EFFECTIVE TEACHING

A Guide for Educating Healthcare Providers

World Health Organization

JHPIEGO An Affiliate of Johns Hopkins University

A GLOBAL LEADER IN IMPROVING HEALTH CARE FOR WOMEN AND FAMILIES

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JHPIEGO, an affiliate of Johns Hopkins University, builds global and local partnerships to enhance the quality of health care services for women and families around the world. JHPIEGO is a global leader in the creation of innovative and effective approaches to developing human resources for health.

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PREFACE

Healthcare professionals play a key role in the implementation of any public health program or strategy. Experience has shown that the distribution of information, such as evidence-based clinical practice guidelines, is not sufficient in and of itself to bring about change in healthcare providers' behavior. Rather, those who provide health services must first become aware of and support the need to change or update their practices. Then they must have an opportunity to upgrade their knowledge, skills, and attitudes through targeted inservice training, in the case of those already practicing, or strengthened preservice education, in the case of future healthcare professionals. In addition, health services must promote structures and processes that support healthcare professionals in applying the new or upgraded practices.

The main objectives of strengthening preservice education are to:

- build knowledge and appropriate attitudes concerning relevant public health programs and strategies;
- improve practical skills, particularly the application of evidence-based clinical guidelines; and
- prepare students to support and follow local guidelines and policies and to work within a national health system.

An essential element of a preservice education system is a faculty with effective teaching skills. This *Effective Teaching: A Guide for Educating Healthcare Providers* reference manual was written to help faculty members strengthen their teaching skills. The target audience for this manual is classroom and clinical faculty members in schools of medicine, nursing, and midwifery as well as other cadres of healthcare providers.

To strengthen the teaching skills of faculty and clinical instructors, two basic activities must occur. Teachers and clinical instructors must first acquire essential knowledge about classroom and clinical teaching skills. This information is presented in the reference manual. Faculty and clinical instructors must also have opportunities to practice their newly learned knowledge and skills in a safe environment while being observed and coached. Because of the difficulty of asking faculty members and clinical instructors to attend external courses, and given the range of knowledge and skills required, this reference manual is designed to be a component of an institution-based, self-study learning package. The other components of the package are a learner's guide and a facilitator's guide (for the individuals responsible for

implementing a faculty development or teaching skills program within their institution).

To implement this faculty development program, the following sequence of activities is recommended.

- Lead faculty, teachers, and/or clinical instructors (several per institution if possible) complete the self-study materials prior to, or as part of, an external teaching skills course.

- During the external teaching skills course, participants are given opportunities to practice essential teaching skills and then develop plans for implementing a faculty development or teaching skills program within their institutions.

- Lead faculty, teachers, and/or clinical instructors implement a faculty development or teaching skills program within their teaching institution for other faculty members and clinical instructors.

The faculty development program at each institution could be implemented in several ways:

- Faculty and clinical instructors work through the self-study materials and interact with the lead faculty as required. The lead faculty would be available to answer and discuss questions, review exercises, and then observe and coach the learners as they apply their new teaching skills in the classroom and/or clinic.

- The lead faculty members offer a series of seminars over an extended period of time. The seminars would focus on essential teaching skills, and the faculty and clinical instructors attending the seminars would work through their self-study materials. If possible, during these seminars the lead faculty would demonstrate skills and plan practice sessions. They would also observe and coach the learners as they apply their new skills in the classroom and/or clinic.

- Teachers and clinical instructors complete the self-study materials. The lead faculty members then conduct a 3- to 4-day teaching skills practice workshop. Lead faculty members also observe and coach learners as they apply their new skills in the classroom and/or clinic.

Please refer to the facilitator's guide for more information on implementing a faculty development program using this reference manual.

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MODULE ONE

FOUNDATIONS OF EDUCATING HEALTHCARE PROVIDERS

INTRODUCTION

Effective education offers a balance of theoretical and practical experiences to help learners develop competencies that are essential for their entering a healthcare profession and continuing to develop professionally throughout their careers. Education is intricately linked to social context. Broad social, cultural, historical, and political forces interrelate to form and shape teaching and learning, and thus the essential competencies that learners must develop.

Research in the field of education has shown that learners need an appropriate environment and a variety of learning activities that include opportunities to practice and receive feedback on their performance. Education is known to be more effective when expected outcomes build on existing knowledge, skills, and attitudes, are relevant to the future tasks of the healthcare provider, correspond to the health needs of a society, and are supported by policies and practices in governments and at healthcare facilities. Because the needs of healthcare consumers are diverse, education should focus on preparing healthcare providers who can function in a variety of roles, including the key roles of clinician, communicator, educator, counselor, administrator, and manager.

There are a number of challenges in designing educational programs for healthcare providers. Although they vary from institution to institution, common challenges are large numbers of students, limited opportunities for relevant practical experiences, and a growing amount of information that needs to be covered. This manual recognizes these common challenges and proposes a variety of practical approaches that educators who plan and conduct courses can use to improve the effectiveness of their teaching.

Main Objective

After completing this module, you will be able to describe the foundations of educating healthcare providers.

Supporting Objectives

To meet this objective, you will:

- Describe the guiding principles of educating healthcare providers

- Define core competencies and their role in curriculum development and design
- Recognize effective approaches to teaching and learning
- List the challenges in educating healthcare providers
- Describe how this manual can be used to improve learning

THE GUIDING PRINCIPLES OF EDUCATING HEALTHCARE PROVIDERS

Health status and healthcare are influenced by prevailing social, political, and economic realities. The education of healthcare providers must therefore address the priority health needs and problems within a society, identify national policies, guidelines, and standards that are relevant to those needs and problems, and define the expected role of healthcare providers. Because health systems evolve and adapt to the current and anticipated health needs of individuals and societies, and to continuing advances in knowledge and technology, healthcare providers who enter the profession this year may not be the same providers who are needed next year. Education must therefore produce practitioners who are able to identify and respond to the needs of the people they serve in order to provide high-quality, relevant, effective, and equitable services.

Education should prepare healthcare providers to function in the following key roles:

- **Caregivers**, who consider each patient holistically as an individual and as an integral part of a family and community, and provide high-quality, comprehensive, continual, and personalized care within a relationship based on trust
- **Decision-makers**, who choose interventions and technologies in an ethical and cost-effective way
- **Communicators**, who are able to ask appropriate questions, listen, advise, encourage, counsel, and educate individuals and groups to help them improve and protect their health
- **Community leaders**, who advocate for health and initiate health activities on behalf of the community

- **Managers**, who work effectively with colleagues, staff, and other organizations—and who collect, analyze, and use health data—to meet the health needs of individuals and communities

The professional development of healthcare providers is a continuum that begins with undergraduate education and continues well after graduation and throughout professional life. Continued professional development can be achieved in many different ways, through individual study and practice, post-graduate education, inservice training, or continuing education. Undergraduate education, therefore, has the dual task of preparing healthcare providers to enter professional practice as well as preparing them as life-long learners who continue learning and improving their practice throughout their professional careers. To satisfy these two important objectives, it is crucial for educators to carefully define a feasible set of core or essential competencies that graduates must achieve in an academic program.

An academic program is a series of courses that have both theoretical (e.g., classroom) and practical (e.g., skills practice in a simulated setting with anatomic models) components and are designed to prepare students in a specific category of healthcare provider. Academic programs typically involve several years of study, allowing time and opportunities for learners to develop essential competencies that encompass essential knowledge, skills, values, and behaviors. These competencies should include a solid base in a number of areas that cross all disciplines, such as interpersonal communication, decision-making, and management, as well as subjects that are specific to the category of healthcare provider. Upon successful completion of an academic program, graduates normally receive a degree, certificate, or other type of formal diploma. In most countries, graduates must also pass a national examination to receive a license or certificate that allows them to begin professional practice. A national licensing body outside of the teaching institution often administers this examination, although in some countries the teaching institutions may administer it.

Core Competencies

Core or essential competencies are the aspects of a subject or discipline that are common to all students, essential to practice, and essential to master in order to graduate from an academic program and enter into professional practice. For example, one of the core competencies required of a physician may be to "perform a pelvic examination." When defining core or essential competencies, the educators of healthcare providers should remember three critical facts: healthcare should be dynamic and responsive to societal needs and changes; healthcare continually evolves with advances in healthcare knowledge and technology; and healthcare providers must fulfill multiple roles.

Students progress through an academic program by units, levels, or other predefined steps. Each of these intermediate steps has outcome competencies that are based on the expected core competencies of the overall academic program. Within each intermediate step, courses are designed with discrete outcome competencies (i.e., course and supporting objectives) that are based on the outcome competencies for the unit, level, or step. Course outcome competencies include cognitive (knowledge), psychomotor (skills), and affective (values and behaviors) domains that are observable and can be appraised.

When defining core competencies for an academic program, it is important to ask the following:

- **What is the job description for the position the student may hold after graduation?** Refer to appropriate job descriptions prepared by relevant national authorities or employers. The key information is the list of responsibilities, duties, or functions. Some job descriptions are precise, detailed, and useful. Others tend to be rather vague. What knowledge, skills, and attitudes do students have to develop to fulfill the job description?

- **What knowledge, skills, and attitudes are experienced health professionals in that cadre applying in the workplace?** Visit existing employers and health professionals for guidance in determining what students should know and be able to do after completing the academic program. If job descriptions are out-of-date or not well designed, there may be a difference between the job description and the actual knowledge, skills, and attitudes applied by health professionals. It is important to be aware of this kind of discrepancy when identifying core competencies.

- **What are the licensing requirements in the related field?** What does the student need to learn and be able to do to meet licensing requirements and demonstrate competency?

Figure 1-1 lists some examples of core competencies for good midwifery practice.

Figure 1-1. Example of Core Competencies for Midwifery Practice

Midwives provide:

- High-quality, culturally sensitive health education and family planning services in the community in order to promote healthy family life, planned pregnancies, and positive parenting
- High-quality antenatal care to maximize the woman's health during pregnancy, detect early and treat any complications that may arise, and refer if specialist attention is required
- High-quality, culturally sensitive care during labor, including conducting a clean, safe delivery, giving immediate care to the newborn, and managing emergencies effectively to prevent maternal and newborn mortality and morbidity
- Comprehensive, high-quality, culturally sensitive postpartum care for women

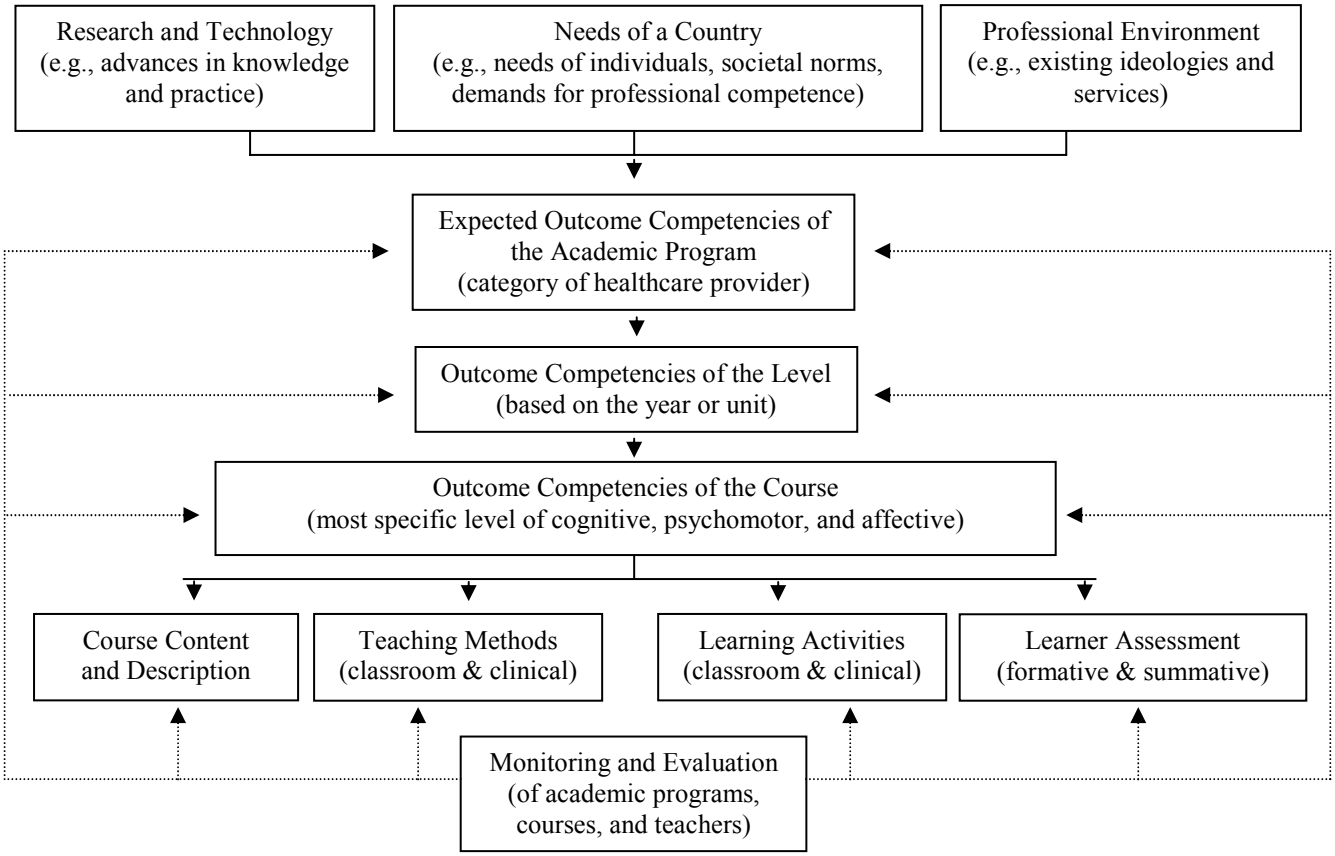
Core or essential competencies determine the content, teaching methods, materials, and student assessment strategies needed for an individual course. Although you may not be involved in defining core competencies for an academic program, you will be responsible for ensuring that your course offers the theory and practical experiences needed to achieve the identified competencies for the program.

Curriculum Development and Design

Curriculum can be defined as the totality of learning activities that are designed to achieve specific educational outcomes (Bevis 1982). The term curriculum can refer to both a written document and the actual practice of implementing an academic program. Each curriculum is unique and based on the healthcare needs of the population it is designed to serve. Neither a written nor practiced curriculum is static; it must be flexible enough to incorporate changing healthcare needs and an emerging evidence base. In addition, it should be regularly revised based on ongoing monitoring of individual courses and occasional evaluation of the overall academic program.

Curriculum development and revision is a systematic, logical, and dynamic process for achieving organized learning. It enables educators to articulate the characteristics of the graduates and the curriculum design, as well as the content, teaching methods, assessment of students' achievement, and program evaluation. **Curriculum design** is the organization and sequencing of course requirements and learning experiences that make up the total academic program. All curriculum designs are concerned with learners, subject matter, and educational processes (Thompson, Kershbaumer, and Krisman-Scott 2001). The key to good curriculum or course design is to forge logical links among desired outcomes (e.g., core competencies, course and supporting objectives), teaching and learning methods, and the assessment of students' learning. **Figure 1-2** illustrates the curriculum development and design process.

Figure 1-2. Curriculum Development and Design



It is at the course level that critical decisions are made about what content must be included, and excluded, to enable learners to attain the desired competencies. The course outcome competencies determine the content as well as the methods used for teaching and assessment of students' achievement. In other words, teaching methods, learning activities, and assessment strategies are a means to enhance the outcomes of teaching and learning. The methods developed for teaching and assessment determine the materials and tools needed to teach and assess students' achievement. The selection of methods for both teaching and assessing students' achievement cannot be left to chance, but must be based on the competencies to be attained and the needs of individual learners.

EFFECTIVE APPROACHES TO TEACHING AND LEARNING

To some educational theorists, the process of teaching and learning (i.e., pedagogy) is a science that should be underpinned by research and experimentation. To others, it is an art that involves a constant exchange between knowledge and action. Although some people may be natural teachers, it is generally agreed that effective teaching is a learned rather than an innate ability. Regardless of

whether teaching is viewed as science or art, learned or innate, a number of universal concepts and principles have emerged through educational research that can be observed and applied in real-life settings. This section describes concepts and principles that are most relevant for educating healthcare providers.

Teaching can be defined as the conscious manipulation of the students' environment in a way that allows their activities to contribute to their development as people and clinicians. Learning can be defined as a change in behavior, perceptions, insights, attitudes, or any combination of these that can be repeated when the need is aroused. Learning takes place in each person's head. People learn for themselves; no one can do it for them. Good teaching supports learning. Even though formal teaching is not required for learning to take place, learning is clearly the expected goal of teaching (Thompson, Kershbaumer, and Krisman-Scott 2001).

