

13

Pelvic Fractures

- May result in significant retroperitoneal bleeding
- Increased risk of hypovolemic shock
- May be associated with injuries to the bladder or urethra making placement of a urinary catheter difficult

14

Penetrating trauma

- Gunshot, stab or shrapnel wounds
- Fetal loss usually through direct injury or by injury to the cord or placenta
- Maternal outcome often more favorable because of shielding by the uterus and its contents

15

Manage Hypovolemic Shock

- Oxygen by mask
- Establish IV line: 16–18 gauge cannula
- Place patient in supine position with head down initially or legs raised
- Replace volume as required by proper fluids
  - Crystalloids
  - Colloids
  - Whole blood
  - Blood component

16

Manage Hypovolemic Shock (cont'd)

- Monitor:
  - Cardiovascular system: Pulse, blood pressure, central venous pressure
  - Central nervous system: Responding to command
  - Urine output
  - Respiration rate
  - General condition

17

Manage Hypovolemic Shock (cont'd)

- Provide support:
  - Cardiovascular system if needed
  - Respiratory system if needed
  - Renal system by dopamine

18

Shock: Reassessment

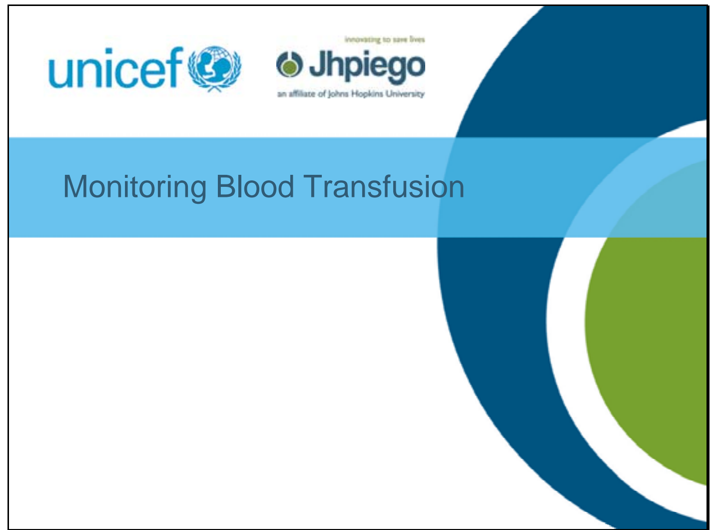
- Reassess response within 30 min. to determine improvement
  - Stabilizing pulse (rate of 90 beats/min. or less)
  - Increasing blood pressure (systolic 100 mm Hg or greater)
  - Improved mental status (less confusion or anxiety)
  - Increasing urine output (30 mL/hour or more)
- If improving:
  - Adjust IV infusion rate to 1 L in 6 hours
  - Continue management for cause of shock
- If not improving or stabilizing, further management required

19

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

20



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

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

Managing Prophylactic Shock from Mismatched Blood Transfusion

- Anaphylactic shock, give:
  - Adrenaline 1:1000 solution 0.1 mL in 10 mL normal saline IV slowly
  - Promethazine 10 mg IV
  - Hydrocortisone 1 g IV every 2 hours as needed
  - Aminophylline 250 mg in 10 mL normal saline IV slowly for bronchospasm
- Monitor renal, pulmonary and cardiac function
- Transfer to referral center when stable
- Document and report reaction

Alternatives to Transfusion

- Solutions with similar concentrations to plasma:
  - Crystalloid
  - Colloid

DEXTROSE SOLUTIONS ARE POOR REPLACEMENT FLUIDS. DO NOT USE UNLESS THERE IS NO OTHER ALTERNATIVE. DO NOT USE PLASMA OR PLAIN WATER.

Blood Transfusion Policy (BTP) Afghanistan

- BTP prioritizes four tasks:
  - Promoting the development of transfusion to meet the needs of public health priorities
  - Boosting transfusion safety
  - Staff training
  - Setting up a national network of transfusion services

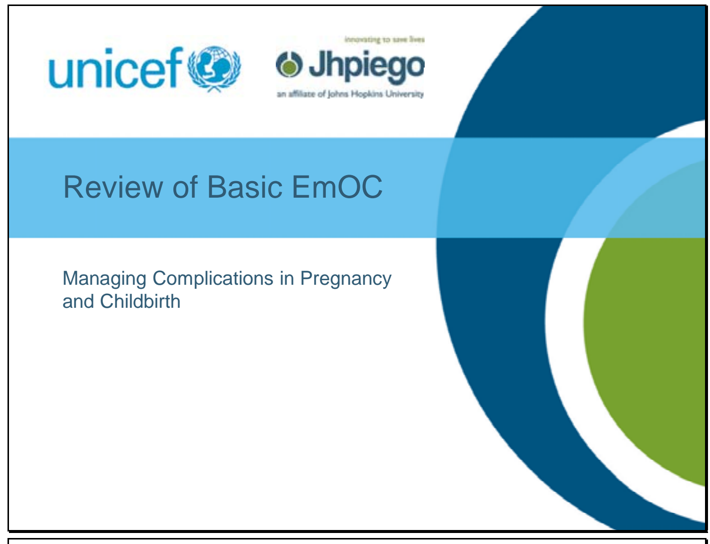
Boosting Transfusion Safety involves :

- Quality of the selection of voluntary blood donors
- Rules of hygiene
- Performance of tests
- Quality of the supply

- MoPH will finalize Good Transfusion Practice Standards in near future

Transfusion Policy Is Implemented by:

- MoPH
- A National Scientific Council for Blood Transfusion
- Five regional transfusion centers (Kabul, Jalalabad, Mazar, Hirat and Kandahar)



Session Objectives

- To review best practices in the following areas:
  - Postpartum Hemorrhage
  - Pre-eclampsia/Eclampsia
  - Management of Shoulder Dystocia

2

Postpartum Hemorrhage: Definition

- Vaginal bleeding of more than 500 mL after childbirth:
  - Bleeding underestimated because visual quantification is difficult
  - Blood is mixed with other fluids (amniotic fluid, urine) and therefore underestimated
  - Bleeding may occur slowly over several hours and condition may not be recognized until woman suddenly enters shock

3

PPH Prevention

- Active Management of Third Stage Labor
  - Immediate Oxytocin
  - Controlled Cord Traction
  - Uterine Massage

4

PPH: Initial Assessment and Management

- Shout for help—mobilize personnel
- Evaluate woman's condition including vital signs
- If shock suspected, immediately begin treatment
- Massage uterus to expel clots and feel to see that it is contracted—recheck intermittently
- Give oxytocin 10 units IM

5

Initial Assessment and Management (continued)

- Infuse IV fluids
- Catheterize bladder, if needed
- Check to see that placenta has been expelled—examine for completeness
- Examine the cervix, vagina and perineum for tears
- After bleeding is controlled, check for anemia

6

Differential Diagnosis of Postpartum Hemorrhage

- Atonic uterus
- Retained placenta
- Tears of cervix, vagina or perineum
- Retained placental fragments
- Ruptured uterus
- Inverted uterus

7

Management of Atonic Uterus

- Continue IV fluids
- Continue to massage uterus
- Continue oxytocic drugs
- Perform bimanual compression or perform aortic compression
- Consider uterine and utero-ovarian artery ligation or hysterectomy

- All the while:
- Transfuse blood as needed
- Consider other diagnoses
- Do not pack uterus

8

Oxytocic Drugs

	Oxytocin	Ergometrine/ Methylergometrine	15-methyl prostaglandin $F_{2\alpha}$
Dose and Route	IV: Infuse 20 units in 1 L at 60 drop/min. IM: 10 units	IM or IV: 0.2 mg	IM: 0.25 mg
Continuing Dose	IV: Infuse 20 units in 1 L at 40 drop/min.	Repeat 0.2 mg IM after 15 min. If required, give 0.2 mg IM or IV every 4 hours	0.25 mg every 15 min.
Maximum Dose	Not more than 3 L of IV fluids	5 doses	8 doses
Precautions/ Contraindications	Do not give as IV bolus	Pre-eclampsia, hypertension, heart disease	Asthma

9

Delayed Postpartum Hemorrhage

- If severe anemia, arrange for transfusion and provide oral iron and folic acid
- If signs of infection are present, give antibiotics as for metritis
- Give oxytocics
- Remove large clots and placental fragments if cervix is dilated
- Evacuate uterus if cervix is not dilated
- Consider uterine and utero-ovarian artery ligation if bleeding continues

10

Hypertension in Pregnancy

Classifications:

- Chronic hypertension
  - Pregnancy-induced hypertension:
    - Pregnancy-induced hypertension without proteinuria
    - Mild pre-eclampsia
    - Severe pre-eclampsia
    - Eclampsia

11

Pre-Eclampsia

- Woman over 20 weeks gestation with:
  - Diastolic blood pressure >90 mm Hg AND
  - Proteinuria
- Predisposes woman to develop eclampsia

12

Mild Pre-Eclampsia

- Two readings of diastolic blood pressure 90-110 mg Hg 4 hours apart after 20 weeks gestation
- Proteinuria up to 2+
- No other signs/symptoms of severe pre-eclampsia

