

INTRODUCTION

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Every year it is estimated that worldwide, more than 500 000 women die of complications of pregnancy and childbirth. At least 7 million women who survive childbirth suffer serious health problems and a further 50 million women suffer adverse health consequences after childbirth. The overwhelming majority of these deaths and complications occur in developing countries.

To support the upgrading of midwifery skills so that countries can respond to this situation by strengthening maternal and newborn health services, a set of midwifery training modules was developed by the World Health Organization (WHO). The need for the modules was identified by the midwives and teachers of midwives from around the world who attended the Pre-Congress Workshop on Midwifery Education: Action for Safe Motherhood, held in Kobe, Japan in 1990 under the joint sponsorship of WHO, the International Confederation of Midwives (ICM) and the United Nations Children's Fund (UNICEF). The framework for midwifery education developed at the workshop formed the basis for the modules.

The modules, while primarily intended for in-service training programmes for midwives and nurse-midwives, can also be used in basic and post-basic midwifery programmes. In addition, the modules can be used to update the midwifery skills of other health care professionals. It is important to note, however, that they are not meant to replace midwifery textbooks which deal with other aspects of care during pregnancy, childbirth and the postnatal period, but are instead intended to serve as the basis for teaching midwives and midwife trainees, or others requiring these specific midwifery skills, to respond appropriately to major causes of maternal mortality such as haemorrhage, abortion complications, obstructed labour, puerperal sepsis and eclampsia. The modules can also be used for updating the knowledge and skills of midwifery teachers.

The modules aim to help midwives and others develop into skilled practitioners who are able to think critically and make clinical decisions on the basis of sound knowledge and understanding of these complications. Nonetheless, it is assumed that midwives and midwife trainees who undertake training using the modules, will already have gained proficiency in most of the basic skills such as measuring blood pressure, performing a vaginal examination, conducting a normal delivery and prevention of infection. Therefore, when using the modules for basic midwifery programmes, these skills should be taught first.

A variety of other skills are included in the modules because they are considered essential to comprehensive midwifery practice. In some countries some of these skills may not be a part of midwifery practice and, indeed, may be seen as the responsibility of the medical practitioner rather than of the midwife. However, the modules have been developed based on the belief that, in addition to basic midwifery skills, midwives require a range of life saving skills to enable them to make a significant contribution to reducing maternal deaths and to promoting safe motherhood.

In the original series released in 1996, there were five modules. More recently, a further module on managing incomplete abortion was added. The modules were updated in 2001–2002, in line with recent evidence and the WHO guideline for *Managing complications in pregnancy and childbirth: a guide for midwives and doctors*. The foundation module deals with the midwife in the community, while the technical modules each cover specific problems which may lead to maternal death. It is estimated that the foundation module will

require a minimum of two weeks for effective teaching and learning, while each technical module will require from ten days to two weeks. These time frames may vary depending on factors such as the ability of students and the resources available to support the teaching–learning process and the schedule of the teaching–learning programme.

Each of the modules is self-contained and can, if necessary, be taught independently of the other modules. They are, however, intended to complement each other, since together they present a comprehensive approach to dealing with the major causes of maternal mortality and morbidity. It is therefore advisable to use the modules in a way that will enable midwives to work through all of them.

All of the skills covered in the modules are necessary if midwives are to be effective in giving prompt and appropriate care to women who experience complications of pregnancy and childbirth, and to comply with the international definition of skilled attendant¹ for pregnancy, childbirth and postnatal care. Nevertheless, it may be that in some countries midwives are not legally authorized to perform all of the required skills. In these countries the modules will need to be adapted to conform to local regulations relating to midwifery practice, while at the same time, efforts should be made to introduce legislative changes to ensure that midwives are allowed to perform these required skills.

STRUCTURE OF THE MODULES

All the modules have the same structure, with the exception of the foundation module which follows a slightly different pattern from the others. The foundation module does not deal with a specific clinical problem, but with the general issue of maternal mortality, the factors which contribute to it, and the importance of working with the community to help make motherhood safer. The sessions in this module are therefore structured around these topics.

The technical modules deal with specific clinical problems and follow a common framework; each begins with an introduction to the specific problem which is then followed by sessions on the related avoidable factors, identifying the problem, managing the problem, and learning the required clinical skills.

The sessions in all of the modules are presented in the following way:

Introduction and outline to the session which describes:

Aims – aim of the specific session

Objectives – on completion of each session what the student will be able to do

Plan – outline plan for the session

Resources – student instructions and worksheet, puzzles and textbooks

¹ A skilled attendant is a health professional with midwifery skills, such as midwives, and those doctors and nurses who have been educated and trained to proficiency in the skills to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period and to identify, manage or refer complications in the woman and newborn. (*Making pregnancy safer: the critical role of the skilled attendant. A joint statement by WHO, ICM and FIGO.* Geneva, World Health Organization, 2004).