Effective teaching considers how students learn best. For example, some students learn better through listening, others by reading, and still others by viewing and doing something at the same time. Students can be more effective learners if they are aware of their preferred learning style. Although it is impossible to accommodate the individual learning styles of an entire group of students, it is feasible to engage students in a variety of learning activities: to listen, look at visual aids, ask questions, simulate situations, read, write, practice with equipment, and discuss critical issues.

Table 1-1 lists some common teaching methods and the percentage of information recalled by students after 3 hours and after 3 days. These results confirm that students retain more information when a combination of teaching methods is used (e.g., verbal, written, and visual), and recall even more when they are actively involved in learning (e.g., through role play, case study, practice).

Table 1-1. Learning Recall Related to Type of Teaching Activity

TYPE OF TEACHING ACTIVITY	PERCENTAGE OF MATERIAL RECALLED	
	After 3 Hours	After 3 Days
Verbal (one-way) lecture	25%	10–20%
Written (reading)	72%	10%
Visual and verbal (illustrated lecture)	80%	65%
Participatory (role play, case study, practice, etc.)	90%	70%

Adapted from: Dale 1969.

In general, teaching and learning are more effective when:

- Students are ready and want to learn.
- Students are aware of what they need to learn (i.e., there are clear learning objectives or expected outcomes).
- New knowledge, skills, and attitudes build on what students already know or have experienced.
- Students are active and participate in their learning.
- Students are encouraged to apply critical thinking and alternative approaches supported by sound reasons.
- New knowledge, skills, and attitudes are realistic, relevant, and can be put to immediate use.
- New knowledge, skills, and attitudes are demonstrated to students, applied by students, and integrated into the students' world.
- Numerous opportunities are given for students to practice both ideas and skills, and to receive feedback on their performance through self-, peer, or teacher assessment.
- Feedback to students on their performance is immediate, constructive, and nonjudgmental.
- Teaching is interesting, pleasant, and exciting.
- A variety of teaching methods and techniques is used.
- Teaching moves step-by-step from simple to complex, and is organized, logical, and practical.
- Ideas and concepts are presented clearly, alternative explanations are presented, and teachers check frequently for students' understanding.
- The learning environment is realistic, relevant, and one of trust, mutual respect, relative calm, helpfulness, freedom of expression, and acceptance of different opinions and approaches.

Teachers need to give students good reasons for learning, help them define what they need to learn, help them organize and make sense of what they should learn, ensure that students participate and are involved, make the learning environment interesting and pleasant, give students plenty of practice, and let them know how they are progressing.

When preparing for teaching, be aware of the following approaches to teaching and learning. You will notice that several of the concepts and principles listed above appear repeatedly in the approaches described below.

Adult Learning

Knowles (1984) suggested that because adults or older students come to the learning experience with a vast amount of previous knowledge and experience, the usual methods of teaching are inappropriate. Instead, the learner should be allowed to be self-directed, even so far as helping to formulate the curriculum. Knowles's theory presented a new approach to education that has become one of the best known in the field.

The implications of adult learning for teachers are:

- Students should be respected for their previous experiences.
- A spirit of mutual cooperation should exist between the teacher and students.
- Teachers should assist students to self-diagnose their learning needs.
- Students should be involved in planning how their learning needs will be met.
- The teacher is a guide who helps students learn, rather than an instructor in charge of knowledge.
- Teachers assist students to assess the progress they are making toward their goals.
- Both teachers and students evaluate a course or academic program.

The types of learning experiences that have more meaning for the adult learner include group discussions, case studies, simulations, role plays, and seminars that tap into the students' reservoir of experience. In addition, helping to plan for the application of

learning will have significant meaning for adult learners (Thompson, Kershbaumer, and Krisman-Scott 2001).

Participatory Learning

Participatory learning is an aspect of adult learning theory. It is an interactive approach to learning that is based on real-life experiences, incorporates dialogue among teachers and students, and critically analyzes the structural, organizational, and systemic causes of problems. Its goals are not only to build knowledge, skills, and attitudes, but also to provide the basis for solving problems after the course or academic program has ended.

The application of participatory learning should include activities that help students develop critical thinking, practice problem solving and decision-making, and gain confidence in taking effective actions in the field. Participatory learning can be integrated into sessions as short as 1 hour. In addition to using a variety of teaching methods, teachers should try to set up a physical environment that is conducive to active participation. This means arranging students in a way that allows maximum interaction. In large lecture halls, this may be difficult. However, students can be asked to form pairs or groups (Sims and Weinger 1995).

Deep Learning

Entwistle (1988) described an approach to learning, called **deep learning**, in which students undertake an active search for meaning in order to understand and apply what they learned. He explained that superficial reading of text does not guarantee that what is read, and even understood, will be retained in the long-term memory. All the evidence regarding how students approach learning, together with the understanding of how knowledge is built, suggests that students need to construct their own knowledge, build on their existing knowledge, and find relevance and meaning in the process. Students must develop the practice of reflecting on the subject matter, connecting it with what they already know, and summarizing new learning in their own words. Relevance and meaning are found through trying to make connections between the ideas that are being encountered and the real world of practice.

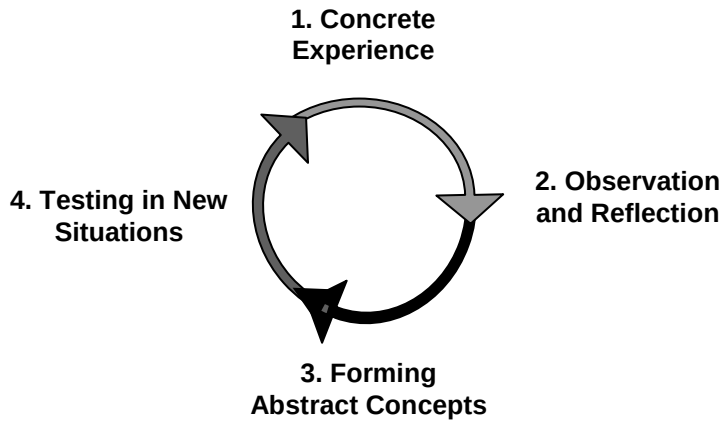
Few would disagree that students of medicine, nursing, and other health professions should apply a deep approach to learning. However, many curricula are planned and implemented in ways that promote **surface learning**, in which the learner undertakes rote learning with little understanding, and relies on memory for reproducing what is learned. The reflective process involved in the deep approach to learning may be more time-consuming, but it leads to longer retention of learning. Reflection can be promoted by practicing both cognitive and psychomotor skills through the steps of demonstration, practice, and feedback on performance. Other effective ways to encourage reflection are writing essays, discussing with peers, teaching others, and answering questions. Teachers have an important role to play in this process, because

they must develop assignments that compel students to reflect on their learning. Such reflection is encouraged when students are required to apply their new learning to problems and situations that they have not encountered before (Bandaranayake 2001).

Experiential Learning

Experiential learning is very closely linked to the deep learning approach. **Experiential learning** involves having an experience, reflecting or reviewing the experience, giving it meaning and learning from it, and then applying the learning (Kolb 1984). Experiential learning emphasizes the importance of critical reflection in learning. The process is useful for developing both cognitive and psychomotor skills. It is also useful for exploring and clarifying values, attitudes, and feelings. **Figure 1-3** illustrates the experiential learning cycle.

Figure 1-3. Experiential Learning Cycle



The experiential learning cycle can begin at any one of the four points illustrated above. In addition, the process may be repeated, using the application and review of learning as the concrete experience that will be reflected upon, abstracted, and applied in the next cycle.

Each point in the cycle can be further described as follows:

- The process begins with a student **carrying out a particular action** (concrete experience). The engaged student is usually not reflecting on the task at this time but rather just carrying it out. The step can use a new experience or the student's past experience. This helps to ensure that the student is actively involved.

- The second step (observation and reflection) is to understand the effects of the action in the particular instance and anticipate what would follow from the action if it were to be taken again under the same circumstances. **Reflection** involves stepping back from the task and reviewing what has been done and

experienced. The skills of paying attention and noticing differences help to identify subtle events. A student's values, attitudes, and beliefs will influence whether the student can differentiate among certain events.

- The third step (forming abstract concepts) involves understanding the general principle under which the particular instance falls. **Conceptualization** involves interpreting the events that have been noticed and understanding the relationships among them. It is at this stage that learning theory may be particularly helpful as a template for framing and explaining events.

- When the general principle is understood, the process moves on to **application and review through action in a new circumstance** (testing in new situations). The experience can be tested and reviewed individually or with a group. Review may involve feedback from a teacher or peers. Or students may assess their own progress. Group involvement enables peer learning and greater understanding to develop through the discussion process.

Teachers can facilitate experiential learning by giving students opportunities to participate actively in reflecting and reviewing experiences and events, and encouraging them to engage in experimentation and new experiences. They can encourage students to reflect on their learning by asking students to do such things as discuss what they have learned with other students, answer open-ended questions, and expand on or summarize information and experiences.

Problem-Based Learning

Problem-based learning is an opportunity to ensure that education is appropriately matched with real-life needs. It enables learners to acquire competence in using essential information in the decision-making process for the analysis and solution of problems. The objective is to prepare healthcare providers to think critically, to make informed decisions, and to assume responsibility for sound practices (Barrows 1990; Barrows and Tamblyn 1980). Problem-based learning can serve as the core method of teaching, or it can supplement other teaching. In addition to exploring basic scientific and clinical mechanisms, the approach can also be used to address social, psychological, ethical, or professional issues. A problem stimulates students to reason, think critically, and weigh evidence. They seek out and share relevant information. They practice the language of science and healthcare, evaluate ideas, and receive feedback from peers and teachers. If clinical exposure is introduced at the same time, intellectual and practical skills develop in parallel.

Problem-based learning prepares students for professional practice in the following ways:

- Encourages independence as they identify and meet individual learning needs
- Stimulates reflection and self-direction for life-long learning
- Supports ongoing self-assessment
- Introduces clinical reasoning, later refined with clinical experience
- Enhances critical thinking and evidence-based decision-making
- Ensures that knowledge is transferred, applied, and retained by provision of a relevant, integrated context
- Offers practice and experience in introducing professional concepts and clinical language
- Supports effective teamwork and peer communication

Problem-based exercises present students with a realistic situation or case that incorporates the problems to be addressed but does not provide the solutions. The approach requires students to consider a problem as they would have to do in real life, to use both facts and judgment to analyze its causes, and to propose strategies to resolve it. In the course of problem solving, students decide themselves what information they need, and how and where to obtain it. Students work in groups to examine the issues, concepts, and principles contained within the problem. Individual work outside the group develops skills such as retrieving literature, appraising information critically, and seeking opinions of peers and specialists. Effective teachers using problem-based learning do not dominate or instruct. Instead, they serve as facilitators or moderators. Although not every detail about a situation should be specified, enough information should be provided to outline the basic problems or issues to be dealt with. Students should be encouraged to improvise on the details, calling on their own experiences to make them realistic.

Well-designed problems are based on a structure for reasoning that is explicit to teachers and students, and typically apply the following sequence:

- A trigger initiates the problem (e.g., on video, paper, or computer, in a role play, in the clinic).
- Groups brainstorm to identify cues and key issues.
- Broad thinking generates a rich array of possible explanations or mechanisms for addressing the problem.
- Hypotheses are critically explored through reasoning and organized by priority or likelihood.
- Hypotheses are tested and refuted or supported by further information sought from the teacher or progressively revealed.
- A conclusion is reached on diagnosis, management, or another type of solution to the problem.
- The group reviews the process (Sefton 2001).

Mastery Learning

The mastery learning approach is competency-based, humanistic, and uses continual assessment. It is "learning by doing" that concentrates on the specific knowledge, skills, and attitudes needed to carry out a procedure or activity. Competence refers to what a person can do under ideal circumstances, whereas performance refers to what is actually done under existing circumstances (Wood 1987). Students' achievement, rather than what facts the students have memorized, is the focus of mastery learning. The approach is humanistic because students practice first in simulated environments before working with real patients. For example, students practice counseling using role plays before working with patients. Or students demonstrate competency in general physical examination with an anatomic model before working with patients. Students are continually and periodically assessed for competence. The approach is based on adult learning principles, which means that learning is student-centered, interactive, relevant, and practical.

Life-Long Learning

In most areas of science, knowledge grows exponentially, and healthcare is no exception. The education of healthcare providers is a continuum, which starts at entry into an academic program and ends with cessation of professional practice. Only a relatively small, though important, part of this continuum takes place in undergraduate education. It is therefore imperative for students to develop sound learning habits that will remain with them throughout their professional life. This includes both deciding what needs to be learned and how to learn it. Learning can take place through literature review, consultation with colleagues,

professional publications, seminars, and formal continuing education programs (Bandaranayake 2001).

THE CHALLENGES IN EDUCATING HEALTHCARE PROVIDERS

The most important challenge in the education of healthcare providers today is the problem of information overload. Undergraduate students cannot learn everything or develop competency in more advanced skills because there is so much content to be covered. Adding competencies to an academic program means that other portions of the program must be reduced or removed, or that the time required to complete the program must be increased. For this reason, the concepts of core competencies, core curriculum, and life-long learning have been introduced in this module to help focus teaching on the essential competencies expected of all students.

In addition to the continually expanding knowledge base, educators frequently must contend with:

- Large numbers of students and insufficient numbers of teaching staff, making it difficult to use interactive teaching methods such as case studies, role plays, discussions, and drills

- Limited opportunities for students to practice and master skills, particularly in simulated settings, before moving to clinical rotations

- Poor monitoring of students' progress in both theoretical and practical components, leading to limited opportunities for providing feedback to students to help them improve

- Facilities used for clinical practice that are not always representative of the facilities, such as outpatient clinics, where graduates will work

- The need to develop competencies that are difficult to teach, such as decision-making, problem solving, ethics, and values

- The difference between the ideal world, where all resources and technology needed to manage patients are available, and the real world, where resources and technology are scarce and must be used in a rationale manner

- Poor quality materials and equipment, and limited access to computers and up-to-date reference manuals or textbooks

- Little coordination between different teaching units and different levels of study, and between theoretical and practical portions of academic programs

- Practical experiences that are separated from, and do not always reflect, the associated theoretical experiences

- High turnover of teaching staff

- Teachers who have no formal training in educational theories or methodologies

- Lack of incentives for teachers to improve their own performance

HOW THIS MANUAL CAN BE USED TO IMPROVE LEARNING

Although education has its challenges, there are still ways to work within existing resources, structures, and systems to improve teaching. Read on to see how you can use this manual as a tool to help you apply effective approaches to teaching and learning.

This manual describes a process for planning and conducting effective teaching that looks something like this:

- A **syllabus** is developed that defines the learning objectives, summarizes learning activities, informs the students of expectations for achievement, and describes the methods of assessment that will be used. Appropriate content, learning activities, and teaching and learning materials are identified or developed to reinforce the learning objectives.

- **Knowledge, skills, and attitudes** are introduced using interactive teaching methods.

- **Students practice integrating knowledge, skills, and attitudes** during practice sessions in the classroom, simulated practice environment, or clinic. Practice may include group teaching methods such as case studies, role plays, clinical simulations, and supervised clinical practice.

- **Students are regularly assessed and given feedback to help them improve their performance.**

- **Teachers monitor their courses and revise their teaching in order to improve learning.**

The modules within this manual focus on the basic competencies you need to apply the process described above. It is recommended that, regardless of your interests, you become familiar with the content of Modules One, Two, and Three. Depending on your interests and needs as a teacher, you may choose to study all of the other modules, or a selected few. For example, you may select certain modules to improve your interactive presentation skills, strengthen coordination between the classroom and clinical practice site, use assessments to improve students' competence, and monitor the effectiveness of your teaching. Job aids are provided at the end of each module to help you apply the concepts to your teaching. **Table 1-2** lists the competencies developed in each module.

SUMMARY

Effective undergraduate education should offer a balance of theoretical and practical experiences to help learners develop the competencies they need to enter professional practice and to become life-long learners throughout their careers. These core or essential competencies are the aspects of a subject that are common to all students, essential to their practice, and essential to be mastered in order to graduate and entire into their profession. A good curriculum or course design forges logical links among the core competencies, course and supporting objectives, teaching and learning methods, and assessment of students' learning.