13

Severe Pre-Eclampsia

- Diastolic blood pressure >110 mm Hg
- Proteinuria>3+
- Sometimes present:
- Epigastric tenderness
- Headache
- Visual changes
- Hyperreflexia
- Pulmonary edema
- Oliguria

14

Eclampsia: Typical Signs

- Convulsions occurring after 20 weeks gestation in a woman without a previously known seizure disorder (Can also occur postpartum)
- Proteinuria 2+ or more
- Blood Pressure 90 mm Hg or more:
  - A small proportion of women with eclampsia have normal blood pressure

15

Initial assessment of a woman who is unconscious or convulsing:

- Shout for help & mobilize personnel
- Rapidly evaluate breathing and state of consciousness
- Check airway, blood pressure and pulse
- Quickly obtain medical history from her or from her family
- DO NOT LEAVE WOMAN UNATTENDED

16

General Management

- If woman is not breathing or her breathing is shallow:
  - check airway and intubate if required
  - assist ventilation using Ambu bag and mask or give oxygen at 4-6 L per minute via endotracheal tube
- If woman is breathing:
  - Give oxygen at 4-6 L per minute by mask or nasal cannulae
- If she is unconscious:
  - Check airway and temperature
  - Position her on her left side
  - Check for neck rigidity

17

General Management during a convulsion

- Position her on her left side to reduce risk of aspiration
- Protect her from falling but do not restrain her
- Provide constant supervision
- Give anticonvulsive drugs
- Gather airway equipment and give oxygen at 4-6 L per minute
- After the convulsion, suction the mouth and throat as necessary

18

Magnesium sulfate

- Drug of choice for treatment of convulsions in severe pre-eclampsia and eclampsia
- If magnesium sulfate not available, diazepam may be used (increased risk neonatal respiratory depression)
- Withhold or delay magnesium sulfate if:
  - respiratory rate <16 per minute
  - patellar reflexes absent
  - oliguria

19

Keep antidote ready

- In case of respiratory arrest on magnesium sulfate:
  - Assist ventilation
  - Give calcium gluconate 1 g (10 mL of 10% solution) IV slowly

20

Post-Convulsion Management

- Continue magnesium sulfate for 24 hours after delivery or last convulsion
- Control blood pressure
- Prepare for delivery

21

Antihypertensive drugs

- If diastolic pressure is 110 mm Hg or more:
  - Hydralazine 5 mgs IV every 5 mins until BP is lowered
  - Labetolol 10 mgs IV: double every 10 minutes to max of 80 mgs
  - Nifedipine 5 mgs sublingual
  - Goal: diastolic BP 90-100 mmg Hg to prevent stroke

22

Shoulder Dystocia

- Fetal head delivered but shoulders are stuck
- Cannot be predicted
- Be prepared for shoulder dystocia at all deliveries
- Teamwork!

23

Shoulder Dystocia: How to Diagnose

- Fetal head is delivered but remains tightly applied to the vulva
- The chin retracts and depresses the perineum
- Traction on the head fails to deliver the shoulder which is caught behind the symphsis pubis

24

Shoulder Dystocia: Management

- Call for help
- Make an adequate episiotomy to reduce soft tissue obstruction and to allow space for manipulation
- With the woman on her back, flex both thighs, bringing knees as far up as possible towards the chest

25

Shoulder Dystocia: Maneuvers

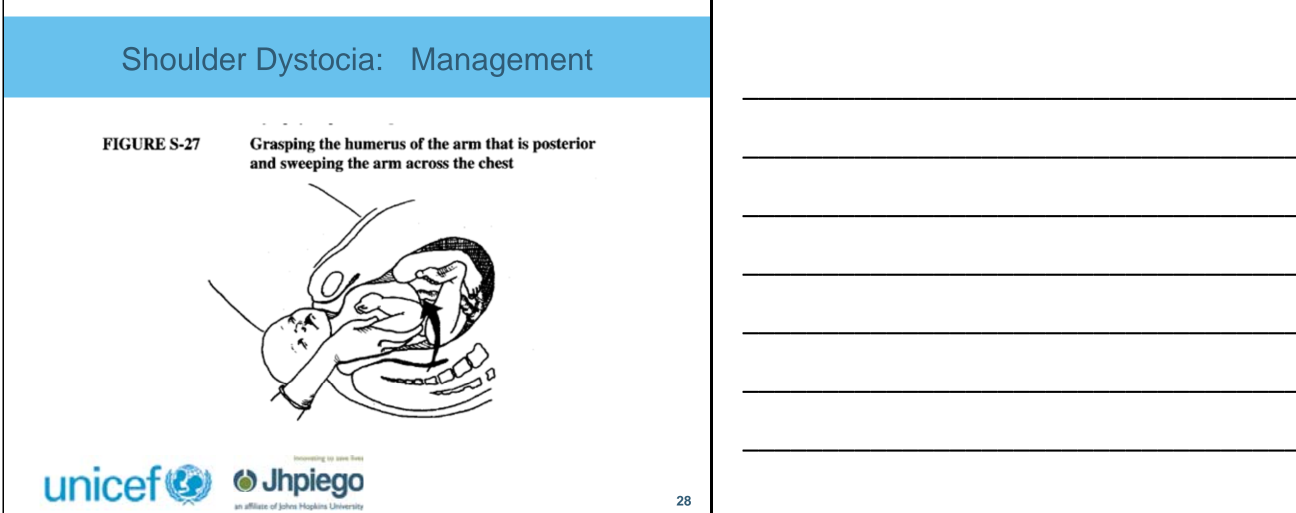
- Apply firm contiinuous traction downwards on the fetal head to move the anterior shoulder under the symphysis pubis
- Avoid excessive traction on the head as this may result in brachial plexus injury
- Have assistant apply suprapubic pressure downward to assist delivery of the shoulder
- Do NOT apply fundal pressure

26

Shoulder Dystocia: Other options

- Rotate the anterior shoulder to decrease the shoulder diameter
- Grasp the humerus of the posterior arm and sweep across the chest
- Fracture the clavicle
- Apply traction with a hook in the axilla to extract the arm that is posterior

27


Shoulder Dystocia: Management
FIGURE S-27
Grasping the humerus of the arm that is posterior and sweeping the arm across the chest
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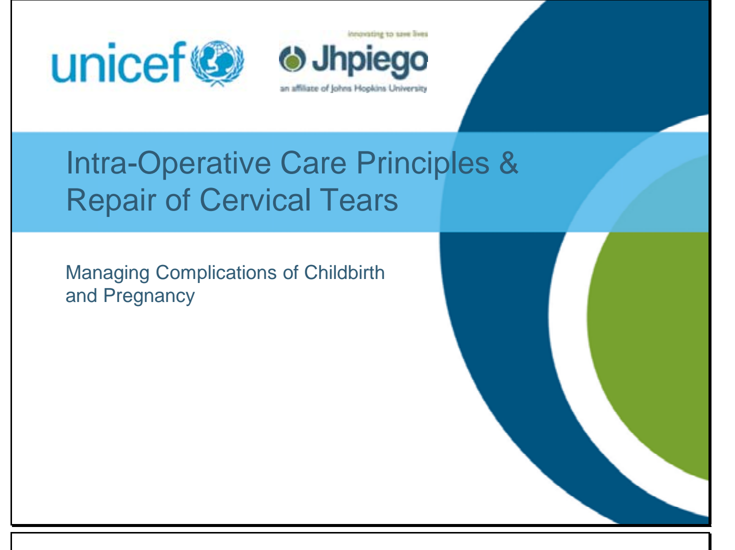
28



Session Objectives

- To review surgical approach to repair of cervical tears

2

Differential Diagnosis of Postpartum Hemorrhage

- Atonic uterus
- Retained placenta
- Tears of cervix, vagina or perineum
- Retained placental fragments
- Ruptured uterus
- Inverted uterus

3

Management of Genital Tract Tears

- Inspect cervix, vagina and perineum
- Repair tears that are:
  - Bleeding
  - More than first degree
- Place catheter if necessary
- All the while:
  - Transfuse blood as needed
  - Consider concurrent diagnoses if bleeding still heavy

4

Repair of cervical tears: Preparation

- Use proper equipment: long needle driver, vaginal speculum(s)
- Use proper PPE
- Adequate lighting essential: headlamp, flashlight held by assistant, gooseneck lamp
- Apply antiseptic solution
- Provide emotional support
- Anaesthesia is not required unless tears are high and extensive

5

Anesthetic Options

- Pethidine and diazepam: given slowly IV using separate syringes
- Ketamine IM, IV or by infusion

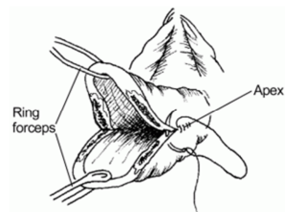
6

Repair of cervical tears

- Ask an assistant to massage the uterus and provide fundal pressure.
- Gently grasp the cervix with ring or sponge forceps.
- Apply the forceps on both sides of the tear
- Gently pull in various directions to see the entire cervix