Instructions for the teacher (text in italics): explain step-by-step how to lead the session, and sometimes includes suggested methods for assessment of learning.

Supplementary material for the teacher (normal text): gives details of the teaching content for both theory and practice.

Instructions for students (labelled as “Instructions for Students”, or “Instructions for Group Work”): provide guidelines for individual or group activities.

CONTENT OF THE MODULES

The midwife in the community

The module begins with the Story of Mrs X which shows how certain social, economic and cultural factors, combined with delays in seeking and obtaining medical care put mothers at risk of complications which frequently lead to death. The theme from the story is then reinforced throughout the remainder of the module. Special emphasis is given to the role of midwives in promoting safe motherhood in the community by helping individuals, families and other community members understand and contribute to safe motherhood.

There are sessions covering specific topics such as the place and value of women in society; advancing safe motherhood through human rights; traditional beliefs, practices and taboos affecting the health of women during pregnancy and childbirth; the recognition and reduction of risk factors; the concept of delay as it relates to maternal death; and HIV/AIDS and safe motherhood. Additional sessions include the use of community profiling for planning community-based care and for evaluation of that care.

Managing postpartum haemorrhage

In order that students may fully understand how postpartum haemorrhage occurs, this module begins with a detailed explanation of the physiology and management of the third stage of labour. Students then learn what postpartum haemorrhage is, how it occurs, what factors contribute to it, how it can be identified, and the critical points for management.

The skills specific to preventing and managing postpartum haemorrhage include: identification of the factors which place women at risk for postpartum haemorrhage; management of the third stage of labour; massaging the uterus and expelling clots; applying bimanual compression to the uterus; applying manual compression to the aorta; suturing perineal tears; suturing an episiotomy; repair of cervical and high vaginal tears; and manual removal of the placenta. The general skills in this module include: urinary catheterization; taking and recording observations; taking blood samples for analysis; setting up and monitoring intravenous infusions; monitoring blood transfusion; universal precautions for prevention of infection, and maintaining records. Some of these general skills are also included in the other technical modules.

Managing prolonged and obstructed labour

This module begins with a review of the anatomy and physiology relevant to the management of prolonged and obstructed labour. On the basis of this, the module explains what makes obstructed labour more likely to occur, what

happens in obstructed labour, how signs of obstructed labour can be identified, and steps to be taken for effective management. Special emphasis is placed on the use of the partograph in monitoring labour.

The skills specific to preventing and managing prolonged and obstructed labour include: identification of risk factors; assessing pelvic outlet; diagnosing presentation and position of the baby; assessing descent of the fetal head; recognizing obstructed labour; and vacuum extraction. The general skills in this module include: urinary catheterization; taking blood samples for analysis; setting up and monitoring an intravenous infusion; administering necessary drugs; maintaining fluid balance; universal cautions for prevention of infection; and maintaining records.

Managing puerperal sepsis

This module begins with an explanation of the problem of puerperal sepsis. The content then covers the factors which contribute to the infection, how it can be identified and differentiated from other conditions, how it can be prevented and, if it does occur, how it can be managed. A session on HIV and AIDS, related to childbearing women, is also included.

The skills specific to preventing and managing puerperal sepsis include: identification of risk factors; identification of symptoms and signs; taking a midstream specimen of urine; taking a high vaginal swab; and maintaining vulval hygiene. The general skills in this module include: taking and recording observations; taking blood samples for analysis; setting up and monitoring an intravenous infusion; maintaining fluid balance; universal precautions for prevention of infection; administering necessary drugs; preventing thromboembolic disorder; and maintaining records.

Managing eclampsia

This module begins with an explanation of the conditions pre-eclampsia and eclampsia. The content then covers the factors which contribute to eclampsia, how it can be identified and differentiated from other conditions, how it can be prevented and, if it does occur, how it can be managed.

The skills specific to preventing and managing eclampsia include: identification of risk factors for pre-eclampsia and eclampsia; midwifery observations; and care and observation during a fit. The general skills in this module include: taking blood samples for analysis; setting up and monitoring an intravenous infusion; administering necessary drugs; urinary catheterization; preventing thromboembolic disorder; universal precautions for prevention of infection; and maintaining records.

Managing incomplete abortion

This module begins with an explanation of abortion, including the types of abortion, the effect of abortion on maternal mortality and morbidity, the prevention of unwanted pregnancy, laws and regulations related to abortion, sociocultural and religious perspectives, and the role of midwives in abortion care, with particular emphasis on emergency abortion care. The content then covers the factors which contribute to abortion, how it can be identified and differentiated from other conditions, how it can be prevented and, if it does occur, how it can be managed.