There are a variety of approaches to teaching and learning that you can use effectively in educating healthcare providers. You should become familiar with the concepts of adult learning, participatory learning, deep learning, experiential learning, problem-based learning, mastery learning, and life-long learning, and their implications in the teaching of healthcare providers. You should also be prepared to deal with some of the common challenges in educating healthcare providers, including the problems of information overload for students, insufficient numbers and high turnover of teaching staff, limited opportunities and inadequate facilities for practice, and uneven quality of materials and equipment.

Table 1-2. Competencies Developed in Each Module

MODULE	COMPETENCIES DEVELOPED
Module 1: Foundations of Educating Healthcare Providers	• Describe guiding principles of educating healthcare providers • Define core competencies and their role in curriculum development and design • Recognize effective approaches to teaching and learning • List the challenges in educating healthcare providers • Describe how this manual can be used to improve learning
Module 2: Develop Objectives for Learning	• Identify the knowledge, skills, and attitudes to be learned in your course • Write course objectives • Write supporting objectives
Module 3: Plan for Teaching	• Develop a course syllabus • Plan for student assessment • Select teaching methods • Select and adapt learning materials • Develop a course schedule
Module 4: Prepare the Teaching Environment	• Prepare the classroom environment • Prepare for practice in a simulated environment • Select sites for clinical practice • Prepare the clinical practice environment
Module 5: Prepare and Use Visual Aids	• Use a writing board • Use a flipchart • Prepare and use transparencies • Prepare and use slides • Use video • Use a computer to prepare and project a presentation
Module 6: Prepare and Deliver Interactive Presentations	• Plan a presentation • Introduce a presentation • Use effective presentation skills • Use questioning techniques during a presentation • Summarize a presentation
Module 7: Facilitate Group Learning	• Select, plan, and facilitate group learning activities • Create and facilitate a role play • Create and facilitate a case study • Create and facilitate a clinical simulation • Facilitate a brainstorming session • Facilitate a discussion

MODULE	COMPETENCIES DEVELOPED
Module 8: Facilitate Development of Healthcare Delivery Skills	• List the steps of skills development • Develop and use competency-based learning tools • Introduce and demonstrate a skill • Facilitate skills practice and give feedback
Module 9: Manage Clinical Practice	• Select and prepare clinical instructors and staff • Coordinate clinical practice • Conduct clinical practice sessions • Monitor students' progress
Module 10: Prepare and Use Knowledge Assessments	• Select methods for assessing students' knowledge • Prepare knowledge assessments • Develop questions for objective written examinations • Administer and score knowledge assessments • Use assessment results to improve performance
Module 11: Prepare and Use Skills Assessments	• Select methods for assessing the skills of students • Prepare skills assessments • Develop structured practical examinations • Administer and score skills assessments • Use results to improve performance
Module 12: Monitor and Revise Teaching	• Describe how to monitor teaching • List ways to contribute to broader evaluations • Explain how to review and revise teaching

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MODULE ONE JOB AID:
HOW TO USE THE MODULES IN THIS MANUAL

Get Ready to Teach

Module 1: Foundations of Educating Healthcare Providers	Module 2: Develop Objectives for Learning	Module 3: Plan for Teaching	Module 4: Prepare the Teaching Environment

Build Knowledge, Skills, and Attitudes in the Classroom, Simulated Practice Environment, and Clinical Practice Site

Module 5: Prepare and Use Visual Aids	Module 6: Prepare and Deliver Interactive Presentations	Module 7: Facilitate Group Learning	Module 8: Facilitate Development of Healthcare Delivery Skills	Module 9: Manage Clinical Practice

Assess Students' Knowledge and Skills (including demonstrated attitudes)

Module 10: Prepare and Use Knowledge Assessments	Module 11: Prepare and Use Skills Assessments

Monitor and Revise Teaching

Module 12: Monitor and Revise Teaching

MODULE TWO

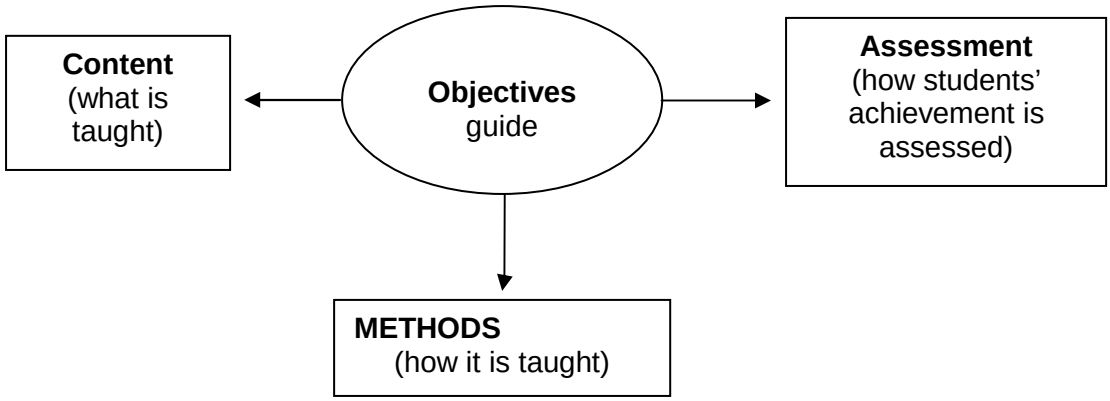
DEVELOP OBJECTIVES FOR LEARNING

INTRODUCTION

The courses taught within an academic program are based upon the core competencies required of healthcare providers in the field. As a teacher, you are responsible for designing your course so that students acquire the knowledge and develop the skills and attitudes related to one or more of the core competencies for the academic program. Where do you begin? What do you do first to design your course? The development of precise and measurable objectives is the first step in designing your course.

Objectives are statements that describe what the students will know and be able to do after completing your course. Your students are very interested in the objectives—they want to know what they are going to learn. Clear objectives help you determine the course content, decide how you will teach the course, and identify how students' learning should be assessed. The development of clear, concise, and measurable learning objectives is a critical step in planning your course. **Figure 2-1** illustrates how objectives guide the teaching process by forming the basis for content, methods, and student assessment.

Figure 2-1. How Objectives Guide Teaching



Main Objective After completing this module, you will be able to develop objectives for learning.

Supporting Objectives

To meet this objective, you will:

- Identify the knowledge, skills, and attitudes to be learned in your course
- Write course objectives
- Write supporting objectives

IDENTIFY THE KNOWLEDGE, SKILLS, AND ATTITUDES TO BE LEARNED IN YOUR COURSE

Learning occurs in three different areas or domains:

- Knowledge: What we know (also known as the cognitive learning domain)
- Skills: What we do or perform (also known as the psychomotor learning domain)
- Attitudes: How we feel about what we know and do (also known as the affective learning domain)

Below are some examples of objectives for each area of learning:

Knowledge Objectives:

- Explain why adolescents are at increased risk of sexually transmitted infections (STIs)
- List the nutritional needs of infants younger than 6 months old
- Identify general benefits of breastfeeding
- Identify the signs and symptoms of pregnancy-induced hypertension

Skill Objectives:

- Assess a sick child for common serious illnesses and malnutrition
- Insert an IUD
- Perform a pelvic examination
- Perform a full antenatal examination on a pregnant woman
- Demonstrate the ability to assess breastfeeding attachment

Attitudinal Objectives:

- Demonstrate a willingness to maintain confidentiality in interactions with adolescent patients
- Counsel patients about sexual risk reduction

using nonjudgmental language (both verbal and non-verbal)

- Obtain a relevant and comprehensive history in a sensitive and friendly manner, assuring the woman of confidentiality

Meeting **knowledge objectives** requires understanding and processing facts, and also often requires recalling information and solving problems. **Skill objectives** refer to the acquisition of skills or the ability to perform procedures. **Attitudinal objectives** deal with opinions or feelings.

The previous module on *Foundations of Educating Healthcare Providers* discussed the way courses support an academic program. Consider the course you are designing or teaching and ask yourself, "Which core competencies of the academic program should be addressed in this course?" "What should the student know or be able to do in relation to those competencies after completing this course?" "What do students need to know about values, morals, ethics, clinical decision-making, problem solving, and communications?" The answers to these questions will help determine the learning objectives for the course.

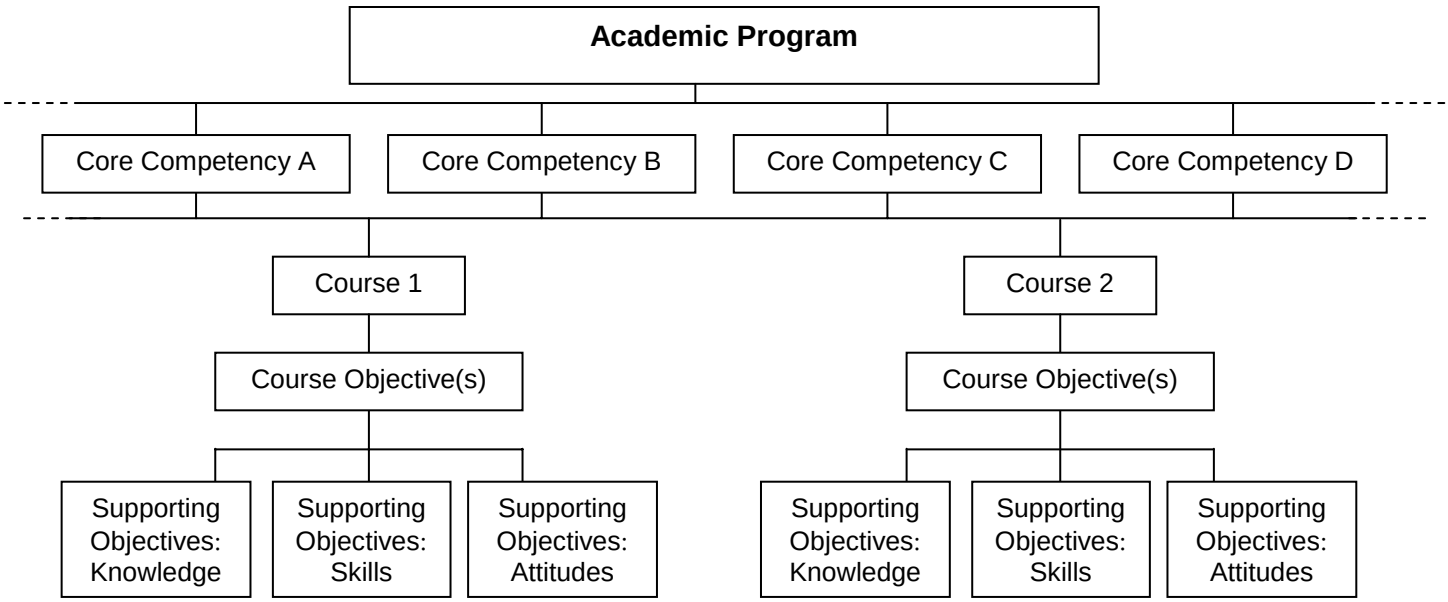
If you, a previous teacher, or your institution's administration have already written learning objectives, review them to be sure they accurately reflect the core competencies for the academic program, the course aim, and the related job and licensing requirements. If learning objectives have not already been written, use the information in this module to identify and write your learning objectives. You will write objectives for both the classroom and practical portions of the course. These objectives will guide your selection of methods and materials for teaching, learning, and student assessment.

Objectives are usually written at two levels: course and supporting. Every course should have at least one **course objective**. A course objective—also known as a main objective, primary objective, or course aim—describes in broad terms what students should know and be able to do after completing the entire course. A course may have one or several course objectives. Course objectives often encompass knowledge, skill, and attitude areas or domains, and should relate to one or more of the core competencies for the overall academic program.

A course objective can be achieved by meeting a series of **supporting objectives**. Supporting objectives—also known as secondary, specific, instructional, or enabling objectives—describe the specific knowledge, skills, and attitudes that students must master to achieve each course objective. **Figure 2-2** shows the relationship among core competencies for an academic program,

and the course and supporting objectives for individual courses within an academic program.

Figure 2-2. Relationships between Core Competencies, Course Objectives, and Supporting Objectives



A course will always have supporting objectives for knowledge. These are the supporting objectives that students achieve through learning methods such as classroom presentations, reading assignments, discussions, and exercises. In addition, many courses will also have supporting objectives for skills and attitudes. When students achieve all of the supporting objectives, they have also achieved the course objective(s). When students achieve the course objective(s), they have developed all or part of one or more of the core competencies for the academic program. And when students complete all of the courses within an academic program, they have achieved all of the core competencies for that program.

It is important to write concise, specific course and supporting objectives because they determine how students will be taught and assessed. Then select appropriate methods and materials for teaching, learning, and student assessment that will help students meet the course objectives.

WRITE COURSE OBJECTIVES

As shown in **Figure 2-2**, course objectives relate directly to the core competencies required for an academic program. A course objective is fairly broad and may encompass knowledge, skill, and attitude components. Consider the following course objective.

> After completing this course, the student will be able to assess, classify, and treat a sick child in an effective and integrated manner.

Assessing, classifying, and treating a sick child will clearly involve specific knowledge. The student must also be able to perform specific skills. And the interaction and communication with the sick child and family members will require certain attitudes. Note also that this course objective clearly indicates that the student will be able to treat a sick child, not just "know" how to do this. This means that the student must have access to sick children during the course in order to demonstrate competence. From the teacher's perspective, course objectives provide a great deal of information about what will be taught during the course. From the students' perspective, course objectives provide a clear picture of what they should know and be able to do when they complete the course.

Each course objective should include the following three pieces of information:

- **When to demonstrate the knowledge or perform the skill.** Course objectives should specify when the student should demonstrate the expected level of knowledge or skill. The objective of this module begins with "After completing this module…." Other examples include: "After completing this course," "After completing this clinical rotation," and "After completing this lesson."

- **Who will demonstrate competency.** The course objective states the person who will demonstrate competency. This will usually be the "student."

- **What will be demonstrated.** This is the heart of the course objective. It describes the knowledge, skills, and attitudes the student is expected to acquire during the course. These statements are based on the main topics being presented throughout the course. You may also base these statements on textbook content, specific assignments, or core competencies the student will acquire and demonstrate during your course. The statement should begin with an action word, for example:

    - **Assist** with a normal childbirth
    - **Assess and classify** the sick child
    - **Administer** the chosen family planning method
    - **Provide** counseling and testing services for people with HIV/AIDS

The following example includes all three components of a course objective. Each component is in **bold**:

***Example*: After completing this course**, the **student** will be able to **assist with a normal childbirth.**

In addition to its three basic components, a course objective may or may not include an evaluation criterion. This is a description of **how well the performance must be demonstrated**, or the performance standard. This evaluation component is known as the objective's **standard** or **criterion** of performance. In any given area, expect that there will be some skills in which students should show a high degree of competence and others with which they may show only familiarity.

Consider these examples of standards:

- According to the standards presented in the course materials
- According to the clinical protocol or checklist
- With at least 97 percent accuracy

Example: After completing this course, the student will be able to assist with a normal birth **according to the checklist for normal childbirth**.

Many of the course objectives you write will **not** contain criterion statements, because overall assessment criteria and methods are often presented in the syllabus. Refer to the example of assessment criteria in the syllabus in *Plan for Teaching*.

WRITE SUPPORTING OBJECTIVES

As noted earlier, supporting objectives outline the knowledge, skills, and attitudes a student must master to achieve a course objective. Supporting objectives are used to determine the content of the course, the teaching methods and materials needed to deliver the content, and the methods and materials to assess the competency of students.

The format for writing supporting objectives is quite simple. Review the supporting objectives at the beginning of this module and you will see that they are short and clear. There are two basic components that make up supporting objectives:

- **Specific action to be taken.** The specific action describes what the students must do to demonstrate competence. Common action verbs for learning objectives are shown below in **Table 2-1**. The table also includes words or expressions to avoid because they are open to interpretation and are difficult to measure.