7

Repair Of Cervical Tears: Closing The Tear



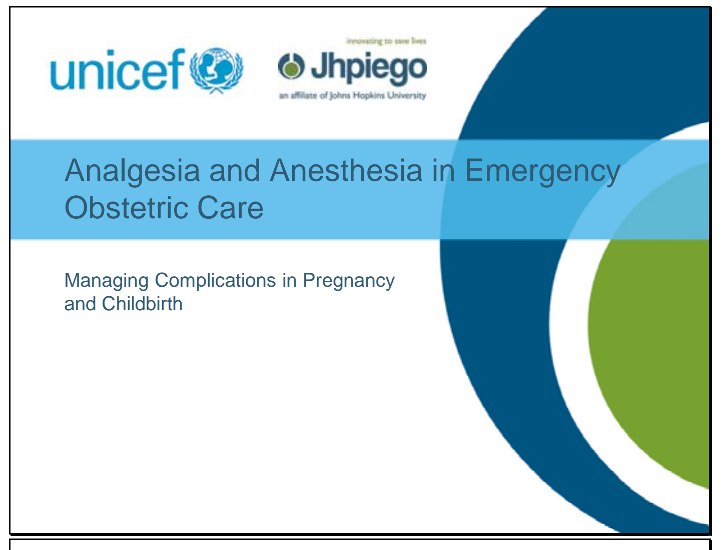
- Close the cervical tears with continuous 0 chromic catgut or polyglycolic suture
- Start suture at the apex (upper edge of tear), which is often the source of bleeding

8

Repair of Cervical Tears: Special Conditions

- If the rim of the cervix is tattered:
  - Under-run it with continuous 0 chromic catgut (or polyglycolic) suture.
- If the apex of the tear is difficult to reach and ligate:
  - Grasp it with artery or ring forceps.
  - Leave the forceps in place for 4 hours
  - Open the forceps partially but do not remove for another 4 hours
  - Then remove the forceps completely.
- **A laparotomy may be required to repair a cervical tear that has extended deep beyond the vaginal vault.**

9



Session Objectives

- To describe the principles of pain relief in emergency obstetric care
- To describe different methods of pain relief in emergency obstetric care

2

Basic Requirements of Pain Relief

- Supportive attention from staff before, during and after procedure to reduce anxiety
- Method of pain relief that is:
  - Appropriate for procedure
  - Adequate for pain relief
  - Safe for woman (and baby)
- Skill and expertise of provider in using instruments gently and minimizing tissue damage

3

Pain Relief in Labor

- Non-pharmacological methods of pain relief include:
  - Support from birth companion
  - Encouragement, compassion and support from provider
  - Ambulation and change of position
  - Back massage
  - Breathing techniques
  - Warm showers and baths

4

Pain Relief in Labor (continued)

- If non-pharmacological methods of pain relief are not adequate:
- Give:
  - Pethidine 1 mg/kg body weight (maximum dose 100 mg) IM or IV slowly OR
  - Morphine 0.1 mg/kg body weight IM
- Give drug every 4 hours as needed
- Give promethazine 25 mg IM or IV if vomiting occurs

- **WARNING: Pethidine or morphine can cause neonatal respiratory depression. Be prepared to initiate resuscitation and give naloxone immediately after delivery.**

5

Neonatal Depression

- Begin neonatal resuscitation immediately
- After vital signs have been established, give naloxone 0.1 mg/kg bodyweight IV to the newborn
- If newborn has adequate peripheral circulation after successful resuscitation, naloxone can be given IM.
- Repeated doses of naloxone may be required to prevent recurrent respiratory depression
- If there are no signs of respiratory depression but pethidine or morphine was given within 4 hours of delivery, monitor baby carefully

6

Local Anesthesia

- Infiltrates surrounding tissue and blocks sensory nerves
- Commonly used lignocaine preparation is 0.5% with or without adrenaline
- Addition of adrenaline reduces absorption and prolongs action
- Premedication with pethidine and diazepam may be required for procedures that last longer than 30 minutes

7

Premedication

- Pethidine 1 mg/kg body weight (but not more than 100 mgs) IM or IV slowly OR
- Morphine 0.1 mgs/kg body weight IM
- Diazepam in increments of 1 mg IV and wait at least 2 minutes between doses
- Safe and sufficient level of sedation: upper eye lid droops and just covers the edge of the pupil
- Monitor respiratory rate carefully
- Do not administer diazepam with pethidine in the same syringe

8

Local Anesthesia (continued)

- Because the woman will be awake during the procedure:
  - Counsel her before the procedure to increase cooperation and reduce fears
  - Tell her what you are doing at each step of the procedure
  - Wait until the anesthetic has taken full effect before performing procedure

9

Local Anesthesia (continued)

- Prevent complications of local anesthesia by:
  - Using dilute solutions (0.5% preferred)
  - Adding adrenaline when more than 40 mL will be used (e.g., cesarean section)
  - Using lowest effective dose
  - Not exceeding maximum dose
    - Without adrenaline 4 mg/kg body weight
    - With adrenaline 7 mg/kg body weight
- Injecting slowly
- Avoiding IV injection

10

Nerve Blocks

- Target specific nerves to anesthetize a region of the body
  - Paracervical block can be used for dilatation and curettage and manual vacuum aspiration
  - Pudendal block can be used for instrumental delivery, breech delivery, episiotomy, repair of perineal tears, craniotomy/ craniocentesis

11

Spinal (Subarachnoid) Anesthesia

- ***Produces anesthesia in the lower part of the body by introducing an anesthetic solution into the the subarachnoid space around the spinal cord***

- Can be used for cesarean section, laparotomy, repair of extensive perineal tears, manual removal of placenta
- Pre-load woman with 500–1,000 mL IV fluids to avoid hypotension
- Ensure sterile technique
- Use finest needle available
- Keep the woman flat on her back for at least 6 hours after procedure to prevent post-spinal headache

12

Ketamine

- Ketamine is a general anesthetic
  - Can be used for any relatively short procedure where muscle relaxation is not required
  - AVOID ketamine in women with hypertension, pre-eclampsia, eclampsia or heart disease

13

Ketamine (continued)

- Usual dose:
  - 6–10 mg/kg body weight IM OR
  - 2 mg/kg body weight IV slowly over 2 minutes
- When used alone, ketamine can cause unpleasant hallucinations
- For ketamine infusion, premedicate with:
  - Atropine sulfate 0.6 mg IM 30 minutes before surgery AND
  - Diazepam (for cesarean section, give after the newborn is delivered)

14

Postoperative Analgesia

- Good postoperative pain control regimens include:
  - Paracetamol 500 mg by mouth as needed
  - Pethidine 1 mg/kg body weight IM or IV slowly
  - Morphine 0.1 mg/kg body weight IM
- Repeat every 4 hours as needed
- Give Promethazine 25 mg IM or IV every 4 hours if vomiting occurs

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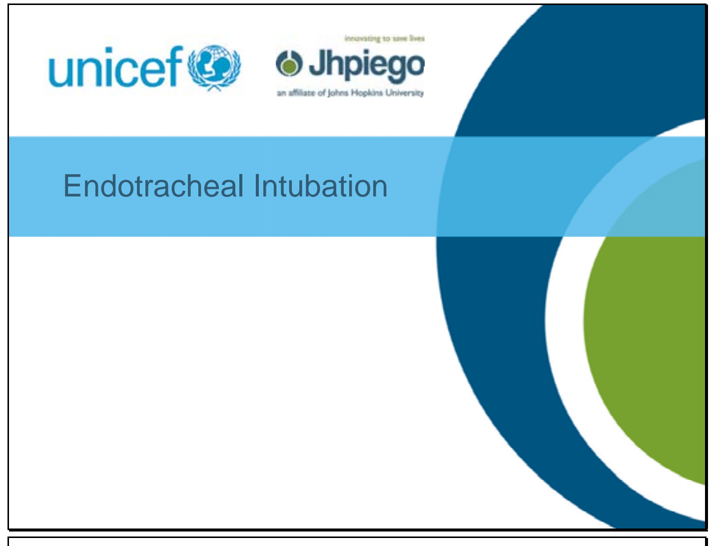

Airway Management

- Expertise in airway management requires knowledge of
  - Upper airway anatomy
  - Use of equipment
  - Relevant medicines

Indications

- To provide patent airway
- To prevent aspiration of gastric contents
- To facilitate positive pressure for respiration
- To provide ventilation of the lungs
- To enable operative position other than supine

Indications (cont'd)

- Operative site near or involving upper airway
- Need for frequent suctioning
- During thoracic operation

Assessment

- Mouth opening – 2-finger breadth between upper and lower incisors
- Look for – loose teeth, high arched palate, long narrow mouth, temporomandibular joint problems
- Neck – masses, mobility, deviation of trachea, neck extension < 30 degree – limits laryngoscopy

Assessment (cont'd)

- Presence of hoarse voice, stridor, previous tracheostomy
- 3 specific tests
  - Mallampti test
  - Thyromental distance
  - Extension at atlanto-occipital joint