The skills specific to managing incomplete abortion include: manual vacuum aspiration, and post-abortion family planning counselling and methods. The following skills, which are also in the postpartum haemorrhage module, are included because they may be necessary when managing incomplete abortion: applying bimanual compression to the uterus; applying manual compression to the aorta; and repair of cervical and high vaginal tears. The general skills in this module include: taking and recording observations; taking blood samples for analysis; setting up and monitoring intravenous infusions; monitoring blood transfusions; administering drugs, urinary catheterization; preventing thromboembolic disorder; universal precautions for prevention of infection; and maintaining records.

TEACHING–LEARNING METHODS

The modules propose a range of teaching–learning methods designed to maximize student involvement in the teaching–learning process, based on principles of adult learning. There is an emphasis in the modules of applying theory to practice, thus adequate time in the clinical areas and visits to the community are an essential part of the teaching–learning process, and careful attention and advanced preparation is required for this component, as it is for the theory content.

Modified lectures

Modified lectures are used in the modules to introduce new information and to review content that students may already be familiar with. They include strategies such as brainstorming, buzz groups, question and answer sessions and discussion which involve students in their own learning. The modules include a variety of visual materials for the teacher to use in order to make their sessions as interesting as possible.

The teacher may wish to augment the lecture content included in the modules with information from other sources, or simply follow the outline provided. In either case it will be important to prepare in advance for each session by reading the relevant content and reference materials, and by ensuring that resources for students are available if required,

Discussions

It is important to allow time for discussion at appropriate points during, or at the conclusion of, teaching sessions. This will provide an opportunity for students to ask questions about information that is unclear to them, as well as to make contributions on the basis of their knowledge and experience, and for the teacher to assess the views and level of knowledge and understanding of the students.

Group work and feedback

Many of the sessions in the modules involve group work, which is usually followed by a feedback session from each group to the whole class. The groups should be kept as small as possible (preferably not more than six students per group), the aim being to provide an opportunity for students to examine a specific issue or problem. It is important to ensure that there is sufficient space for the groups to meet without disturbing each other. Each group will need a facilitator who will be responsible for keeping the discussion going and ensure

that the group completes its work. Where the facilitator is someone other than the teacher, this person should be supplied with briefing notes. In addition, it is essential the teacher rotates through each group without disrupting the discussion, to ensure the group are keeping to their brief, or to assist with any difficult questions or issues that may arise. In addition, each group will require a rapporteur who will take notes and provide feedback to the class as a whole. Specific instructions are provided in the sessions which involve group work.

Tutorials

A tutorial is an informal teaching–learning session between a teacher and a student or a small group of students. Tutorials are time-consuming but are essential for discussing students’ progress. Tutorials usually follow a specific learning activity and give students an opportunity to express their concerns to the teacher and, in turn, give the teacher an opportunity to get to know each student better, particularly in relation to the progress being made. Tutorials are included in each of the modules, but not in all sessions.

Practical exercises

Practical exercises provide an opportunity for students to demonstrate their knowledge and skill related to a particular topic. It is important in these situations to provide clear instructions to the students about the exercises to be undertaken and to monitor their progress and provide help when required. The foundation, postpartum haemorrhage, management of prolonged and obstructed labour, and management of incomplete abortion modules include practical exercises.



Community visits

Community visits are intended to be both instructive and enjoyable experiences for the students. The foundation module includes a series of community visits aimed at helping students understand how the concepts in this module apply in the community. Community visits must, however, be planned and organized well in advance, including the choice of an appropriate community, seeking authorization from the relevant authorities to visit the community, and contacting a key person who is able to facilitate and supervise the student activities in the community. Another important consideration is the availability of transport to take students to and from the community.

The teacher may choose to organize the community visits so that they are implemented on consecutive days, rather than at the intervals suggested. If this change is made, it will be important to ensure that it does not interfere with the achievement of the learning objectives for the module.

Clinical teaching

Clinical teaching is extremely important in the technical modules because the clinical skills students learn can mean the difference between life and death for the women in their care. The underlying theory for each of the skills in the modules should be taught in the classroom and, where possible, the skills themselves taught in a simulated clinical setting prior to taking the students to the real clinical area. Facilities where clinical practice is to take place should be chosen on the basis of the anticipated availability of women with conditions included in the modules. However, even with the best of planning, it will not always be possible to guarantee hands-on experience for every

student for the full range of skills. It will be important, therefore, to consider other opportunities for students to learn the necessary skills, for instance by simulation and local mechanism to gain appropriate clinical experience following completion of the course.