Table 2-1. Action Verbs for Learning Objectives

KNOWLEDGE AREA	SKILL AREA	ATTITUDE AREA	WORDS TO AVOID
Adopt, analyze, categorize, classify, compare, compile, contrast, describe, devise, differentiate, discriminate, estimate, evaluate, explain, interpret, list, organize, predict, recognize, show, solve, summarize, tabulate	Adjust, arrange, assemble, demonstrate, follow, identify, insert, inspect, locate, model, organize, perform, place, point to, practice, prepare, remove, sort	Accept, ask, assist, attend to, choose, comply, conform, contribute, cooperate, defend, demonstrate, display, follow, help, initiate, join, listen, observe, participate, practice, propose, report, share, suggest, support, use	Appreciate, believe, internalize, know, realize, understand

- **Object of the action.** The object of the action is the specific information, skill, or attitude the students are expected to know or demonstrate to meet the course objective. Following are some examples of supporting objectives.
    - Label a diagram with the organs of the male and female reproductive systems
    - List the signs of correct positioning and attachment for breastfeeding
    - Describe how to counsel an adolescent about STIs
    - Demonstrate how to put a condom on a penis model
    - Identify the signs and symptoms for each severe classification in the Integrated Management of Childhood Illness (IMCI) clinical guidelines

The action verbs you select for your supporting objectives have a direct link to the assessment methods you will use to determine whether students have achieved the supporting objectives. For example, if the supporting objective states: "Demonstrate how to give a Depo-Provera® injection," the students will be expected to give the injection. If the objective is written as "Select correct statements concerning the Depo-Provera injection," the students would need to correctly answer a series of questions about the process. If both of these were listed as supporting objectives, the students would be expected to do both in order to demonstrate achievement of the objectives.

As you will see in *Plan for Teaching*, the supporting objectives will be used to select student assessment methods. If you have 40 students in a course and 10 of your supporting objectives require that you directly observe and assess the students' competence, you will be making 400 observations! Clearly, you will need to make some decisions as you develop your supporting objectives. Answering the following questions will help you to determine the number of knowledge, skill, and attitude objectives you will have for your course:

- How many students are in your course?
- Is there a practical component of your course (i.e., development of skills in a simulation lab, working with patients in a clinical setting)?
- Are there other teachers or advanced students who can assist with skills demonstrations and skills practice sessions?
- Are there other teachers who can assist with administering knowledge and skills assessments?
- Are there clinical instructors or preceptors who can assist with skills demonstrations, practice, and assessments during clinical rotations?

Answering these and similar questions will help you finalize the supporting objectives for knowledge, skills, and attitudes for your course. Also, as you complete *Plan for Teaching*, you will find that you are reviewing and revising your supporting objectives.

Organize Supporting Objectives

After you have written the supporting objectives for a course objective, **place the objectives in an appropriate order**. What is best to teach when? Ask yourself, "What is the first thing the students will need to know or do to begin to meet the course objective? What is the second? The third?" Remember that the order of the objectives will be similar to the order that you use to teach the content during your course. Think carefully about the specific order used for organizing the supporting objectives. Options include:

- **Simple to complex**—Begin with simple objectives and move on to more complex objectives (the way information is often presented in a textbook).

- **Performance order**—Place the learning objectives in the order in which the skills would be performed on the job (as in the steps to perform a medical procedure or test).

- **Related objectives**—Combine related objectives (such as counseling and family planning administration) so that the information given builds on the previous sessions.

Sample 2-1 shows a course objective for a family planning course and the associated supporting objectives. **Sample 2-2** shows an example of course and supporting objectives for a clinical rotation within a 3-month course on pediatrics.

Sample 2-1. Sample Core Competency and Objectives for a Family Planning Course

Core Competency (Bachelor of Nursing [BN] Program)

Nurses provide comprehensive, high-quality, culturally sensitive family planning services.

Course Objective

After completion of this course, the student will be able to counsel patients about family planning methods and reduction of risk for STIs; assess, screen, and educate patients regarding family planning usage; and provide temporary methods such as condoms, injectables, and oral contraceptives and manage any side effects or complications.

Supporting Objectives

To meet this objective, students will:

1. Use effective communication techniques when counseling patients
2. Counsel patients about STI risk reduction
3. Select correct statements concerning the indications and precautions for using each of the contraceptive methods
4. Select correct statements concerning how family planning methods prevent pregnancy and their effectiveness
5. Counsel a patient interested in using a family planning method to make an informed choice
6. Perform a patient assessment, including a reproductive medical history and physical examination, when necessary and appropriate
7. Perform a pelvic examination
8. Determine suitability of the patient for each of the family planning methods
9. Provide pills, condoms, and injectables along with appropriate patient instructions
10. Use recommended infection prevention practices and universal precautions in the provision of family planning services to minimize the risk of spreading hepatitis B and HIV
11. Provide followup management for each of the family planning methods, including management of side effects and other health problems

Supporting objectives continue. . . .

Sample 2-2. Sample Core Competency and Objectives for a Pediatric Clinical Rotation

Core Competency (Bachelor Degree of Medicine and Surgery program—MBBS)

Graduates provide high-quality, culturally sensitive outpatient care for children with common illnesses and malnutrition.

Course Objective

After completion of this course, the student will be able to manage major childhood illnesses and malnutrition in outpatient settings in an effective and integrated manner.

Supporting Objectives

To meet this objective, students will:

1. Assess, in an integrated manner, the signs and symptoms of common serious childhood illnesses and malnutrition
2. Check the immunization status of a sick child
3. Recognize general danger signs that require urgent referral to hospital
4. Classify common conditions according to the IMCI clinical guidelines
5. Identify treatments appropriate for all IMCI classifications
6. Demonstrate respect for mothers and caretakers by listening carefully to their explanations and concerns and by asking questions to check their understanding.
7. Teach caretakers how to give treatments at home
8. Identify children in need of urgent referral
9. Advise mothers or caretakers about feeding during illness, provision of fluids, and when to return to a healthcare provider
10. Assess feeding, including breastfeeding positioning and attachment
11. Counsel mothers to overcome feeding problems

SUMMARY

The critical first step in designing your course is to develop the objectives. With the core competencies for your academic program in mind, you will develop course and supporting objectives to reflect the knowledge, skills, and attitudes your students will acquire during your course. As you will see in *Plan for Teaching*, your course and supporting objectives will help guide the development of your course syllabus and also help you select methods for teaching and assessing your students.

MODULE TWO JOB AID:
GUIDE FOR DEVELOPING OBJECTIVES

Follow these steps to develop or revise the objectives for your course:

1. Identify the title of your course.

2. Identify the core competencies your course must link to or support.

3. Write one or more course objectives, making sure that each includes the following information:

   - When to demonstrate the knowledge or performance
   - Who will demonstrate competency
   - What will be demonstrated
   - How well the performance must be demonstrated (if not written as part of the objectives, this may appear in the course syllabus instead of in the course objectives)

4. For each course objective, write a series of supporting objectives including:

   - Knowledge objectives
   - Skill objectives
   - Attitude objectives

5. Supporting objectives should be written with a:

   - Specific action
   - Object of the action

6. Sequence the supporting objectives by using one or more of the following ordering schemes:

   - Simple to complex
   - Performance order
   - Related objectives

7. Place the objectives in the course syllabus (see *Plan for Teaching*).

MODULE THREE

PLAN FOR TEACHING

INTRODUCTION

Effective teaching requires careful planning. As a teacher, you may be responsible for planning or adapting entire courses, or parts of courses. You may also develop and plan new courses. This takes thought, time, and careful preparation. Most courses have both theory and practice components that work together to develop students' knowledge, skills, and attitudes. Courses usually begin in the classroom with theoretical background and the introduction, demonstration, and practice of related concepts and skills. They may continue in a simulated environment, such as a skills development lab, where students continue to develop knowledge, skills, and attitudes. Finally, courses may provide opportunities to practice key skills and demonstrate key attitudes in a supervised clinical setting.

Plan carefully for teaching by developing a course syllabus, planning for student assessment, selecting teaching methods, identifying learning materials, and developing a course schedule.

Main Objective

After completing this module, you will be able to effectively plan for teaching.

Supporting Objectives

To meet this objective, you will:

- Develop a course syllabus
- Plan for student assessment
- Select teaching methods
- Select and adapt learning materials
- Develop a course schedule

DEVELOP A COURSE SYLLABUS

A course consists of a series of learning sessions on a particular topic (e.g., Anatomy and Physiology) within an academic program (e.g., Certificate in Nursing). A syllabus serves as the design document for a course, providing all the basic information about

the course. A syllabus is typically given to students on the first day of class and includes the following information:

- Course title and description
- Course and supporting objectives
- Course prerequisites
- Course logistics: location, length, and dates of the course
- Description of teaching methods
- Description of learning materials
- Description of assignments
- Description of student assessment methods
- Attendance criteria
- Course schedule

The syllabus should accurately describe the course content and objectives. This helps you to plan a course that will meet the needs of the students, and helps students understand what to expect and also what will be expected of them.

You may be responsible for planning an entire course or a portion of a course, such as a focus on a special topic or a 1-week clinical rotation. Ideally, you will coordinate with other teachers involved in the course to develop a combined syllabus using the information below. If that is not possible, you may create a syllabus for the portion of the course for which you are responsible. Apply the same principles, whether creating a syllabus for a complete course or only a portion of a course. Refer to **Samples 3-1** and **3-2** at the end of this module for examples of a syllabus and schedule for a complete course and a part of a course. Below are brief descriptions of each component of a course syllabus.

Course Description

Develop the course description first. Because your course is part of an academic program, there should be a course title and description available. If not, this is a good time to develop them. The course description sets forth what the students can expect to learn during your course.

The course description should clearly link to and support the core competencies for the academic program. Consider these points when you develop the course description:

- Be brief and to the point. A concise course description should require no more than two or three well-written sentences.
- Use clear and active language.
- Describe, using action verbs, what students will be able to do as a result of attending the course. This general outcome or aim can be a combination of knowledge, skills, and attitudes.

The following are examples of a description of an entire course and a description of the clinical rotation portion of a course.

***Example*: Description of a Course on Family Planning**

This family planning course is designed to prepare graduate nurses or midwives to be competent family planning service providers. Upon completion of the course, students will be able to counsel patients about family planning methods, assess and screen patients, provide family planning methods, and manage side effects and any related complications. In addition to attending classroom sessions, students will have an opportunity to work first with other students and then with patients to apply their new knowledge, skills, and attitudes.

***Example*: Description of a Clinical Rotation on Integrated Management of Childhood Illnesses**

This clinical rotation is designed to provide students with the knowledge and skills needed to prevent and manage common serious childhood illnesses and malnutrition in an effective and integrated manner. Upon completion of the clinical rotation, students will be able to assess, classify, and treat the sick child or infant and counsel the mother and/or father.

Objectives for the Course

Learning or outcome objectives define in clear, measurable terms what the student will know and/or be able to do as a result of attending the course. These objectives will guide your course planning and preparation. Review any existing course and supporting objectives and revise them as needed. If they do not exist, write new ones. Writing course and supporting objectives is covered in the module *Develop Objectives for Learning*.

Course Prerequisites Identify and list any courses or related experiences that students must complete before enrolling in this course.

Course Logistics Include the location, duration, and meeting hours of the course. Include the probable locations for clinical rotations or other practical experiences.

Teaching Methods Describe the teaching methods (e.g., interactive presentations, guest speakers, case studies, role plays) you plan to use so that the students know what to expect. Selecting teaching methods that will meet the desired objectives is discussed in detail later in this module.

Learning Materials Include a description of the learning materials used in the course. These may include textbooks, packets of information (e.g., articles, handouts, self-learning packets), clinical logbooks, exercise books, assignments, library materials, computer software, and handbooks. It is also important to indicate where students can obtain the materials, such as from a bookstore, library, or teacher. How to select learning materials is discussed later in this module.

Course Assignments Students are very interested in the assignments that they are required to complete and submit during the course (e.g., project reports, skills practice sessions with other students, homework). It is important to clearly outline the major course assignments in the course syllabus and discuss them on the first day of class. This will help to reduce students' anxiety and questions. Give some serious thought to the assignments and then clearly describe what is expected for each assignment and when it is due. You may decide to include the list of assignments with the assessment methods.

Assessment Methods Based on the course description and objectives, decide how to assess the knowledge, skills, and attitudes of those attending your course as well as how to evaluate the success of the course itself. Select the student assessment methods (e.g., written tests, oral examinations, skills assessment tests) after the objectives have been written. Clearly describe how students' achievement will be assessed both in the classroom and practical portions of the course. Planning for student assessment is covered later in this module. Methods of student assessment are described in detail in *Prepare and Use Knowledge Assessments* and *Prepare and Use Skills Assessments*. Methods of evaluating a course are described in detail in *Monitor and Revise Teaching.*

Attendance The inclusion of a statement of attendance is optional. An attendance statement describes requirements for attendance and participation and the implications of missing classroom sessions. Some teaching institutions do not make a statement concerning attendance, while others make it a routine part of the student

assessment criteria. Refer to the example in the course syllabus (**Sample 3-1**) at the end of this module.

Course Schedule The course schedule is a session-by-session summary of learning activities and topics for the course. Developing a course schedule is described later in this module.

By now you should have your course title, description, and objectives. Now you are ready to plan for student assessment.

PLAN FOR STUDENT ASSESSMENT

Do you remember taking examinations when you were in school? How did your teachers choose the test questions? How did they decide whether to use a written examination or to observe students as they did something? Assessing students' achievement is one of your most important tasks as a teacher. It is a challenge, because there should be a direct relationship between learning objectives and student assessment. Have you ever taken a test that did not address the information you learned in the course? This happens quite often and is very frustrating for students. As a teacher, you are responsible for focusing examinations on expected learning objectives and balancing the assessment of knowledge, skills, and attitudes using a variety of appropriate assessment methods.

The main purpose of student assessment is to improve students' learning. This is more likely to happen if assessment is closely integrated with teaching and is guided by a basic set of conditions.

As a general guide, effective assessment requires:

- Clear definition of learning objectives
- Use of a variety of appropriate assessment procedures or methods
- Close agreement among the learning objectives, assessment tasks, and assessment methods
- An adequate sample of students' performance
- Procedures that are fair to everyone
- Clear criteria for judging successful performance

- Feedback to students that emphasizes strengths of performance and areas to be improved

- Support of a comprehensive grading and reporting system

Historically, student assessment has focused on measuring students' knowledge through written assignments and tests. It has now been recognized that students also need to demonstrate appropriate skills and attitudes in order to provide high-quality health services. Skills and attitudes generally cannot be assessed through written examinations. Instead, they must be demonstrated by the student and either reported by students or observed by another person.

In this section, you will learn how to plan student assessments. Later modules on *Prepare and Use Knowledge Assessments* and *Prepare and Use Skills Assessments* discuss how to develop and administer several types of student assessments.

Why Do We Assess Students?

Assessment is used to determine whether students have achieved the learning objectives for a course. In other words, we assess students to find out if they have acquired the expected knowledge, skills, and attitudes.

In addition, assessment can:

- Help teachers decide if students should progress to the next stage of study

- Motivate students by providing feedback on their progress

- Determine if the course is meeting its objectives

- Ensure that important subjects are given priority within the course

- Offer evidence to national regulating authorities that standards are being met

Assessment has a direct effect on students' learning. When the progress of students through a course is based on their passing assessments, they will focus on learning the material on which they will be assessed. If material is taught but students are not assessed on it, students will see no reason to focus on that material. Therefore, from the students' perspective, if the content is in the examinations, it is important; if it is not in the examinations, it is not important.

In addition, assessment can be used to improve teaching. If many students perform poorly in the same part of the course, the content may be confusing due to the inadequate definition of learning objectives, inappropriate teaching methods, poorly designed learning materials, or poorly developed knowledge and skills assessments. These weaknesses should be addressed in order to improve teaching and students' learning.

Who Should Assess Students?

Typically teachers, tutors, clinical instructors, or external examiners assess students. The more frequently students are assessed, the more opportunities they have to learn and improve their performance. But frequent assessments require that teachers spend a lot of time and effort planning and organizing them. One way to increase the frequency of assessments is through self-assessment and peer assessment.

In **self-assessment**, students assess their own performance. Of course, self-assessment should be used only for part of the course, and teachers or external examiners will decide whether students should pass or fail. Nevertheless, self-assessment gives students experience in assessing themselves, something that they will need to do on the job after graduation. The ability to make realistic evaluations of the quality of one's work is a skill that every graduating healthcare professional should have. This form of evaluation is usually a fundamental component of problem-based learning. In addition, it helps save time and gives students a greater sense of responsibility. To do self-assessment, students need clear guidance about the tasks required and the standards to be met. For example, you might ask students to plot the weight of 10 children on a weight for age chart. Students can compare their results with the correct answers and learn if their work was satisfactory. Cheating is not a problem, because the purpose of self-assessment is to learn, not to score points on an examination. Maintaining a journal or log of clinical experiences, which is shared with the teacher at designated intervals, also provides an opportunity for students to gauge their progress in all types of learning objectives (i.e., knowledge, skills, and attitudes).

In addition to self-assessment, students can assess each other. This is called **peer assessment**. Again, this method cannot be used to determine whether students pass or fail at the end of the course, but it is a very good method to help students learn. For example, you may ask students to follow written instructions—such as those for a competency-based learning tool—for performing a skill. While one student attempts to perform the skill, the other watches and comments. The students then switch roles. Peer assessment can give more meaning and relevance to field experiences, because students can watch, advise, and supervise each other.