Preparation

- Experienced assistant
- Equipment
  - Correct size laryngoscope – checked
  - Tracheal tube with additional alternative smaller sizes
  - Tracheal tube connector
  - Wire stylette

Preparation (cont'd)

- Equipment
  - Gum elastic bougies
  - Magill's forceps
  - Cuff inflating syringe
  - Securing tape or bandage
  - Catheter mount
  - Anesthetic breathing system and face mask
- Drugs – for induction and resuscitation

Tracheal Intubation

- Can Be Done Under/By
- General anesthesia
  - Intravenous or inhalation anesthesia with or without muscle relaxation
- Local anesthesia
  - Topical spray, translaryngeal spray and superior laryngeal nerve block

Conduct of Laryngoscopy

- Position – neck flexed, head extended
- Base of laryngoscope held in left hand
- Blade lifted upward and forward along axis of handle, lifting tongue and epiglottis
- Do not use teeth as fulcrum

Conduct of Laryngoscopy (cont'd)

- Curved blade – tip advanced to vallecula
- Straight blade – tip advanced posterior to epiglottis
- Short handle laryngoscope for short neck, pregnant woman and woman with large breasts

Conduct of Laryngoscopy (cont'd)

- Gentle external pressure on thyroid cartilage, push glottis posterior and bring vocal cord in view
- Tube cuff inflated to abolish audible gas leak on inflation of lung

Confirmation of Tracheal Intubation

- Most confirmatory – direct visualization of endotracheal tube passing between the vocal cords
- Air entry on auscultation (both lungs)
- Fiberoptic bronchoscope passed through tube to recognize carina

Confirmation of Tracheal Intubation

- Presence of exhaled CO2
- Antero-posterior and lateral fluoroscope for position of tube
- Breath sound difficulty
  - Aspiration
  - Pneumonia
  - COPD

Confirmation of Tracheal Intubation

- Less reliable
  - Palpation of anterior neck during passage of tube
  - Condensation inside the tube
  - Light visible through skin of anterior neck

Intubation Difficulty

- Incorrect position of patient
- Inadequate or improper equipment
- Unusual or abnormal anatomy
- Pathological causes

Intubation Difficulty

- Incidence of difficult intubation less than 1% – all patients
  (Cobley and Vaughan 1992)
- Failure to intubate in non-obstetric patients 1 in 2302
  (Samsoo and Young 1987)
- In obstetric patients 1 in 300
  (Lyons 1985)

Complications

- Laceration of soft tissue
- Laryngospasm, bronchospasm
- Vocal cord paralysis
- Dislocation of arytenoid cartilage or mandible
- Perforation of trachea or esophagus

Complications (cont'd)

- Endobronchial or esophageal intubation
- Dental damage
- Hemorrhage
- Aspiration of gastric contents
- Increased intracranial or intra-ocular pressure

Complications (cont'd)

- Hypoxia, hypercarbia
- Fracture and dislocation of the cervical spine
- Spinal cord damage
- Trauma to eye
- Tracheal stenosis – late (vocal cord ulcer or granuloma)

Preparing the Operating Theatre

- Ensure that:
  - OT has been cleaned since the last procedure
  - Necessary supplies and equipment are available: drugs, oxygen cylinder, laryngoscope, endotracheal tubes, face masks/nasal prongs
  - Emergency equipment is available and working
  - Lighting will be adequate

2

Preparing the Operating Theatre

- Ensure:
  - Adequate supply of theatre dress
  - Available clean linens
  - Adequate sterile supplies: gloves, gauze, instruments

3

Preparing the Woman

- Explain what procedure will be performed and why
- If the woman is unconscious, speak with her family
- Obtain informed consent

4

Preparing the Woman

- Review the woman's medical history and check for any allergies
- Send a blood sample for hemoglobin and blood typing
- Where available, order blood for transfusion
- Wash the area around the proposed incision with soap and water

5

Preparing the Woman

- Do not shave pubic hair as it increases the risk of wound infection. Trim with scissors or clippers only
- Monitor and record baseline vital signs
- Administer appropriate premedication

6

Preparing the Woman

- Give an antacid to reduce stomach acid in case there is aspiration
- Catheterize the bladder if necessary and monitor output
- Communicate all relevant information to the rest of the team

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Session Objectives

- To describe ectopic pregnancy including diagnosis and surgical management
- To describe salpingectomy as treatment for ectopic pregnancy
- To discuss common postoperative complications

2

Ectopic Pregnancy: Definition

- Pregnancy which implants outside the uterine cavity
- Fallopian tube is the most common site: >90%
- Signs and symptoms are highly variable and dependent on whether rupture has occurred
- Can be life-threatening

3

Ectopic Pregnancy: Signs & Symptoms

TABLE S-4 **Symptoms and signs of ruptured and unruptured ectopic pregnancy**

Unruptured Ectopic Pregnancy	Ruptured 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	• Collapse and weakness • Fast, weak pulse (110 per minute or more) • Hypotension • Hypovolaemia • Acute abdominal and pelvic pain • Abdominal distension[a] • Rebound tenderness • Pallor

[a] Distended abdomen with shifting dullness may indicate free blood.

4

Ectopic Pregnancy: Risk Factors

- History of prior ectopic pregnancy
- History of pelvic infection
- History of prior tubal surgery
- History of infertility
- Half of all women diagnosed with an ectopic pregnancy have no risk factors

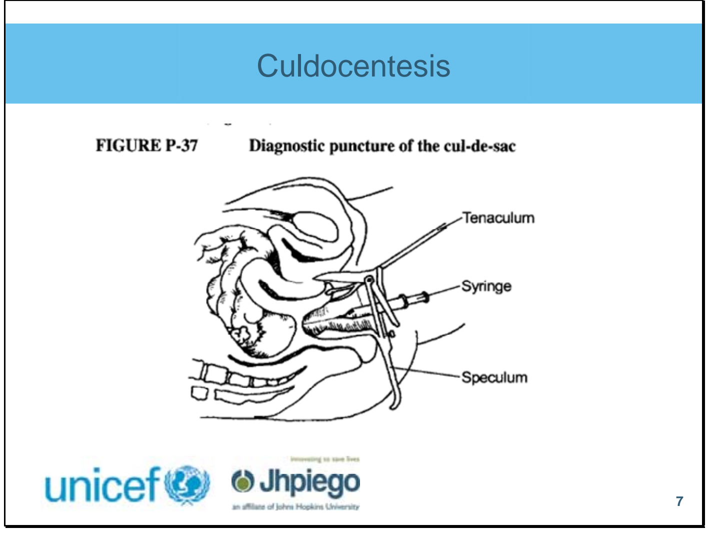
5

Ectopic Pregnancy: Diagnosis

- Culdocentesis with aspiration of non-clotting blood
- Serum pregnancy test with ultrasound

6

Culdocentesis



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Culdocentesis findings

- Non-clotting blood — suspect ectopic pregnancy
- Clotting blood — vascular aspiration—try again
- Clear/yellow fluid — ?unruptured ectopic
- No fluid — ?unruptured ectopic—try again
- Pus — probable pelvic abscess

8

Ectopic Pregnancy: Differential Diagnosis

- Threatened abortion
- Acute/chronic P.I.D.
- Ovarian cysts: rupture, torsion
- Acute appendicitis

9

Ectopic Pregnancy: Immediate Management

- If clinical picture suggests ruptured ectopic: emergency laparotomy
- Do not wait for blood before performing surgery
- Check baseline hemoglobin and send blood for type and crossmatch
- Give single dose of prophylactic antibiotics
  - ampicillin 2 g IV
  - cefazolin 1 g IV

10

Ectopic Pregnancy: Surgical management

- Salpingectomy
  - treatment of choice in most cases
  - removal of affected fallopian tube
- Salpingostomy
  - consider in unscarred pelvis
  - removal of the ectopic only
- Risk of another ectopic slightly higher for salpingostomy
- Risk of persistent ectopic higher with salpingostomy

11

Ectopic Pregnancy: Risk of Recurrence

- Risk of another ectopic after 1 prior ectopic: 10%
- Risk of another ectopic after 2 or more ectopics: 25%
- Women in whom the affected fallopian tube has been removed are at increased risk for ectopic pregnancy in the remaining tube
- Approximately 60% of women with an ectopic go on to have an intrauterine pregnancy

12

Salpingectomy for Ectopic Pregnancy

FIGURE P-58 Clamping, dividing and cutting the mesosalpinx

A. Clamping mesosalpinx

B. Dividing mesosalpinx

C. Placing a proximal suture around the tube

13

Postop Management

- Give adequate analgesia and hydration
- Encourage early feeding and ambulation
- Explain what was done and its implications to the woman
- Correct anemia with ferrous sulfate or fumerate
- Schedule a follow up visit at 4 weeks

14

Session Objectives

- To review common indications for cesarean delivery
- To describe intra-operative care principles
- To discuss common postoperative complications

2

Cesarean Section: Common Indications

- Obstructed labor
- Malpresentation
- Umbilical cord prolapse
- Placental abnormalities