Arrangements with the staff at the health facilities where clinical teaching is to take place must be made in advance. Moreover, the students' visits to these facilities for the purpose of clinical practice should not disturb routine client care. When students are learning and practising hands-on skills, supportive supervision must be provided by the teacher or by other trained and experienced staff until competency in the relevant skills has been achieved.

Drama and role play

Drama and role play may be used to emphasize points made by the teacher. In both cases students are asked to act out a real or imaginary situation. In drama, students make up their own characters and to some extent their own story in order to illustrate a particular point. In role play, students take the part of specific individuals such as the midwife, the village leader, the distressed relative or the worried mother. This provides students with an opportunity to view and understand situations, issues and/or problems from the perspective of others. Drama and role play are included as optional activities in several of the modules.

Case studies

The technical modules provide students with the opportunity to present case studies as the basis for evaluating the effectiveness of care in specific situations. Students will be able to learn from their own experience as well as from that of others. The intention of case studies is not to criticize the practice of others; instead, students should be encouraged to look at past practice and see what lessons can be learned for the future. The case studies should be based on client records selected to demonstrate the management of particular conditions (e.g. eclampsia). It should be noted that client confidentiality must be maintained throughout the presentation of case studies.



Learning games and puzzles

Learning games and puzzles provide interactive and enjoyable means for students to gain new knowledge, and to review and consolidate existing knowledge. The learning games and puzzles in the modules will be new to the teachers who use them, and it is therefore important that they become familiar with them in advance. In particular, it is important that the teacher be able to provide a clear explanation to students as to the use of the games and puzzles to be used, and to monitor progress during the activity.

Workshops

A workshop is a period of planned activity on a specific topic, often with a presentation by one or more guest speakers. Where workshops are recommended the content and programme are suggested. Workshops require careful planning with regard to the content, timetable, and facilities. The puerperal sepsis and eclampsia modules include workshops in the session on care plans.

Reflection

Learning occurs as a result of reflecting on experience. Students should therefore be encouraged to reflect on their experience in clinical practice and record their reflections in a diary or notebook. These reflections can be used as a basis for discussion with tutorial staff and/or peers. A framework for reflection includes selecting an experience, identifying their own feelings and thoughts about that experience, feelings and thoughts of others, and then evaluating what was good and what was bad about the experience. Next, the student is encouraged to try to make sense of the experience by analysing why it was good and/or bad, and determine what else could have been done in the situation to improve the outcome. Finally, an action plan is made for future practice when a similar situation arises. Discussing the experiences recorded in their reflective diaries either in groups or with a teacher helps to give students different perspectives on their experience. A summary of such discussions should be added to the recordings in the diary to help with recall at a later date.

ASSESSMENT OF STUDENTS

Pre- and post-tests

Pre-tests provide a useful means of establishing a baseline for students' theoretical knowledge. The same questions used in the pre-test should be used again in the post-test to assess knowledge on completion of the module. The teacher may also wish to add additional questions to the post-test. It should be noted that during the teaching-learning process, other options for assessment (see below) should be used, in particular to determine the progress being made by each student as the course continues. Examples of pre- and post-test questions are included in each of the technical modules.

Assessing clinical competence

The assessment of clinical competence constitutes the major component of student assessment in the technical modules. Throughout the sessions which involve the teaching of clinical skills in the modules, there are sections entitled Assessing Competence. These sections provide guidelines for teachers to assess the clinical competence of students, following the teaching of a specific clinical skill. Where possible, the teacher should observe the performance of skills in a clinical setting. However, this may not always be possible, because clients with the particular conditions included in the modules may not always be available at the appropriate time. In these circumstances teachers should attempt to provide simulated situations which offer the opportunity for students to practice and be assessed in the relevant skills. Trained staff in the clinical areas may also be involved in the assessment of the students' clinical competence.

Other options for assessment

Other options for assessment will be available during group work, such as tutorials, student seminars, learning games and quizzes, and during community visits. These activities provide vital opportunities for the teacher to monitor the progress of students in terms of achieving the learning objectives of particular sessions in the modules.

PLANNING FOLLOW-UP ACTIVITIES

Comprehensive midwifery practice relies on experience, as well as knowledge and skills. Experience is what the students will gain as they put into practice what they have learned from these modules, when they return to their respective places of work.

It is precisely when they begin to put their knowledge and skills into practice that the midwives will come across situations that may raise questions for them. For example, there may be issues and problems which they would like to discuss with supervisors and more experienced practitioners, in order to seek solutions and improve practice. This may be particularly applicable for midwives and nurse-midwives who, at the end of the training course, still require additional hands-on clinical experience in some of the skills included in the modules.

Therefore, a follow-up meeting, perhaps six months after the end of the course, will be important to enable the students to share experiences, report on successes, review progress, and discuss problems related to practice. Other follow-up meetings may also be appropriate, perhaps after one year, and even again after two years.