Assessment Terminology

On the surface, student assessment seems easy. Teachers simply write exams and give them to students. It is more complex than that, however. Planning and administering student assessments require an understanding of some key terms and concepts. In this section, the following terms related to planning and administering student assessments are defined:

- Validity
- Reliability
- Feasibility
- Objectivity
- Criterion-referenced
- Formative assessment
- Summative assessment

Two of the most important characteristics of a well-designed assessment or test are validity and reliability.

Validity—Does the test measure what it is supposed to measure? Validity is concerned with getting test results that are appropriate, meaningful, and useful. An assessment is valid if it adequately measures whether the knowledge, skill, and attitude objectives of the course have been met. Therefore, when planning for an assessment, the first question to ask is, "What are the learning objectives?" If you clearly define the learning objectives of the course, carefully outline the related subject matter, and then construct a representative sample of relevant test items, the results of the examination are likely to be valid.

To check the validity of an examination, ask the following questions:

- Does the assessment reflect the course objectives? In other words, can test items be traced back to the learning objectives for the course?
- Does the assessment cover the content in a representative manner? If you use several assessment methods (e.g., written test, observation of students, student reports), does the combination of methods address the content in a comprehensive manner?

- Do the test items have the appropriate balance? For example, if you spent 25 percent of the course time on one course objective, students would expect that approximately 25 percent of the assessment would relate to that objective. Assume that during your course you demonstrate several clinical skills. If one of these skills is rarely performed on the job and was demonstrated for information only, students would not expect to demonstrate competence in this skill during an assessment.

- Is the assessment method appropriate for the objective? For example, if a learning objective states that students must be able to perform a specific skill competently, the appropriate assessment method would be to observe the students performing the skill. It would not be appropriate to use a written test to measure the students' competence in a skill.

Reliability—Does the test produce consistent results? An assessment is reliable when it consistently measures what it is designed to measure. A reliable assessment should obtain similar results if the same students take the exam more than once. For example, if a student scores 80 percent the first time taking a written test, the student should achieve a similar score on retaking the test shortly thereafter. In addition, a reliable assessment should obtain similar results when different observers or examiners assess the same student. For example, if one teacher gives a grade of 40 percent to a student's answer to an essay question, and another teacher gives the same answer a grade of 85 percent, that question is not a reliable assessment. Reliability is closely linked to objectivity (see below).

Figure 3-1 lists some desirable features of valid and reliable assessments.

Figure 3-1. Features of Valid and Reliable Assessments[1]

Desirable Features of Valid and Reliable Assessments

- There is a clearly specified set of learning outcomes.
- Assessment tasks are matched to the stated learning outcomes.
- Assessment tasks are a representative sample of the stated learning outcomes.
- Assessment tasks are the appropriate level of difficulty.
- Assessment tasks effectively distinguish between achievers and non-achievers.
- There are a sufficient number of assessment tasks (or opportunities for assessment) to produce an adequate sample of achievement, provide dependable results, and allow for meaningful interpretation of results.
- Clear instructions are given for the administration, scoring, and interpretation of the assessment results.

[1] *Adapted from*: Gronlund NE. 1998. *Assessment of Student Achievement*, 6th ed. Allyn and Bacon: Boston, MA.

Feasibility—Is the test practical in terms of the time and resources needed? In addition to being valid and reliable, assessments should be relatively easy to administer. Some assessment methods such as direct observation or objective structured clinical examinations (OSCE) require individual observation and can be challenging with large numbers of students. Written examinations may require less effort to administer and score, but do not address skills competency. The aim is to carefully select an appropriate combination of assessment methods that can be feasibly implemented.

Objectivity—An objective assessment is one that is free of teacher bias. For example, two different teachers can score a response to a multiple-choice question and the results should be the same. The same two teachers may score a response to an essay question and arrive at different results, because their backgrounds and personal judgments or opinions will influence the process. An assessment method is considered objective if the teacher's judgment or personal opinion cannot affect the score. Some assessment methods, such as observing students as they perform certain skills, will have an element of subjectivity. Objectivity can be increased, however, by using scoring aids such as skills checklists, examples of answers to questions, and the like. Objective tests are preferred and improve the reliability of assessments.

Criterion-referenced assessment—A criterion-referenced assessment is scored based on clear criteria; these criteria are found in the learning objectives for the course. In other words, the student is being tested against predefined performance criteria and not against other students. A norm-referenced test is one in which the students are compared with one another to develop a ranking of students. Although there are some appropriate uses of norm-referenced tests, criterion-referenced tests are recommended. Below are some of the benefits of a criterion-referenced assessment:

- It aids learning by clearly defining learning expectations. Students pass because they meet a standard, not because they perform better in relation to their peers.

- It encourages cooperation rather than competition. Students help one another to meet the objectives rather than compete against one another.

- It assists teachers to become better educators by encouraging them to define in writing their expectations and standards for performance.

Formative assessment—Formative assessment measures students' progress throughout the course. The purpose of formative assessment is to help students improve their performance. It gives students an opportunity to apply new knowledge, skills, and attitudes and to receive feedback from teachers. Formative assessment also reinforces important or difficult content areas. It can be done in nearly all learning environments, including the classroom, simulated practice environment, and clinic. Teachers should use a variety of formative assessment methods to help students prepare for summative assessments.

Summative assessment—Summative assessment is the formal assessment of a student's achievement at scheduled points during the course. Summative assessments assign a grade or mark to the student's level of competence in key learning objectives. Typically, the results of summative assessments are used to decide whether a student can complete a course, move on to another course in the academic program, or graduate.

What is the difference between formative and summative assessment? Actually, the same assessment procedures or methods can be used for both. The factor that distinguishes formative from summative assessment is how the results of the assessment are used. In a formative assessment, the results are used to give feedback to students, help them improve their performance, and help them prepare for later assessments. In a summative assessment, the results are recorded and used to determine if the student should pass the course. A good assessment strategy will involve frequent formative assessments of key or difficult knowledge, skills, and attitudes before the students complete a summative assessment.

With both types of assessment, teachers should give clear feedback to students about what they have done well and what they need to improve. Remember that the goal of assessment is to improve students' learning. If a student fails an assessment, provide the student with feedback, additional practice opportunities, and, if possible, another attempt to master the material.

Points to Remember about Assessment

To accurately assess students' achievement, remember the following:

- Base your assessments on the learning objectives. This will improve the **validity** of your assessments.
- Ensure that the procedure suggested for administering and scoring the assessment produces consistent results (i.e., the same student should receive the same scores on the same test, even if taken at different times or graded by different teachers). This will improve the **reliability** of your assessments.
- Select assessments that are **feasible**—that you and other teachers can implement within the available time and resources.
- Make your assessments **objective** by ensuring that the personal opinion of the teacher administering and scoring the assessment does not affect the results.
- Use **criterion-referenced** assessments to compare the students' performance against the learning objectives.
- Use **formative assessment** to provide students with feedback and help them to improve their performance.
- Use **summative assessment** to determine whether students have achieved the learning objectives for the course.

Select Assessment Methods

The learning objectives for your course should guide the selection of appropriate assessment procedures or methods. Will the assessment measure understanding of a subject (i.e., knowledge), or the ability to do something (i.e., skills)? Will it measure opinions or feelings (i.e., attitudes)? Or will it assess a combination of these? Will it help students to improve their performance by providing feedback (i.e., formative assessment), or determine if a student should move to the next stage of studies (i.e., summative assessment)? Because it can be very difficult to assess attitudes separately (e.g., the student is respectful of patients), it is recommended that attitudes be assessed as part of the demonstration of skills (e.g., the student's ability to greet patients in a respectful manner).

Assessing Attitudes

Our goal is to develop future healthcare providers who demonstrate appropriate knowledge, skills, and attitudes. Attitudes are opinions or feelings. How do we assess attitudes? As individuals, healthcare providers will have their own attitudes and opinions. For example, a nurse might disapprove of sexual intercourse outside of marriage, but her job may require that she provide family planning methods to unmarried adolescents. Healthcare providers have a right to their own opinions, but they must demonstrate through their behavior a nonjudgmental and accepting attitude toward all patients. For this reason, demonstrated attitudes, rather than personal thoughts and opinions, should be assessed. Do students demonstrate acceptance and respect through their verbal and non-verbal behaviors with patients? Demonstrated attitudes usually can be measured with the same types of assessment methods as those used for skills.

How do you choose which learning objectives to assess? Ideally, you should assess all of the supporting objectives of a course. That, however, can be challenging. For example, the course may have a large number of skills objectives, or a large number of students. Will it be possible to observe each student performing every skill? Probably not. To help you decide what to assess, look at each supporting objective and think about the best way to measure whether or not students have achieved the objective. As you do this, you may discover that it would be very difficult to adequately assess all of your learning objectives. In this case, you might need to revise some of the supporting objectives for the course.

In *Develop Objectives for Learning* you developed a series of supporting objectives for a course. It is now time to look at all of the objectives to decide how you will assess whether each student achieved every objective. Answering the following questions may help you decide how to assess students' achievement:

- Among the learning objectives, which can you measure through formative assessment?
- Which learning objectives can you measure through summative assessment?
- Which assessment procedures and methods should you use?
- Is it feasible to measure all of the objectives using the assessment methods identified?

Table 3-1 lists some supporting objectives from a family planning course, and describes what the teacher is thinking about each objective in order to decide how to assess achievement of that objective.

Table 3-1. Selecting Assessment Methods for a Family Planning Course

SUPPORTING OBJECTIVES	WHAT THE TEACHER IS THINKING	ASSESSMENT METHODS
Use effective communication techniques when counseling patients	This should require direct observation of students with patients. Students should first practice and receive feedback from peers and the teacher, if possible. Instead of doing this as a separate assessment, I can observe this when students counsel patients about sexually transmitted infection (STI) risk reduction.	Peer assessment in the skills lab (*formative)* Direct observation done while observing student counseling patients about STI risk reduction *(summative)*
Counsel patients about STI risk reduction	This is a key skill. Students should demonstrate full competence in this skill. I would like to see students do this with a patient in the clinic. I will need to have other teachers help with the assessment of students. Students should first practice and receive feedback from peers and the teacher, if possible.	Peer assessment in the skills lab *(formative)* Direct observation by a teacher *(summative)*
Select correct statements about the indications and precautions for each of the contraceptive methods	This is primarily a knowledge objective, and it's not very difficult. I will include multiple-choice questions on the final exam.	Objective written assessment *(summative)*
Perform a pelvic examination	This is a key skill, but we will have problems locating enough patients for students to practice. We have the pelvic models, so they could practice using these. I could also assess them using the models.	Direct observation of each student on an anatomic model *(formative and summative)*
Determine suitability of the patient for each of the family planning methods	This is primarily a knowledge objective. I can present the information and then ask the students to work on some case studies to see if they can determine whether patients are suitable.	Case study with multiple-choice questions *(summative)*

Tables 3-2 and 3-3 list some commonly used assessment methods. Note that these methods are appropriate for both formative and summative assessments. For information on developing and administering many of these methods, refer to *Prepare and Use Knowledge Assessments* and *Prepare and Use Skills Assessments*. These modules present various assessment methods such as written examinations, case studies, care plans, and observation of clinical skills.

Table 3-2. Commonly Used Methods to Assess Students' Knowledge

KNOWLEDGE METHODS*	DEFINITION
Drills, quizzes, and practice tests	Drills are verbal question and answer periods during a classroom or practical session. Quizzes and practice tests are short versions of written examinations, and are designed to help prepare students for a summative assessment.
Written exercises	Written exercises involve asking students to read and then answer questions to check their understanding of the reading. They can also involve asking students to read a case study, or view a video, slides, or photographs and then respond to related questions.
Case studies, clinical scenarios, and patient management problems	A brief case or situation is provided with information about a situation and several objective questions (e.g., multiple-choice, short-answer) are asked. The student reads the scenario and then answers the series of questions.
Project reports	The student completes a project (e.g., read a chapter or article, interview a patient) and then writes a report.
Essay examinations	An essay question can be written on any subject and is a common type of written examination. Essay questions are easy to write and can test the students' ability to organize and express ideas.
Objective written examinations	These include multiple-choice, true-false, matching, and short-answer assessment items. Note that teachers may work together to develop a set or bank of test items linked to learning objectives so that different items can be used on each test.
Structured practical examinations	The structured practical examination can assess knowledge, skills, and attitudes. It is not really an assessment method but rather an administrative structure in which a variety of assessment methods can be incorporated. Typically students rotate through a series of stations where they answer questions (orally or written), or perform tasks under observation.
Oral examination	Examiners interview one or more students about what they know about specific topics or what they would do in specific situations. This may take place in a classroom setting or when working with patients. Oral exams have poor reliability unless well structured with standardized questions and case studies. Teachers tend to consider these examinations valid, but students often do not.
Clinical rounds	While making rounds in the patient ward, the teacher asks the students questions.

* These methods are described in the module *Prepare and Use Knowledge Assessments*.

Table 3-3. Commonly Used Methods to Assess Students' Skills

SKILL METHODS*	DEFINITION
Direct observation	The assessor observes a student performing a skill. This may take place in a simulated situation (e.g., role play, anatomic model) or with patients.
Structured feedback reports	A structured feedback report is a standardized way to give feedback to students on their performance. Because a feedback report covers a period of time, the sustained performance is assessed rather than a "snapshot" obtained from an examination.
Logbooks (casebooks), learning journals, and care plans	The logbook (also called a casebook) contains a list of skills or tasks that students should be able to perform. These tasks are the learning objectives for the course. The students are responsible for learning how to do each of the tasks, and when they are ready, they can ask a teacher, tutor, or clinical instructor to assess their performance. The student maintains a learning journal. Learning journals are documents that include a brief description of the problem encountered, care or management of the problem, and education received. After recording information regarding one or more patients, the student may be asked to write notes or a brief report. A care plan is used to document the patient's problems, care required, and expected outcomes.
Structured practical examinations	Objective Structured Clinical Examination (OSCE) is a form of structured practical examination that can be used to assess knowledge, skills, and demonstrated attitudes. It is an approach to assessment that involves creating a series of stations through which students rotate and where they perform certain tasks.

* These methods are described in the module *Prepare and Use Skills Assessments*.

Now that you have written learning objectives, started to develop your course syllabus, and selected student assessment methods, you will select the teaching methods that you will use to help your students achieve the objectives.

SELECT TEACHING METHODS

Some students may learn better through listening, others by reading, and still others by viewing and doing something at the same time. The next important step in planning for teaching is to select the methods you will use to help students learn. The two most critical factors in selecting teaching methods are choosing a variety of methods, and choosing methods that are appropriate for achieving the learning objectives.

There are a number of teaching methods from which you may choose; many are covered in this manual. Review these methods and think about how each might be used to achieve the supporting objectives for your course. For example, if the learning objective is for students to list the immunization schedule for children under five, an interactive presentation is an appropriate teaching method.

However, if the learning objective is for students to give immunizations according to the schedule, students will need opportunities to practice giving the immunizations, preferably on models first and then with patients.

When selecting teaching methods, consider the following questions:

- **Is the method appropriate for the learning objective?** Certain teaching methods are more effective for helping students learn new skills; others are more useful for developing students' knowledge. For example, when teaching how to give an injection, you should demonstrate the skill and provide opportunities for practice rather than only give a lecture. For introducing the concepts of anatomy or physiology, presenting information using an interactive presentation would be appropriate. Consider which method will best help students to meet the learning objective.

- **Are the resources that this method requires available?** Some methods require additional materials, supplies, and equipment. Consider if the required resources are available or obtainable.

- **Are special facilities required?** Examples include hospital wards, clinics, skills labs, small rooms for group work, and an area for practice with simulated patients, other students, anatomic models, or computers.

- **What is the projected size of the class?** Some teaching methods are more appropriate for a small group than for a larger group. However, if the classroom is large enough, large groups can be divided into small groups to carry out specific learning activities. In addition, some teaching methods, such as case studies and role plays, can be adapted for use in larger groups.

- **Is a special room arrangement needed for this method?** Some methods require a special room arrangement (e.g., chairs arranged in small groups). If the room cannot be rearranged, look for another room that can be used instead.

- **Will the methods selected stimulate interest and provide variety?** Even the most exciting teaching method becomes boring if it is used all the time. Select a variety of methods that will stimulate interest, and change methods as needed.