3

Cesarean Section

- May be done under local, spinal or general anesthesia
- If fetal head deep in the pelvis, have an assistant available to assist vaginally
- Vertical abdominal incision is preferred if local anesthesia is used
- Open the lower segment of the uterus transversely and deliver the newborn, placenta and membranes
- Give prophylactic antibiotics after cord clamp
- Close the uterus and abdomen after ensuring hemostasis

4

Cesarean Section: Pre Operative Care

- Review for indications and be sure vaginal delivery is not possible
- Check the fetal heart rate and presentation
- Describe procedure and why it is necessary to woman and her family
- Obtain informed consent
- Check hemoglobin and blood type
- Start intravenous line

5

Cesarean Section: Intra-operative Care

- Tilt table to left or place wedge under woman's right lower back
- Do not shave hair at operative site
- Prepare skin with an antiseptic: iodophors, chlorhexidine
- Drape woman immediately after skin prep to avoid contamination

6

Cesarean Section: Monitoring

- Monitor vital signs, level of consciousness and blood loss
- Record findings on an appropriate monitoring sheet to allow quick recognition of problems
- Maintain adequate IV hydration throughout surgery

7

Cesarean Section: Anesthetic Options

- Local anesthesia: use vertical skin incision
- Regional anesthesia: spinal
- General anesthesia

8

Role of Prophylactic Antibiotics

- Administer AFTER cord is clamped
- Ampicillin 2 g IV OR cefazolin 1 g IV
- Single dose is sufficient

9

Cesarean Section: Making the Incision

- Make skin incision only as large as necessary for the procedure
- Proceed one layer at a time
- Handle tissue gently
- Ensure hemostasis throughout the procedure and keep blood loss to a minimum
- In general, use a transverse lower uterine segment incision

10

Sponge & Instrument Counts

- Start and finish the procedure with a count of all instruments, sharps and sponges:
  - perform the count everytime a body cavity is closed
  - document in record that counts were correct

11

Sharps Protocol

- Use sharp instruments carefully to reduce the risk of injury
  - Use a sterile pan to pass sharp items such as scalpels
  - OR pass instrument handle first
  - Pass suture needles on a needle holder

12

Use Appropriate Suture

- Recommended number of knots:
  - chromic catgut #3
  - polyglycolic #4
  - nylon #6

13

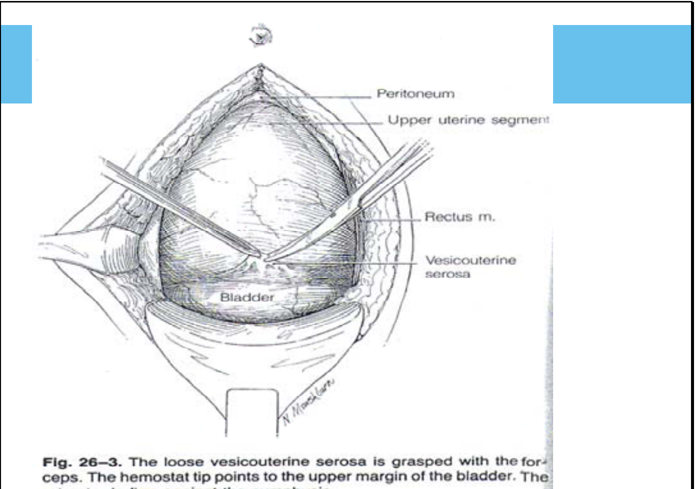


Fig. 26–3. The loose vesicouterine serosa is grasped with the forceps. The hemostat tip points to the upper margin of the bladder. The retractor is firm against the symphysis.

14

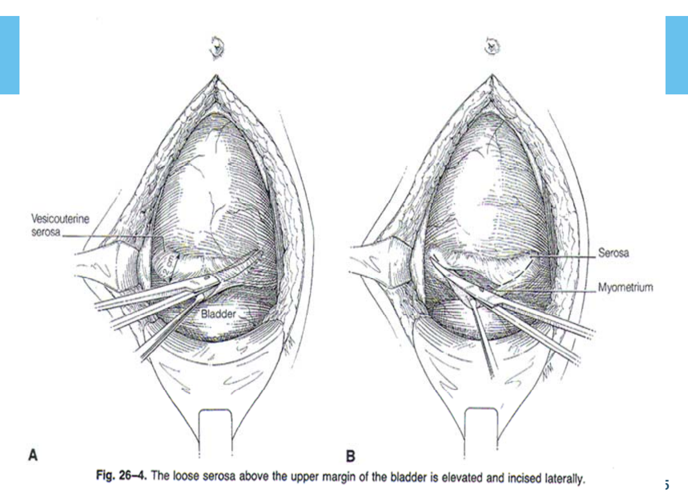


Fig. 26–4. The loose serosa above the upper margin of the bladder is elevated and incised laterally.

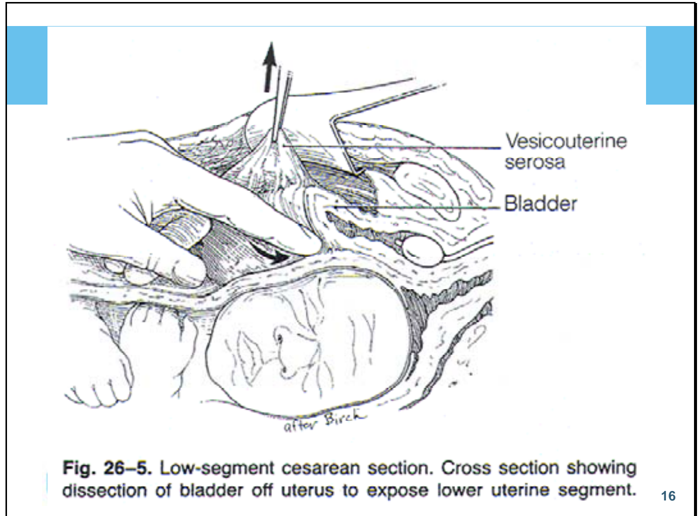


Fig. 26–5. Low-segment cesarean section. Cross section showing dissection of bladder off uterus to expose lower uterine segment. 16

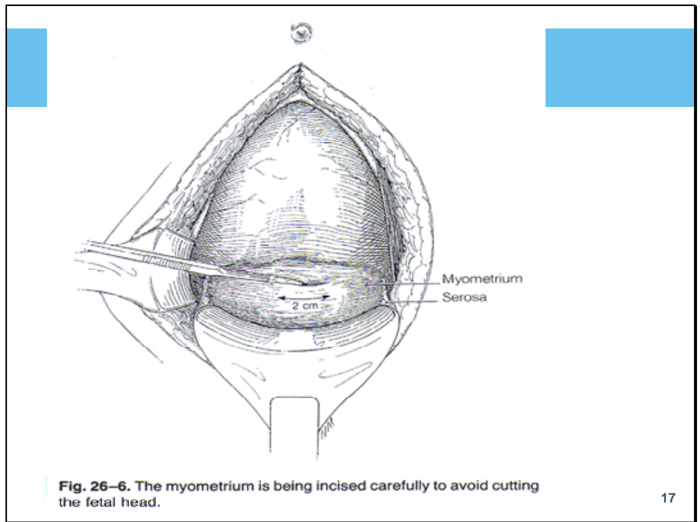


Fig. 26–6. The myometrium is being incised carefully to avoid cutting the fetal head. 17

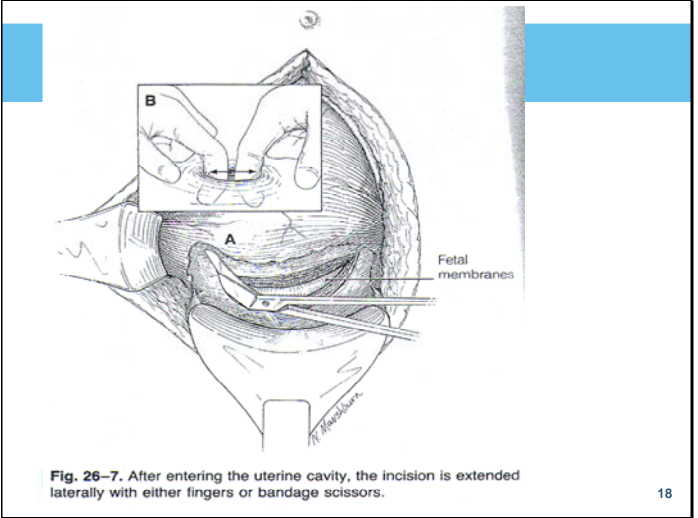
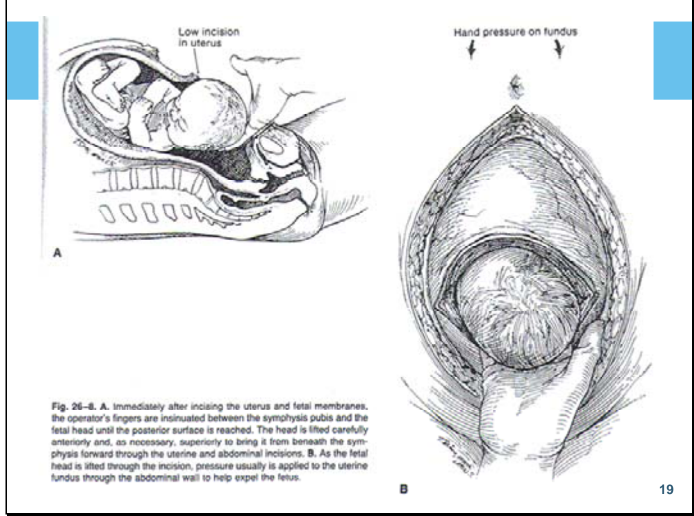