Refer to **Table 3-4** for a list of common teaching methods, their definitions, and an indication of the domain(s) of learning for which each method can be used. This is not a comprehensive list of teaching methods, but a summary of some common methods used in educational settings. Most of the methods are described in detail in other modules.

Table 3-4. Commonly Used Teaching Methods

METHOD	DEFINITION	DOMAIN(S)
Brainstorming	Method in which a list of ideas, thoughts, or alternative solutions that focus on a specific topic or problem is generated. Brainstorming stimulates thought and creativity and is often used along with group discussions.	Knowledge
Case Study	Method using realistic scenarios that focus on a specific issue, topic, or problem. Students typically read, study, and react to the case study individually or in small groups.	Primarily knowledge and attitude
Clinical Simulation	A representation of a real or hypothetical patient management situation.	Knowledge, skill, and attitude
Demonstration	Method in which the teacher presents the steps necessary for the completion of a procedure or clinical task or activity.	Skill
Discussion	Interactive process in which students share their ideas, thoughts, questions, and answers in a group setting with a facilitator.	Knowledge and attitude
Facilitated Practice	Opportunity for students to practice or apply (with models, simulated patients, or real patients) the content presented in theoretical sessions. The teacher explains procedures or routines, demonstrates tasks, models the correct performance of the skill, and observes and interacts with students while providing ongoing feedback.	Knowledge, skill, and attitude
Game	Learning activity that usually has a set of rules and is often competitive. The purpose of the game must relate to the objectives.	Knowledge and attitude
Guest Speaker	Presentation related to the objectives conducted by an expert in the field.	Knowledge and attitude
Individual or Group Tutorial	Study of information by one or more participants under the instruction of a tutor or mentor.	Knowledge, skill, and attitude
Interactive Presentation	Verbal presentation of information by the teacher, in which presentation of content is supplemented with a variety of questions, interactions, visual aids, and instructional materials. Also known as a lecture or illustrated lecture.	Primarily knowledge
Panel Discussion	Discussion related to the learning objectives presented by a panel of individuals or content experts.	Knowledge
Role Play	Learning activity in which students play out roles in a simulated situation that relates to one or more learning objectives.	Knowledge, some skills, particularly communication skills, and attitude
Study Trip	Learning situation outside the regular classroom, in which students travel to another location in a facility or outside the facility.	Primarily knowledge

Ensure Opportunities for Practice

Imagine taking a course that consists of listening to a series of lectures and then being given a test, and finding that you had no opportunity to practice or apply the expected knowledge, skills, and attitudes before the test. This is not an effective way to learn. Students need opportunities to practice or apply new knowledge, skills, and attitudes. The design and development of practice activities—or learning experiences—has two essential features: **practice** and **feedback**. Practice and feedback will also help students to develop appropriate attitudes.

Throughout the course, schedule practice activities including reading, homework, or other assignments, to help students apply new knowledge, skills, and attitudes. In addition to providing learning opportunities for students, practice activities are opportunities for formative assessment in which teachers can give feedback to students to help them improve their performance.

Practice opportunities can occur individually or in groups. They can be conducted in the classroom in simulated environments (refer to *Prepare the Teaching Environment*) or at a clinical practice site. Try to use a variety of practice exercises to maintain interest. Different practice activities will be appropriate for different learning objectives, as illustrated below.

Knowledge:	Solve a series of problems. Answer a series of questions. Label a drawing. Locate information in a manual. Make a drawing or sketch. Complete a case study.
Skill:	Practice a skill with an anatomic model, simulated patient, another student, or with an actual patient. View a video, slide show, or photographs, or use a computer-based learning program (e.g., to identify signs and symptoms of illness or malnutrition).
Attitude:	Participate in a role play. Conduct an interview.

Table 3-5 provides several examples of how to relate assessment methods to the objectives and teaching methods.

Table 3-5. Course Objective: After completion of the course, the student will be able to protect, promote, and support appropriate infant feeding practices.

SUPPORTING OBJECTIVES	TEACHING METHODS	ASSESSMENT
1. Complete a feeding assessment	Individual reading Interactive presentation Viewing a demonstration video Role play in small groups Practice in clinic with mothers and children	Test of knowledge *(formative)*: List the steps of a feeding assessment. Observation of skills *(summative)*: Clinical instructor observes students and provides feedback.
2. List common feeding problems	Individual reading Brainstorming session on local feeding problems Illustrated lecture Review of clinical records	Written assignment to assess knowledge *(formative)*: Summarize the common feeding problems found in the review of clinical records.
3. Demonstrate nonjudgmental attitudes when counseling the mother	Group discussion and counseling role plays	Observation of demonstrated attitudes *(summative)*: Teacher observes interaction with a mother or simulated patient and provides feedback using a checklist.

You have identified the assessment methods, teaching methods, and practice activities that you will use in your course. Now it is time to consider teaching and learning materials for you and your students.

SELECT AND ADAPT LEARNING MATERIALS

Learning is more effective when a variety of appropriate materials are used. The materials used by teachers and students will differ from course to course. In most courses, the materials will include textbooks, workbooks or exercise books, handouts, videos or slide sets, CD-ROMs, or computer-based educational programs. Materials may also include learning packets that contain reference materials, exercises, checklists, assessment tools, and transparencies or computerized presentations.

Select Learning Materials

Some materials are more effective for teaching and learning concepts and principles, while others are more effective for demonstrating and practicing skills. Having a variety of learning materials is important for meeting the learning needs of different students. For example, to demonstrate a clinical procedure, showing a videotape and demonstrating the skill with a simulated patient or anatomic model would be more effective than delivering an interactive presentation. Keep in mind that, just as for teaching methods, the excessive use of any one type of material will decrease its effectiveness. Before deciding on new materials or adapting existing ones, carefully evaluate the materials to be sure that they are appropriate.

Consider the following when evaluating materials:

- Are the materials appropriate for meeting the learning objectives?
- Is the information contained in the materials up-to-date, unbiased, factual, consistent, and technically correct?
- Will visual aids work with the equipment that is already available?
- Are the format and quality of the materials consistent with those of the other course materials?
- Are the materials relevant and culturally sensitive?
- Is the reading level of the materials appropriate for the students?
- Is the cost of the materials reasonable?

There are four general classifications of learning materials. These include:

- Handouts
- Printed materials
- Visual aids
- Computer-based materials

The following are descriptions and definitions of each, with examples of the most common types of materials found within each classification:

Handouts—Handouts are worksheets, pre-printed notes, or other information on paper that support a learning session. There are several benefits of handouts: they allow students to pay better attention because they have to take fewer notes, they support or emphasize main points, and they serve as a permanent record of facts. **Figure 3-2** is an example of a handout for helping students take notes during an interactive presentation on maternal health.

Figure 3-2. Handout for Taking Notes

Postpartum Hemorrhage

Define:

1) Postpartum hemorrhage (PPH):

2) Primary PPH:

3) Secondary PPH:

4) Retained placenta:

5) Atonic bleeding:

6) Traumatic bleeding:

7) List causes of primary PPH and indicate those with high incidence of maternal death:

This simple handout helps make the presentation more interactive by providing a structure for the presentation and helping students organize their notes while they listen and participate. The handout also reminds you, the teacher, of the main points.

Figure 3-3 shows a handout of your presentation. These "thumbnails" are miniature versions of computer-generated slides or transparencies; usually three are shown on each page with space to the right of each slide to write notes. These can be generated automatically when you create computer presentations.

Figure 3-3. Computer-Generated Handout

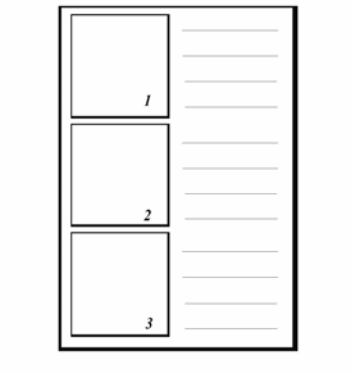
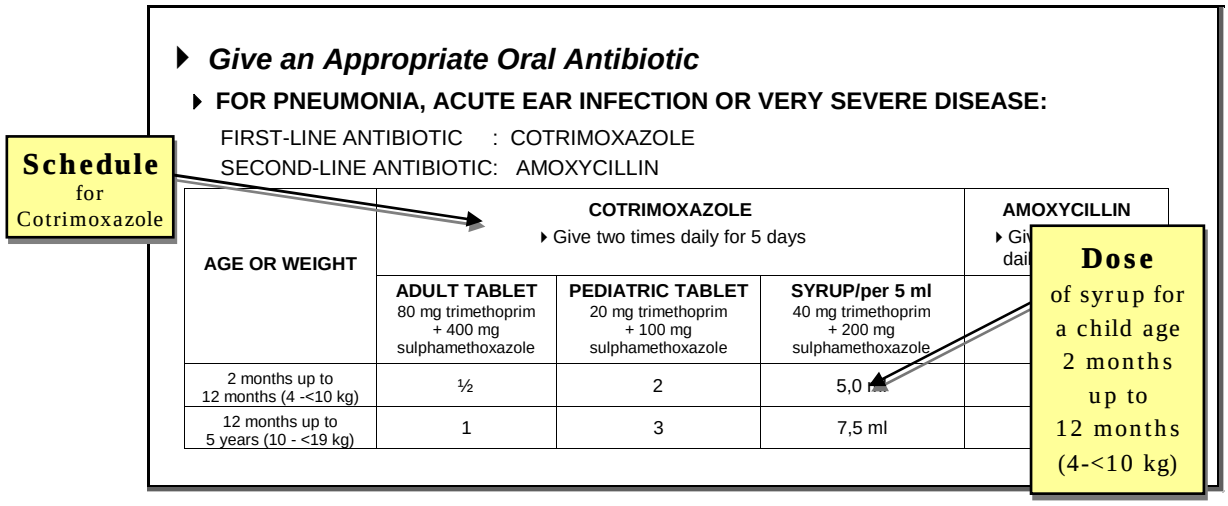


Figure 3-4 is an example of a handout that illustrates complex or detailed information. This type of handout is useful when you are teaching complicated procedures or decision-making skills.

Students can use these handouts as a record to which they can refer later. This type of handout saves you time, because complicated information can be more easily provided in a handout than written by hand on a board or flipchart.

Figure 3-4. Top Part of a Schedule and Dose Table for Oral Antibiotics



Note: Avoid giving cotrimoxazole to an infant younger than 1 month of age who is premature or jaundiced. Give this infant amoxycillin or benzylpenicillin instead.

Printed materials include text to be read, studied, and used by students. These materials may already be available or you may identify or develop them yourself. They may be given to students, purchased by students, or made available in the library. The most common forms of printed materials include:

- Textbooks
- Reference manuals
- Memory aids or job aids (e.g., Integrated Management of Childhood Illness [IMCI] chart booklets)
- Workbooks or exercise books
- Written exercises such as case studies, role plays, and assignment sheets
- Checklists, logbooks, or other procedure protocols (refer to *Facilitate the Development of Healthcare Delivery Skills* and *Prepare and Use Skills Assessments* for information on developing and using competency-based learning tools such as checklists)

Visual aids are described in detail in *Prepare and Use Visual Aids*. Audio and visual learning aids include materials such as videotapes, audiotapes, slide presentations, and flipcharts.

Computer-based materials such as educational CD-ROMs with text, video clips, and exercises can be used for practice, research, and other self-directed learning. In most computer-based learning, the student interacts with the computer with little or no help from the teacher. The computer, not a person, presents the information, provides feedback on completed exercises, and assesses the student's achievement.

Adapt Learning Materials

Standardized learning materials help to ensure consistency in developing knowledge, skills, and attitudes, and provide the basis for an objective assessment of performance. Often the teaching institution chooses and provides the basic learning materials, especially the textbooks or reference materials. Nevertheless, teachers and tutors can influence the selection of these basic materials. You may also improve or supplement basic materials to suit the learning objectives of your course. The beginning of this section gives a list of examples of learning materials you may have available. You may need to adapt some of these to fit your course objectives. There are a number of reasons to adapt the learning materials for a course:

- You may need to add new information or skills to a course (e.g., adding a procedure such as oxytocin administration during active management of the third stage of labor).

- Materials provided may have been originally used in an inservice training setting and now need to be adapted for use in teaching students at your institution (e.g., integrating a course on reproductive health for adolescents).

- Learning materials may need to be adapted for country-specific situations (e.g., essential drug lists, immunization schedules, and feeding recommendations for IMCI all must be adapted to the national situation).

- National authorities may have supplied supplemental reference manuals or booklets on topics such as family planning, maternal and newborn health, or adolescent reproductive health that need to be incorporated into an existing course.

Adapt the materials to match the learning objectives. If you are uncertain about the learning materials, return to the learning objectives and ask yourself, "Will these materials help students meet the learning objectives for the course?" or "How can I adapt

these learning materials to better help students meet the learning objectives?"

Once you have written your learning objectives, planned for student assessment, and selected teaching methods and learning materials, you can finish your course syllabus. The last item you will need to develop to plan your course is a course schedule.

DEVELOP A COURSE SCHEDULE

The **course schedule** is a session-by-session summary of learning activities and topics for the course. If you are responsible for only a portion of the course, work with the other teachers to create a combined schedule. If that is not possible, create a schedule for the portion you will be teaching. The course schedule should include the dates of the course sessions, as well as due dates for assignments, details on planned activities, and times scheduled for practice, activities, and tests. The course schedule can be broken down weekly (e.g., Week 1, Week 2) for a semester-long course and daily (e.g., Day 1, Day 2) for a portion of a course. This allows students to see the sequence of course and clinical activities.

Because the syllabus states the objectives, assessment methods, teaching methods, learning materials, and assignments, use it to guide development of the course schedule. Past experiences with the course may provide the information you need to prepare the schedule. For each block of time (week or day), note the topic, any assignments due, and learning materials required.

The sequence of activities in the schedule should reflect the process of developing knowledge, skills, and attitudes. Organize classroom and clinical activities to provide the theoretical background or introduction of skills first, move on to provide opportunities for practice in a safe (or simulated) environment, and provide opportunities to integrate knowledge, skills, and attitudes in a clinical setting. Hand out the course schedule to students along with the course syllabus (i.e., course curriculum). Refer to **Samples 3-1** and **3-2** for examples of schedules for a full course and a portion of a course.

SUMMARY

Planning is essential for effective teaching. Carefully writing objectives, planning for student assessment, and selecting teaching methods and learning materials will result in a course syllabus and schedule that will help you to teach and your students to learn. The outcome of this planning process is a well-designed course. If the course syllabus and schedule are already provided, ensure that the

objectives will contribute to developing the core competencies for the academic program, and review and adapt—if necessary—the suggested teaching methods, required materials, and assessment methods. Refer to the job aid at the end of this module for a tool to help you prepare a course syllabus.

Sample 3-1. Syllabus and Schedule for a Family Planning Course

COURSE DESCRIPTION

This family planning course is designed to prepare graduate nurses or midwives who are competent providers of family planning services. Students will be able to counsel patients about family planning methods, assess and screen patients, provide methods, and manage side effects and any related complications.

COURSE OBJECTIVES

Course Objective

After completion of this course, the student will be able to counsel patients about family planning methods and STI risk reduction; assess, screen and educate patients about family planning usage; provide temporary methods such as condoms, injectables, and oral contraceptives; and manage any side effects or complications.

Supporting Objectives

To meet this objective, students will:

1. Use effective communication techniques when counseling patients
2. Counsel patients about STI risk reduction
3. Explain the indications and precautions for using each of the contraceptive methods
4. Explain how family planning methods prevent pregnancy and their effectiveness
5. Counsel a patient interested in using a family planning method to make an informed choice
6. Perform a patient assessment, including a reproductive medical history and physical examination, when necessary and appropriate
7. Perform a pelvic examination
8. Determine the suitability of patients for each of the family planning methods
9. Provide oral contraceptives, condoms, and injectables along with appropriate patient instructions
10. Use recommended infection prevention practices and universal precautions in the provision of family planning services to minimize the risk of spreading hepatitis B and HIV
11. Provide followup management for each of the family planning methods, including management of side effects and other health problems

COURSE PREREQUISITES

Student must have completed Health Fundamentals

COURSE LOGISTICS

Location: Classroom 116, Lecture Hall
Mondays 9:00–10:00 AM
Spring Semester 2003, 7 January–30 April
Clinical Practice Sites: Family Health Center, District Hospital

TEACHING METHODS

- Illustrated lectures and group discussion
- Individual and group exercises
- Role plays
- Simulated practice with the injection arm model and pelvic model
- Guided clinical activities (counseling and family planning method provision)

LEARNING MATERIALS

- Reference Manual: *Essentials of Contraceptive Technology*. **Handed out in class**
- Educational Packet: *Principles of Counseling.* **Available in Library Reference shelf**
- Training videotapes: *Infection Prevention for Healthcare Facilities with Limited Resources. Overview and Practical Training Demonstration Segments* (JHPIEGO). **Shown in class, available in Skills Development Lab**
- Depo-Provera® injection equipment (injection arm model, Depo-Provera vials, syringes, infection prevention supplies). **Provided in class**

COURSE ASSIGNMENTS

- Three journal article reviews: refer to course schedule
- Three exercise sheets: refer to course schedule
- Six case studies: refer to course schedule

METHODS OF ASSESSMENT

Classroom Scored assignments:

- Combined score on journal reviews: consists of 25 percent of final grade
- Combined score of other assignments: consists of 25 percent of final grade
- Final examination in class: consists of 50 percent of final grade

Clinical Practice Required for course completion:

- Successful demonstration of counseling for a new family planning method, including provision of that method using the appropriate infection prevention practices
- Successful demonstration of patient screening and assessment
- Successful demonstration of counseling for a family planning return visit
- Successful demonstration of a pelvic examination
- Successful demonstration of Depo-Provera injection
- Complete Course Evaluation

ATTENDANCE CRITERIA

Because this course will involve numerous discussions and class activities, students are expected to attend all classes. Absences will result in a grade reduction. Students are expected to read all assignments in advance. All course presentations will be very interactive and based on the assumption that students have completed the reading assignments in advance.

COURSE SCHEDULE

WEEK/DATE	TOPIC	ASSIGNMENTS DUE	REQUIRED READING
8 January	Intro. to family planning		
15 January	Effective communication	Exercise 1	*Essentials of Contraceptive Technology*: Counseling
22 January	STI risk assessment and counseling the patient		*Essentials*: Sexually Transmitted Diseases
29 January	Counseling the patient	Case Studies 1–3 **EXAM ONE**	
5 February	Anatomy and physiology Review and health assessment	Journal review 1	*Essentials*: Important Information for Providing Family Planning
12 February	Family planning methods: short-term methods review	Exercise 2	*Essentials:* Fertility-Awareness Based Methods, Lactational Amenorrhea Method
19 February	Norplant® implants, IUD, permanent methods	Exercise 3	*Essentials*: Norplant Implants, IUDs, Female Sterilization, Vasectomy
26 February	Injectables	**EXAM TWO**	
5 March	Injectables: Practice in simulated environment		
12 March	**MID-SEMESTER BREAK**		
19 March	Infection prevention in family planning	Journal review 2	*Essentials*: Important Information for Providing Family Planning
26 March	Emergency contraception	Case Studies 4–6 **EXAM THREE**	*Essentials*: Low-Dose Combined Oral Contraceptives
2 April	**Clinical Practice**: Counseling		Group A: Family Health Center Group B: District Hospital
9 April	**Clinical Practice**: Counseling and health assessment	Journal review 3	Group A: Family Health Center Group B: District Hospital
16 April	**Clinical practice**: Counseling, assessment, and provision of method of choice		Group A: District Hospital Group B: Family Health Center
23 April	**Clinical practice**: Counseling, assessment, and provision of method of choice		Group A: District Hospital Group B: Family Health Center
30 April	**FINAL EXAM**		

Sample 3-2. One-Week Syllabus and Schedule for the Clinical Rotation Portion of a Basic Pediatrics Course

DESCRIPTION OF THE CLINICAL ROTATION

This 1-week clinical rotation is part of a 3-month course in basic pediatrics for 4th year medical students. The rotation is designed to prepare students to assess, classify, and manage sick children (e.g., treat and/or refer sick children and counsel caretakers) according to the IMCI clinical guidelines.

OBJECTIVES OF THE ROTATION

Course Objective

After completion of this course, the student will be able to manage major childhood illnesses and malnutrition in outpatient settings in an effective and integrated manner.

Supporting Objectives

To meet this objective, students will:

1. Assess, in an integrated manner, the signs and symptoms of common serious childhood illnesses and malnutrition
2. Check the immunization status of a sick child
3. Recognize general danger signs that require urgent referral to hospital
4. Classify common conditions according to the IMCI clinical guidelines
5. Identify treatments appropriate for all IMCI classifications
6. Demonstrate respect for mothers and caretakers by listening carefully to their explanations and concerns and by asking questions to check their understanding
7. Teach caretakers how to give treatments at home
8. Identify children in need of urgent referral
9. Advise mothers or caretakers about feeding during illness, fluids, and when to return to a healthcare provider
10. Assess feeding, including breastfeeding positioning and attachment
11. Counsel mothers to overcome feeding problems

ROTATION PREREQUISITES

Students must have completed Phase One of the Bachelor of Medicine and Surgery (MBBS) degree program.

ROTATION LOGISTICS

Mornings: Main Lecture Hall of the Pediatrics Department
Afternoons: Outpatient Department of the Children's Hospital and Community Clinics (locations will be announced)

TEACHING METHODS

- Short interactive lectures
- Group discussions
- Videos
- Role plays
- Case studies
- Demonstrations
- Facilitated practice with feedback in the outpatient department of the hospital and nearby community clinics

LEARNING MATERIALS

- IMCI handbook for students
- IMCI chart booklet
- IMCI photograph booklet
- IMCI wall charts
- White board
- Transparencies and overhead projector
- Video, video player, and television

ROTATION ASSIGNMENTS

- Read selected sections of the IMCI handbook and IMCI chart booklet.
- Complete case studies and other written assignments.

METHODS OF ASSESSMENT

Classroom (Knowledge)	Case studies and scored assignments
Practical (Skills and Attitudes)	Observation during clinical practice

ATTENDANCE CRITERIA

Students are expected to attend all classes.

CLINICAL ROTATION SCHEDULE

DATE	TOPICS	ASSIGNMENTS DUE	REQUIRED READING
1 March	• Identify common illnesses and general danger signs in children age 2 months up to 5 years. • Assess and classify the child with cough or difficult breathing. • Identify treatment for the child with cough or difficult breathing.	Video Exercise 1 Photo Exercise 1	IMCI Handbook: *Assess, classify, and identify treatment for the child with cough or difficult breathing*
2 March	• Assess and classify the child with diarrhea. • Identify treatment for the child with diarrhea. • Counsel the caretaker about home care and when to return.	Case Study 1 Video Exercise 2	IMCI Handbook: *Assess, classify, and identify treatment for the child with diarrhea*
3 March	• Identify common causes of fever. • Assess and classify the child with fever. • Identify treatment for the child with fever. • Assess the child for malnutrition and anemia. • Classify the child's nutritional status.	Case Study 2 Photo Exercise 2	IMCI Handbook: *Assess, classify, and identify treatment for the child with fever, ear infection, malnutrition, and anemia*
4 March	• Identify common illnesses in infants age 1 week up to 2 months. • Assess and classify a young infant's illness. • Identify treatment for a young infant's illness. • Assess feeding, including breastfeeding, and counsel mothers about feeding problems.	Video Exercise 3 Photo Exercise 3 Case Study 3	IMCI Handbook: – *Immunization, vitamin A, and deworming* – *Assess, classify, and identify treatment for the young infant* – *Counsel the mother*
5 March	• Practice the full IMCI case management process with sick children age 2 months up to 5 years.	Video Exercise 4	IMCI Handbook: Review previous reading assignments
6 March	**EXAMINATION: WRITTEN TEST AND OBSERVATION OF STUDENTS' PERFORMANCE IN CLINIC**		

MODULE THREE JOB AID:
GUIDE FOR CREATING A COURSE SYLLABUS AND SCHEDULE

Course Description: Describe your course in one or two sentences.

Objectives for the Course (see the module *Develop Objectives for Learning*):

Course Objective(s): What is the overall objective of your course, or your part of the course? In general, what should the student know or be able to do after completing the course, or part of the course, that you are teaching?

Supporting Objectives: What specific knowledge, skills, and attitudes do students need to develop in order to meet the course objective(s)?

Course Prerequisites: What courses or experiences must the student complete before enrolling in this course?

Course Logistics: Where, at what time, and on what dates will the course be held? Where will practical sessions occur?

Teaching Methods: What methods will you use to teach the course (e.g., case studies, role plays, demonstrations, clinical practice, illustrated lectures)? How will you provide opportunities for students to practice new skills?

Learning Materials: Which learning materials will you use? How will students obtain them?

Course Assignments: What assignments will students need to complete during your course?

Assessment Criteria: How will you assess the knowledge, skills, and attitudes of those attending the course?

Attendance: How will the students' attendance affect their grade?

Course Schedule: For each week or session of the course, what are the planned topics, learning activities, and assignments?

MODULE FOUR

PREPARE THE TEACHING ENVIRONMENT

INTRODUCTION

In addition to planning for your course, you will need to prepare the classroom and clinical teaching environment. Theoretical and practical experiences build on each other to help students gain new knowledge, skills, and attitudes. These develop progressively, beginning in the classroom with presentation of the theoretical background and the introduction of related skills through explanation or demonstration. Development of the new knowledge, skills, and attitudes continues in a safe (or simulated) environment where students practice and attain skill competency. Finally, it results in opportunities to apply the new knowledge, practice the new skills, and explore attitudes with patients in a supervised clinical setting. You must be well prepared for the theoretical and practical aspects of teaching to ensure that students have adequate opportunities to learn theory and apply knowledge, skills, and attitudes in the classroom, practice skills in a simulated environment, and work with appropriate patients in clinical practice sessions.

Main Objective

After completing this module, you will be able to prepare for classroom and clinical teaching.

Supporting Objectives

To meet this objective, you will:

- Prepare the classroom environment
- Prepare for practice in a simulated environment
- Select sites for clinical practice
- Prepare the clinical practice environment

PREPARE THE CLASSROOM ENVIRONMENT

The classroom should provide a good environment for learning. Consider the following questions:

- **Is the space large enough for the number of students?** The classroom should be large enough for:
  - A table in the front of the room for setting up visuals aids and placing teaching materials

  - Space for audiovisual equipment (e.g., flipchart, screen, overhead projector, computer and projector if available, video player, monitor); the students should be able to see the projection screen and other visual aids
  - Space for students to work in small groups; if your classrooms do not allow for group activities, a room being used for simulated practice can also be used for small group work and skills practice

- **Is the room properly heated or cooled and ventilated?** Simple things like adding a fan, space heaters, or dark curtains to prevent too much sunlight can help make a room more comfortable.

- **Is the lighting adequate?** Make sure that there is enough light and the room can be darkened enough to show visual aids and still permit students to take notes.

- **Is the seating appropriate?** Some classrooms have fixed seats; others have movable chairs and tables. Make sure everyone can see you and the visual aids. Movable chairs and tables are ideal because they can be arranged to accommodate work in small groups and allow the teacher to move from group to group as needed.

- **Is there audiovisual equipment in working order available?** Make sure spare parts such as bulbs are readily available. The video monitor should be large enough so that all students can see it well. There should be enough electrical connections, and extension cords, electrical adaptors, and power strips (multi-plugs).

Create space for students to gather to review a case study, watch a video, or look at wall charts or posters (e.g., Integrated Management of Childhood Illness [IMCI] or anatomy posters). This may be difficult in some classrooms, such as traditional tiered lecture halls, in which case the students may turn in their seats and work in small groups. Although you may not have a choice of classrooms, and you may be limited by a lack of supplies or adequate facilities, look for changes that you can make to improve the classroom environment.

PREPARE FOR PRACTICE IN A SIMULATED ENVIRONMENT

After introducing a new topic or skill, provide opportunities to apply new knowledge or practice new skills in a simulated or safe environment when possible. Simulated environments are places where students can work together in small groups, observe or

participate in role plays, perform clinical simulations, watch videos, practice skills with anatomic models, or work on computers if available. Some teaching institutions may have the space and resources for setting up a formal, simulated practice environment. These are sometimes referred to as Skills Development Labs, Student Practice Centers, Clinical Skills Centers, or Student Learning Centers or demonstration rooms.

Remember learning how to take a history or blood pressure? What was more helpful when you learned these skills—lecture or "hands-on" practice? "Hands-on" learning is essential for gaining new skills. Below are some examples of practice activities that work well in a simulated environment:

- Practice counseling during role plays
- Learn to perform a pelvic examination using an anatomic model
- Practice counting breathing rate using videos of children with acute respiratory infections
- Practice assessing maternal nutrition using simulated patients

There are many benefits to providing opportunities for practice in a simulated environment before the clinical practice session with patients. Practicing with anatomic models and simulated patients (such as volunteers or other students) allows students to learn and practice skills without harming or inconveniencing patients. The following are some ways to provide practice opportunities in a simulated environment:

- **In the classroom.** Set aside a class session for practice after introducing the theory. Gather the necessary supplies and create space for students to work—either by rearranging tables and chairs or by setting up in another room. Use the class time to allow students to practice and receive feedback. If you cannot set up supplies and space to work in the classroom, use another room that has enough space.
- **In a skills development lab or clinical skills center.** Collaborate with administration and other teaching staff to set up and maintain a clinical skills learning facility. This can be done by adapting existing space or constructing new space. For example, a former ward or stock room may be converted into a skills development lab. The benefits of a space dedicated to clinical skills development are that it can be:
  - readily accessible to major users;

  - designed, furnished, and equipped to meet a range of needs;
  - attractive to students, staff, and patients; and
  - permanently equipped with audiovisual, telecommunications, and computer facilities.

- **At the clinical practice site.** Coordinate with clinic administration to use a room that has space for working in groups and setting up the necessary equipment and supplies. Take along the needed supplies and equipment and set them up before the students arrive. Provide opportunities for practice with feedback in a simulated environment before a clinical practice session begins, during times of low patient caseload, or immediately after a clinical practice session.

No matter where you choose to provide opportunities for practice, obtain the necessary supplies and equipment for the desired practice session. Be sure that the related learning materials (such as textbooks, learning packages, and checklists) are available. Set them up before the students arrive so that they have enough space to work with models, watch a video, or work in small groups. Provide sufficient light and be sure the room can be locked if you will not be able to stay with the equipment until the students arrive. Obtain what you can of the following equipment and supplies:

- **Anatomic models** such as breast, pelvic, condom, and injection arm models. If possible, other models such as the childbirth, Norplant implants insertion arm, or no-scalpel vasectomy models can be added later. Teachers in many schools have made their own models using locally available materials.

- **Learning materials** such as related manuals or textbooks, checklists, supplemental exercises, videos, and computer software if available. Supply additional topic-specific materials (e.g., IMCI, breastfeeding, child health, adolescent and general reproductive health, maternal/newborn health) as well.

- **Physical supplies** such as chairs and tables, place for handwashing or simulated handwashing, an additional light source, videotapes, video player and monitor if possible, flipchart stand, paper, and markers.

- **Medical supplies** such as examination gloves, required instruments and equipment, cloth sheet or drapes, cotton/gauze swabs, syringes, oral rehydration supplies, infection prevention supplies, and contraceptive samples. Obtain any medical supplies you need for demonstration and practice of the essential skills in the simulated practice environment.

Even if a certain room is not set aside for practice opportunities, take the time and energy to provide opportunities for practice, no matter which setting you choose. Provide the necessary supplies and equipment for the related skills practice or group activities.

Introduce and Manage a Simulated Practice Environment

In this manual, we use the term Skills Development Lab (SDL) for a simulated practice environment. Planning and initiating a SDL require significant time, resources, and commitment from your institution's administration. The following are recommended steps for planning for a SDL, whether for your school or for an associated clinical practice site:

- Ensure that the administration involved is willing to support the SDL by dedicating the chosen space to that purpose, providing the necessary supplies and equipment, and the necessary time for orienting faculty and staff.

- Choose a room that can be locked but is in an accessible location.

- Choose a room with adequate light and space for students to work in small groups.

- Choose a room that is secure. The room should contain a lockable storage cabinet space for storing valuables such as video players and recorders, monitors, etc.

Introducing a Skills Development Lab

Several issues need to be discussed with administrators and faculty involved in the initiation and management of a SDL. There must be consensus among administrative staff regarding the location, supply, use, and management of the SDL. The suggested steps involved in initiating a SDL are listed below:

- Gather the administrative staff capable of making institutional decisions and related faculty across departments for an initial discussion of why the SDL will benefit the institution and how it can be incorporated into present teaching practices. Develop consensus with this group about how the SDL will be managed and used within the existing program.

- Choose several individuals involved in the skills training to be "champions" or serve on a small working group for the development and management of the SDL.

- Gather the initial group to achieve consensus regarding physical location and setup, supply management, faculty orientation to the SDL, SDL hours, and staffing.