Fig. 26–7. After entering the uterine cavity, the incision is extended laterally with either fingers or bandage scissors. 18



Key Points: Avoid Extensions

- Position yourself so your upper trunk, arm and hand move as a unit to elevate the fetal head up through the uterine incision
- Elevate the head to the level of the uterine incision rather than bringing the incision down to the head
- Rotate the occiput anteriorly to present the shortest fetal head diameters to the incision
- Reduce the lower lip of the uterine incision beneath the fetal head, as you would reduce a posterior cervical lip at a vaginal delivery

20

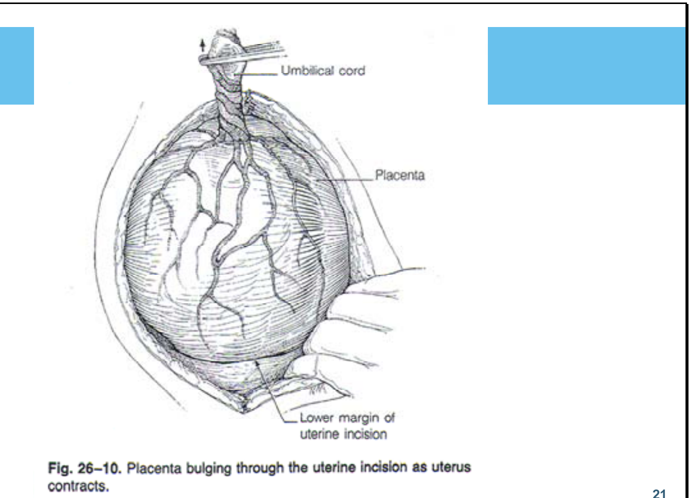
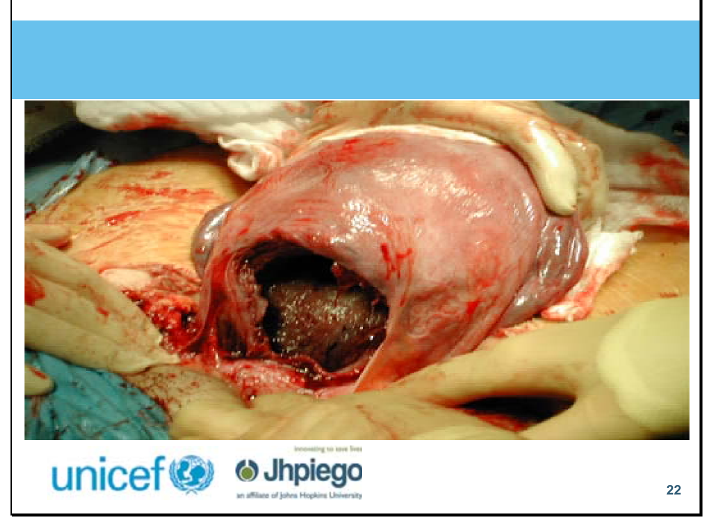


Fig. 26–10. Placenta bulging through the uterine incision as uterus contracts.

21



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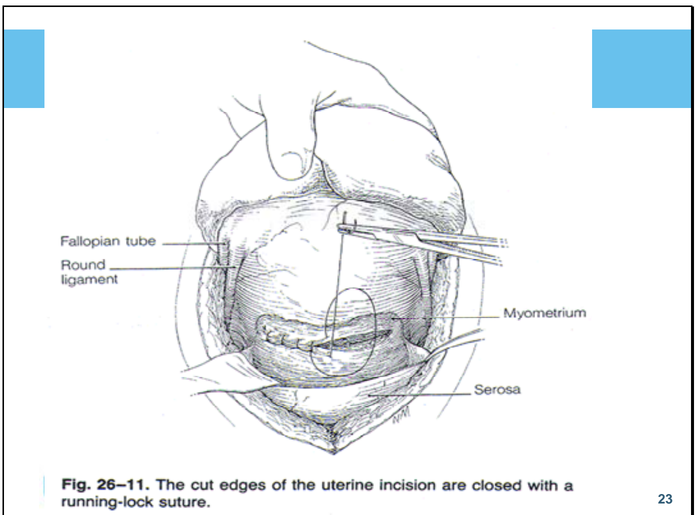


Fig. 26–11. The cut edges of the uterine incision are closed with a running-lock suture.

23

Indications for high vertical uterine incision

- Inaccessible lower segment: adhesions, prior cesarean
- Transverse lie with baby's back down
- Fetal malformations
- Large fibroids in the lower uterine segment
- Highly vascular lower segment: placenta praevia
- Carcinoma of the cervix

24

Closure of high vertical incisions

- Close in layers:
  - Close layer closes to cavity with continuous 0 chromic
  - Avoid including the decidua
  - Close second layer of uterine muscle with interrupted
  - 1 chromic
  - Close superficial muscle and serosa with continuous
  - 0 chromic

25

Tubal Ligation after Cesarean Section

- Can be performed immediately after procedure
- Patient must receive adequate preop counseling
- Informed consent

26

Problems Encountered During Cesarean Section

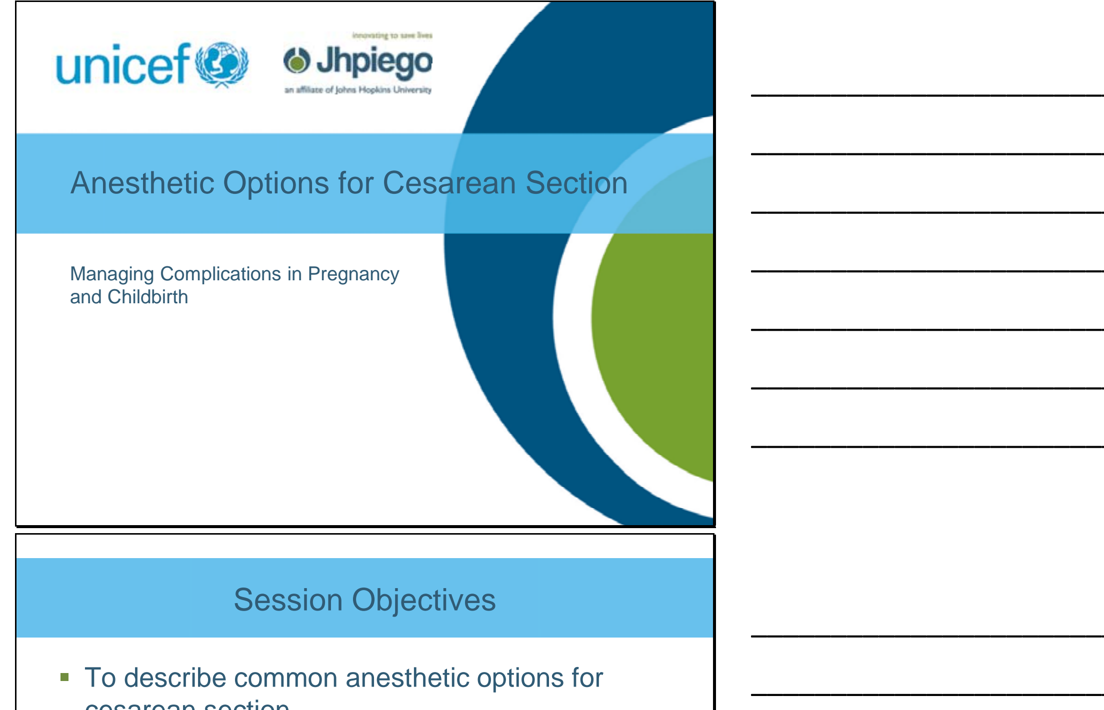
- Difficulty in controlling bleeding
  - Oxytocics, massage, sutures
  - Uterine and utero-ovarian artery ligation, hysterectomy
- Difficulty in delivering malpresentations
  - Anticipate and perform appropriate manipulations for childbirth
- Placenta previa/Adherent placenta
  - Incise placenta if necessary and deliver
  - Hysterectomy if placenta cannot be removed or uncontrollable bleeding

27

Cesarean Section: Post-Procedure Care

- Watch for postpartum bleeding
  - Give oxytocin infusion after surgery
- Give adequate analgesia and hydration
- Encourage early feeding and ambulation
- Explain what was done and its implications to the woman

28



Session Objectives

- To describe common anesthetic options for cesarean section
- To review common complications associated with cesarean section and their management

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2

Cesarean Section: Anesthetic Options

- Local
- General
- Ketamine
- Spinal

3

Local Anesthesia for Cesarean Section

- Safe alternative when general, ketamine or spinal anesthesia not available
- Continuous communication with the woman during the procedure is required
- Use instruments and handle tissue as gently as possible

4

Local Anesthesia: Precautions

- Avoid use in women with eclampsia, severe pre-eclampsia or previous laparotomy
- Avoid use in women who are obese, apprehensive or allergic to lignocaine or related drugs
- Avoid use if the surgeon is inexperienced at cesarean section
- Avoid intravascular injection

5

Local Anesthesia for Cesarean Section

- Start an IV infusion
- Prepare 200 mL of 0.5% lignocaine with 1:200,000 adrenaline
- Usually less than half this volume is required
- Avoid IV pethidine and promethazine before delivery due to risk of neonatal depression

6

Avoid Intravascular Injection

- Pull back on the plunger to be sure that no vessel has been entered.
- If blood is returned in the syringe with aspiration, remove the needle.
- Recheck position and try again.
- IV injection of lignocaine can cause confulsions and death

7

Local Anesthesia for Cesarean Section

- Inject anesthetic early to provide sufficient time for effect
- Pre-test with forceps before making incision
- Anesthetic effect should last about 60 minutes
- Use longer than usual incision to avoid manipulation and forceful retraction
- Repair the uterus without removing it from the abdomen
- Additional local anesthesia may be necessary to repair the abdominal wall

8

Ketamine for Cesarean Section

- May be used for any procedure that is <60 minutes
- Suitable as backup if inhalation apparatus fails
- May be given IM, IV or by infusion
- May take up to 60 minutes to wear off postop

9

Ketamine: Precautions

- When used alone, may cause hallucinations
- Avoid use in women with history of psychosis
- To prevent hallucinations, give diazepam 10 mgs IV after the baby is delivered
- Does not provide muscular relaxation—incision may need to be longer
- Do NOT use in women with high blood pressure, pre-eclampsia, eclampsia or heart disease

10

Ketamine for Cesarean Section

- Premedicate with atropine 30 minutes prior to surgery
- Give oxygen at 6-8 L per minute by mask or nasal prong
- Use mouth gag to prevent tongue obstruction
- Check level of anesthesia before proceeding with the surgery after induction
- Monitor vital signs every 10 minutes during the procedure

11

Spinal Anesthesia for Cesarean Section

- Effective option especially for non-emergent cesarean delivery
- Pre-load with IV fluids to avoid hypotension 30 minutes before placement
- Position woman to enhance flexion of the lumbar spine: sitting, right side
- Proper infection prevention practices essential to avoid introduction of bacteria into the subarachnoid space
- After placement, tilt table to left or place a wedge under right lower back to decrease supine hypotension syndrome

12

Spinal Anesthesia: Precautions

- Make sure no allergies to lignocaine or related drugs
- Normal spinal anatomy
- Avoid use in women with uncorrected hypovolemia, severe anemia, coagulation disorders, hemorrhage, local infection, severe pre-eclampsia, eclampsia or heart failure due to heart disease

13

Spinal Anesthesia: Complications

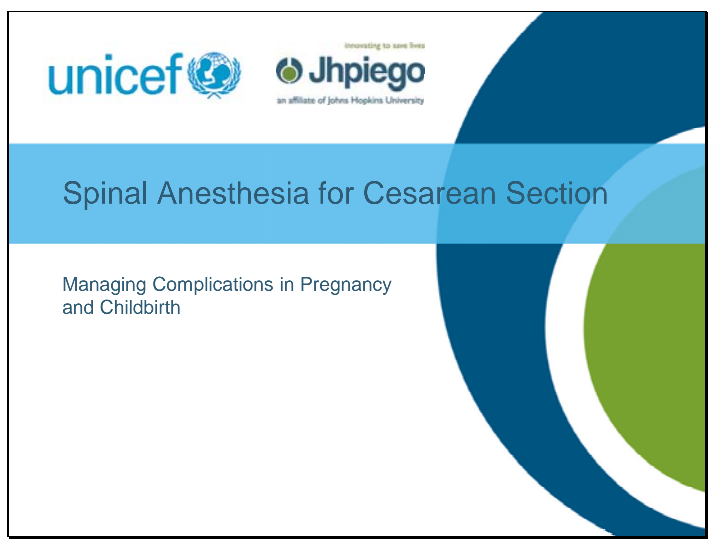
- Hypotension
  - Infuse IV fluids quickly
  - Give ephedrine IV

14

Avoiding Spinal Headaches

- Use a small caliber needle for injection
- Keep woman flat for at least 6 hours
- Keep woman well-hydrated

15



Session Objectives

- To describe administration of spinal anesthesia for cesarean section
- To review common complications associated with spinal anesthesia

2

Spinal Anesthesia for Cesarean Section

- Effective option especially for non-emergent cesarean delivery
- Pre-load with IV fluids to avoid hypotension 30 minutes before placement
- Position woman to enhance flexion of the lumbar spine: sitting, right side
- Proper infection prevention practices essential to avoid introduction of bacteria into the subarachnoid space
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5

Avoiding Spinal Headaches

- Use a small caliber needle for injection
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- Keep woman well-hydrated

6

Session Objectives

- To review indications for postpartum hysterectomy
- To describe types of postpartum hysterectomy and review procedure
- To discuss common postoperative complications

Obstetric Surgery 2

Postpartum Hysterectomy

- Usually performed emergently
- Most common indications: uterine atony with persistent PPH, uterine rupture, placenta accreta
- Anesthetic options: general, spinal

Obstetric Surgery 3

Types of Postpartum Hysterectomy

- Total — Removal of uterus and cervix
- Subtotal — Removal of uterus only

Obstetric Surgery

4

Antibiotic prophylaxis

- Surgical site infection: most common surgical complication
- Dramatic reduction with aseptic technique and antibiotic prophylaxis
- Single dose of prophylactic antibiotics before skin incision to prevent infection
  - ampicillin 2 g IV OR
  - cefazolin 1 g IV
- Prophylaxis is used only for patients who are not already infected prior to surgery

Obstetric Surgery

5

Postpartum Hysterectomy: Surgical Challenges

- Greater vascularity compared to the nonpregnant patient
- Close association of a dilated postpartum cervix and vagina to the ureters which run just inferior and lateral to the uterine artery
- Increased risk of deep venous thromboembolism postpartum

Obstetric Surgery

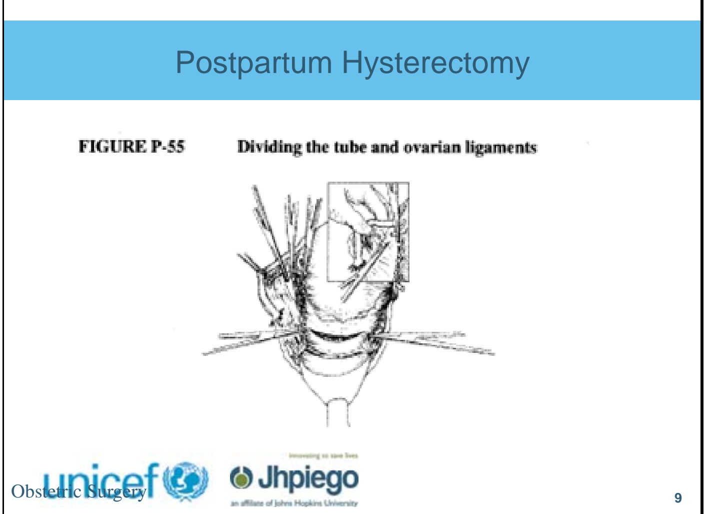
6

Postpartum Hysterectomy

- Lift the uterus out through the incision and compress and massage it to reduce bleeding
- Quickly clamp and divide round ligaments, tubes and ovarian ligaments
- Defer ligation of these pedicles until after uterine arteries have been secured
- Dissect the urinary bladder away from the lower uterine segment before clamping the uterine arteries

Postpartum Hysterectomy

FIGURE P-54 Dividing the round ligaments



Postpartum Hysterectomy

FIGURE P-55 Dividing the tube and ovarian ligaments

Postpartum Hysterectomy

FIGURE P-56 Dividing the uterine vessels

Obstetric Surgery

10

How to identify ureters

- Best located as they cross the common iliac vessels and descend into the pelvis
- Ureters should be traced visually or by palpation to the level of the uterine arteries.
- When ligating uterine arteries, avoid including the ureter in the clamp or the stitch
- Subtotal hysterectomy is less likely to result in ureteral injury

Obstetric Surgery

11

Postpartum Hysterectomy

FIGURE P-57 Line of amputation

Obstetric Surgery

12

Postpartum Hysterectomy

- WARNING: The ureters are close to the uterine vessels
- For sub-total hysterectomy: Ligate the uterine arteries and amputate the uterus just above the junction of the uterus and the cervix
- Close the stump after amputation of the uterus
- Ensure hemostasis. Leave drain if hemostasis is not satisfactory

Obstetric Surgery

13

Postop management

- Give adequate analgesia and hydration
- Encourage early feeding and ambulation
- Explain what was done and its implications to the woman
- Correct anemia with iron and folate

Obstetric Surgery

14

Postpartum Hysterecgtomy: Wound infections

- Remember there are two incisions: one visible on the abdomen, the other at the top of the vagina
- Abscesses require drainage
- Cellulitis and fever require antibiotic treatment as well

Obstetric Surgery

15

Wound Infections

- If an abscess develops under the abdominal closure:
  - open and drain the wound
  - debride infected skin and subcutaneous tissue
  - do not remove fascial sutures
  - damp sterile dressing in the open wound
  - change dressing every 24 hours

Obstetric Surgery 16

Wound Infections

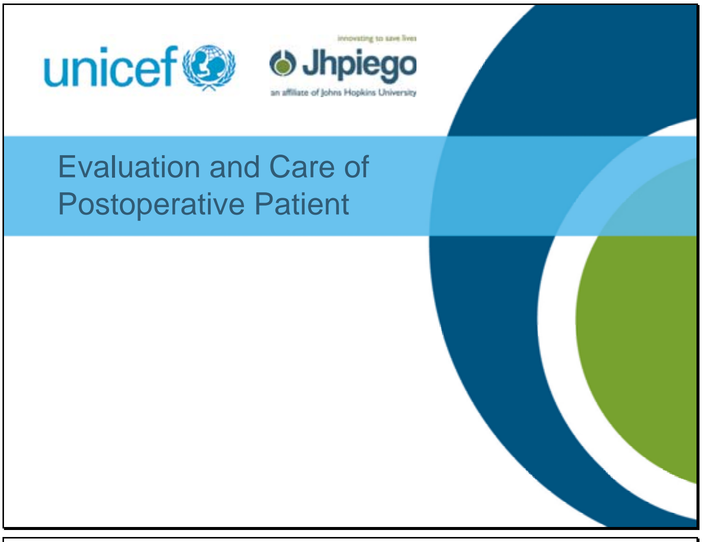
- Cellulitis of abdominal incision:
  - monitor for development of abscess
  - if superficial, treat with appropriate antibiotics

Obstetric Surgery 17

Wound Infections

- Vaginal cuff collection or cellulitis
  - transvaginal drainage
  - IV antibiotics

Obstetric Surgery 18



Postoperative Care Basic Principles

- Increased risk of morbidity and mortality after any type of anesthesia or surgery
- Constant monitoring of patient is critical—temperature, pulse, blood pressure, respiration rate and any signs of continuing blood loss
- All postoperative patients should be cared for in a recovery ward or area well equipped with drugs, supplies and trained personnel

2

Postoperative Care Basic Principles

- Initial postoperative care:
- Assess woman's condition:
  - Monitor vital signs every 15 minutes for first hour and then every 30 minutes for next hour
  - Monitor level of consciousness every 15 minutes until woman is alert
  - Intervene if condition worsens
- Ensure clear airway and adequate ventilation
- Maintain adequate hydration and transfuse if necessary
- Ensure adequate pain relief

3

Postop management

- If the patient is restless, something is wrong.
- Look out for the following in recovery:
  - Airway obstruction
  - Hypoxia
  - Hemorrhage
  - Hypotension and/or hypertension
  - Postoperative pain
  - Shivering, hypothermia
  - Vomiting, aspiration
  - Falling on the floor
  - Residual narcosis

4

Monitoring in Recovery Area

- Follow the ABCD of postoperative care:
- Airway
  - Is the patient breathing on her own?
  - Check for any obstructions of the airway
- Breathing
  - Note the rate and depth of respiration
  - Is there any sign of hypoxia?

5

Monitoring in Recovery Area

- Circulation
  - Are the pulse and blood pressure stable?
  - Check peripheral circulation
  - Is she bleeding? If yes, inform the surgeon
  - Does the patient need fluid replacement?

6

Monitoring in Recovery Area

- Drugs
  - Is the patient in excessive pain? Consider additional drugs for pain management
  - Is nausea and/or vomiting severe? Consider anti-emetics
  - Consider providing sedation, if required
  - Is the patient restless, confused and agitated? Look for a cause

7

Causes and Management of Postoperative Nausea and Vomiting

- Causes of postoperative nausea and vomiting:
- Drugs – opiates
- Gynecologic and bowel surgery
- Pain, hypoxia and hypotension
- Rough handling of patient
- Treatment:
- Anti-emetics

8

Transferring the Patient to the Ward

- Before sending the patient to the ward, make a quick assessment of the patient:
  - Is the patient alert and breathing on her own?
  - Is the patient able to cough and maintain a clear airway?
  - Can the patient lift her head from the bed for at least 3 seconds?
  - Are the patient's pulse rate and blood pressure stable?
  - Are the hands and feet well perfused and warm?
  - Is there adequate urine output?

9

Postoperative notes and orders

- The patient should be discharged to the ward with orders for the following:
  - Vital signs
  - Pain control
  - Rate and type of IV fluid
  - Urine, vaginal and drain output
  - Other medications
  - Lab tests

10

Postoperative Care Basic Principles

- Subsequent care:
  - Bowel function generally returns rapidly for obstetric patients
  - Start on oral fluids and move to solid food as tolerated
  - Give IV fluids until oral intake is adequate
  - Remove dressing after first postoperative day
  - Remove drain after infection has cleared or when there is no drainage for 48 hours
  - Provide adequate pain relief and give antibiotics if indicated
  - Remove urinary catheter as soon as urine is clear
  - Encourage ambulation
  - Remove skin sutures 5 days after surgery

11

Monitoring the patient's progress

- The patient's progress should be closely monitored and should include:
  - Medical and nursing observation notes
  - Specific comments on wound site
  - Any complications
  - Any changes in treatment

12

Aftercare: Prevention of Complications

- Encourage early mobilization:
  - Deep breathing and coughing
  - Daily ambulation
  - Walking aids as needed
- Ensure adequate nutrition
- Prevent skin breakdown and pressure sores:
- Provide adequate pain control

13

Discharge note

- Diagnosis on admission and at discharge
- Summary of course in hospital
- Instructions about further management including drugs prescribed
- Give copy of this info to patient together with follow up appointment date

14

Session Objectives

- To review signs and symptoms associated with uterine rupture
- To describe risk factors for uterine rupture
- To describe surgical approach to repair of uterine rupture

2

Uterine Rupture: Overview

- May be diagnosed during labor or postpartum
- Requires surgical repair via laparotomy
- Often requires emergency laparotomy
- Anesthetic options will depend on whether emergency induction is needed

3

Uterine Rupture: Risk Factors

- Prolonged labor
- Prior cesarean section or uterine surgery such as myomectomy
- Multiple gestation
- Malpresentations

4

Uterine Rupture: Signs and Symptoms

- Intra-abdominal and/or vaginal bleeding
- Severe abdominal pain (may decrease after rupture)
- Shock
- Abdominal distension/free fluid
- Abnormal uterine countour
- Tender abdomen
- Easily palpable fetal parts
- Absent fetal movement and fetal heart sounds
- Rapid maternal pulse

5

Ruptured Uterus: Hemorrhage

- May occur vaginally unless the fetal head or breech blocks the pelvis
- May occur intra-abdominally
- If rupture of the uterine wall extends into the broad ligament, hemorrhage may be silent

6

FIGURE S-2 Rupture of lower uterine segment into broad ligament will not release blood into the abdominal cavity

7

Rupture of the Uterus: Fetal Survival

- High risk of fetal morbidity and mortality
- Emergency intervention important
- Fetus may be found floating freely in the abdominal cavity outside the uterus

8

Laparotomy for Ruptured Uterus

- May be done under spinal or general anesthesia
- If mother or baby in jeopardy, emergency induction of anesthesia recommended
- Open the abdomen and deliver the newborn and placenta
- Lift the uterus out of the incision to visualize the extent of the rupture. Suture together the edges of the rupture. If repair is not possible, do hysterectomy
- Examine the bladder for rupture and repair if ruptured

9

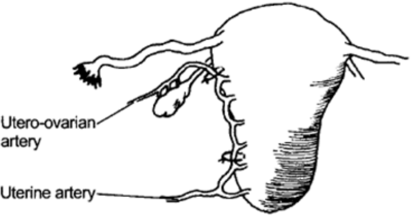
Findings at Laparotomy

- If uterus is torn through cervix and vagina, mobilize bladder at least 2 cms below the tear
- If rupture extends laterally to damage one or both uterine arteries, ligate the artery
- Identify arteries and ureter prior to ligating uterine vessels

10

Ligation of uterine arteries

FIGURE P-53 **Sites for ligating uterine and utero-ovarian arteries**



11

Broad Ligament Hematoma

- If rupture has created a broad ligament hematoma:
  - Clamp, cut and tie off the round ligament
  - Open the anterior leaf of the broad ligament
  - Drain hematoma manually if necessary
  - Inspect area carefully for injury to the uterine artery or its branches
  - Ligate any bleeding vessels

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Laparotomy for Ruptured Uterus

- Close the abdomen after giving prophylactic antibiotics and oxytocin infusion
- Leave drain if hemostasis is not satisfactory
- Give adequate analgesia and hydration
- Encourage early feeding and ambulation
- Explain what was done and its implications to the woman
- Discuss increased risk of rupture with subsequent pregnancies

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