- Physically set up the SDL. Gather models, tables, supplies, and equipment to set up the center. Refer to the previous section for the recommended supplies. Set up tables with sufficient room for students to work in groups with anatomic models. Set up areas for study or small group work with chairs or tables. Place supplies and learning materials (including exercises, role plays, checklists) in a central area. Post related wall charts and posters. Make sure there is adequate light. Administrators will need to provide some financial support to purchase supplies, laminate learning materials, and make copies. A sketch of a sample layout in shown in **Figure 4-1**.

- Orient faculty to the SDL. Inform them about the purpose of the SDL, use and care of anatomic models, use of checklists to develop skills and assess competency, use of the SDL for demonstration of skills, and times of operation. Plan how the SDL will be incorporated into the existing teaching methodology. Determine when the SDL will be staffed with faculty or senior students and who will staff it.

- Orient students to the SDL. Schedule a day for orientation and rotate students through in groups. Discuss when the center will be open, when skills can be practiced and observed, whom to contact for keys, and whom to go to with questions. Discuss handling anatomic models and using checklists for practice with anatomic models. Demonstrate how to use a checklist to practice a skill with anatomic models.

Managing Simulated Practice

- Post in key locations the hours that the SDL will be open and any related schedules. Provide instructions on how to gain access to the SDL after hours.

- Remind appropriate faculty of the availability of the SDL for demonstration of skills and assessment of competency prior to clinical experiences.

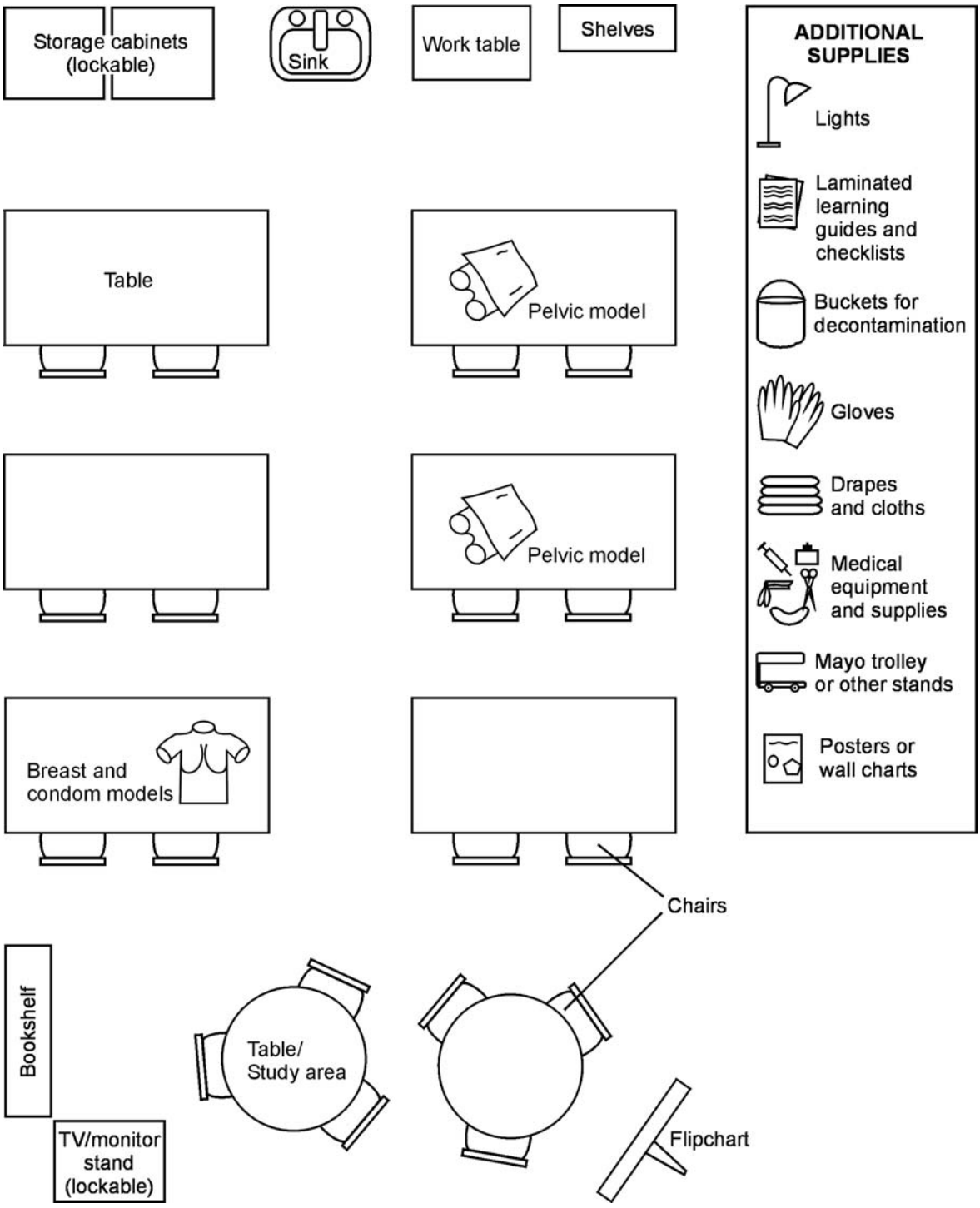
- Delegate someone to be available and responsible for keeping the keys.

- Staff the SDL with faculty or senior students during designated times for practice and demonstrations.
- Maintain supplies, resources, and equipment and ensure that they are not borrowed for other uses.

- Choose several senior-level students to be available during practice times. Orient these students to the SDL and, before

approving them as assistants, use checklists to evaluate their skills with models.

Figure 4-1. Overhead View of a Skills Development Lab



Establishing and maintaining a SDL may be beyond the organizational capacity and resources of many schools with limited budgets and staff. Consider whether there are sufficient resources not only for introducing a SDL, but also for maintaining the supplies, equipment, and staffing. If your school cannot implement a SDL, provide practice in other simulated environments. More important than where practice occurs is how practice occurs—by students' introduction to theory, observation of a correct demonstration, opportunities for practice with feedback, and demonstration of skill competency before working with patients in clinical practice sessions.

SELECT SITES FOR CLINICAL PRACTICE

Many teaching institutions have arrangements with health facilities for clinical practice sessions. When assessing an existing or a potential new clinical site to ensure students' exposure to a variety of appropriate and relevant clinical experiences, consider the following:

- **Is the environment consistent with the skills being taught?** Ideally, the administration and staff at a clinical practice site should implement the practices according to current standards and provide an environment that is consistent with the skills being taught. For example, when teaching outpatient management, either for IMCI or other skills, it is important to use an outpatient department that also implements IMCI or other practices being taught. If the clinical focus is counseling adolescents regarding reproductive health, choose a clinical site that applies adolescent-friendly practices, such as respecting patient confidentiality. If exclusive breastfeeding is being taught, ensure that there are no infant formula posters on the wards.

- **Is the staff receptive to supervising students?** Most clinic staff are receptive to students coming to their work site to practice applying new skills—they have been in that situation themselves and may be again. If certain staff members do not want to host students, do not use them as clinical instructors because their unwelcoming attitudes can create a negative learning environment.

- **Is there adequate space for the number of students?** The clinical site should be large enough for both the students and teacher(s) without affecting the quality of services. This includes being sure that patients, staff, and students can move through the clinic without interrupting patient flow and service provision. Whenever possible, divide the students into smaller

groups and use a number of sites to avoid overcrowding one clinic.

- **Are there enough patients?** The number of patients should be sufficient to provide all students enough learning opportunities. If no single site has enough patients to accommodate the learning needs of all students, it may be necessary to divide the students into smaller groups and choose several different sites, or stagger their clinical rotation times. It is also possible to rotate students in small groups through different areas of a larger clinical site.

- **Are there appropriate types of patients?** The types of patients are just as important as the numbers of patients. Will patients appropriate for the learning objectives be available? For example, if you are assessing child nutrition, an outpatient department with a heavy pediatric caseload will be the best choice. In teaching maternal health, a sufficient number of births are essential for adequate clinical experiences. For adolescent reproductive health experience, a clinic that serves adolescents is required.

- **Is the site easily accessible for students and tutors?** Is the site close to the teaching institution or easily accessible using public transportation? Will special arrangements need to be made for transportation? Select a site that is as easy to reach as possible.

- **Is this clinical site still meeting learning needs?** If it is an existing site, is it still appropriate? It is important to periodically review whether or not existing clinical practice sites are meeting the learning objectives of a course.

Consider all of these factors when selecting clinical sites. It is most important that the clinical site and staff practice in a manner consistent with what you are teaching.

PREPARE THE CLINICAL PRACTICE ENVIRONMENT

Skills practice may begin in the classroom with an introduction to the skill and a demonstration. Depending on the type of skill, it continues with opportunities for practice either in the classroom or in a simulated practice environment before students perform the skill with patients. What steps do you take before a clinical practice session? What preparations do you feel are most important for giving students a valuable clinical practice experience? Once an appropriate site has been selected, consider all the different aspects of clinical practice as you prepare for the activity—the physical

environment, logistics, patient caseload, and the clinic staff. (See the module *Manage Clinical Practice*.)

Prepare for the clinical practice session by making sure the **physical environment** will support your objectives. Consider the following questions when preparing for clinical practice:

- **Has a room been reserved for gathering the students for discussion or small group activities?** You will need some space for meeting with students before and after each clinical experience. If there are times when there are no patients, the meeting room can be used for the students to participate in case studies, role plays, or other small group activities. Arrange for a room or space before the clinical practice session.

- **Are the essential drugs, supplies, and equipment available?** Each clinical session has its own required supplies. For example, for IMCI, the essential IMCI drugs and supplies must be available for learning to treat the sick child. For many topics related to reproductive and maternal health, certain equipment and supplies must be available for clinical practice sessions. Coordinate with the chosen clinical practice site to ensure that the necessary supplies are available. Clinical facilities must have enough instruments and supplies to provide services to patients on an ongoing basis. It may be necessary to supplement the clinic's basic supplies of consumable items (e.g., gloves) or to provide additional instruments needed for the procedure to be taught. If all of the supplies you need are not available, you may have to ask students to bring some of them. Plan for and obtain necessary supplies before the clinical practice session.

Another important aspect of preparing the clinical practice environment is managing **logistics**. Consider the following as you prepare:

- **Is practice scheduled at a time when patients are available and that is convenient for clinical staff?** You should schedule practice at times when students will have enough exposure to patients but not interfere with regular service provision. Also, consider what time of day will provide students with the most appropriate patients for the related clinical experience.

- **With whom do you need to coordinate clinical practice?** Who in administration, the clinic, or floor management needs to assist you in making arrangements for and conducting clinical practice? Arrange times with site administration and the head of the related floor or area for the clinical visit. If there are assigned clinical preceptors, coordinate with them to be sure

that they will be available to work with students on the chosen day.

Consider what preparations are needed for **adequate and appropriate patient flow** for clinical practice sessions. The patient caseload has already been considered during selection of the clinical site, so preparations involve ensuring appropriate patient caseload and flow for each clinical practice session. Consider the following as you prepare:

- **Is there adequate patient caseload?** Will the number of patients be sufficient to provide all students enough learning opportunities on the clinic day? Will students need to be sent to several sites or rotated through the existing site?

- **Will you need to schedule patients?** Certain skills (Norplant implants and IUD insertion, antenatal and postpartum exams, feeding assessment, breastfeeding counseling) may require scheduling patients to ensure a sufficient caseload. Coordinate with the staff to arrange for a sufficient number of appropriate patients for the clinical practice visit.

- **Are there appropriate types of patients?** The type of patients is just as important as the number of patients. If patients who request certain procedures or who have specified health problems are needed, arrange with clinic staff to schedule appointments or help select appropriate patients from the wards.

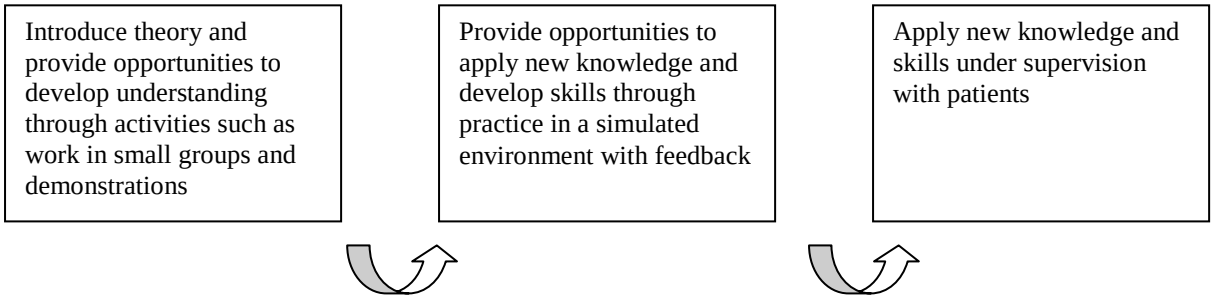
There may be times of either low patient flow or inactivity during clinical practice sessions. Prepare other activities or exercises for the students to work on in case they have time with nothing else to do. Completing related case studies, observing procedures, and doing other small group exercises may provide learning experiences when the clinic is not busy.

Perhaps the most important aspect of preparation is selecting and preparing the **clinical staff** who will assist with clinical practice sessions. Their assistance ranges from supervising clinical practice as clinical instructors on-site, to working alongside students demonstrating procedures and assisting, supervising, and providing feedback to students as they work with patients. Selecting and preparing clinical instructors and staff are essential to creating an effective clinical practice environment. This subject is discussed in detail in *Manage Clinical Practice.*

SUMMARY

You should prepare for both classroom and clinical teaching by remembering that classroom and clinical experiences build on each other, from the introduction of theory, explanation and demonstration of skills, practice of skills in a safe environment, and finally to practice with patients. Prepare the classroom environment by ensuring that students are able to see demonstrations and any presentations involving visual aids and complete any assigned group learning activities. Prepare any homework or classroom learning activities for your class. Create a simulated environment for demonstration and opportunities for small group activities and practice with feedback. Select and prepare the clinical environment by ensuring adequate supplies for the related skills, adequate and appropriate patient caseload and flow, and informed clinical instructors. Refer to the diagram below illustrating the process of learning from the classroom to the clinic.

Figure 4-2. The Process of Learning



MODULE FOUR JOB AID:
CHECKLIST FOR PREPARING THE TEACHING ENVIRONMENT

Use this checklist as a reminder as you prepare for classroom teaching and clinical practice.

STEPS FOR PREPARING THE TEACHING ENVIRONMENT	*Check (√) when completed*
PREPARING THE CLASSROOM ENVIRONMENT	
1. Is the space large enough for the number of students?	
2. Is the room properly heated or cooled? Does it need a fan or space heater?	
3. Is there enough lighting?	
4. Does the seating need to be rearranged?	
5. Is the audiovisual equipment available and working?	
PREPARING THE PHYSICAL ENVIRONMENT	
1. Is the space large enough for the number of students?	
2. Has a room been reserved for gathering students for discussion or small group activities?	
3. Are essential drugs, supplies, and equipment available?	
LOGISTICS	
1. Is the clinical practice session scheduled at a time convenient for clinical staff and when appropriate patients are available?	
2. Have the administration at the clinical practice site and related staff been notified of the students' arrival times?	
PATIENTS	
1. Will there be enough patients for the number of students?	
2. Will the appropriate patients be available? Are they scheduled, if necessary, or will they attend the clinic during practice?	
3. Are alternative but related exercises or activities prepared in case there are periods of inactivity for the students?	

MODULE FIVE

PREPARE AND USE VISUAL AIDS

INTRODUCTION

Think about the last presentation you attended. What visual aids did the presenter use? Were they effective? Did they hold your interest and emphasize important points? What types of visual aids do you use in your teaching? Visual aids supplement learning activities by highlighting important points or key steps or tasks. Because visual aids help to communicate information clearly and maintain students' interest, they are among your most useful teaching tools. Writing on a board or using diagrams in a presentation, for example, provides a visual reference for students and helps them to absorb more information. Visuals are useful not only for presentations, but also for demonstrations and introductions or summaries of clinical practice sessions.

Main Objective

After completing this module, you will be able to prepare and use a variety of visual aids.

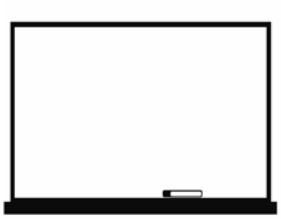
Supporting Objectives

To meet this objective, you will:

- Use a writing board
- Use a flipchart
- Prepare and use transparencies
- Prepare and use slides
- Use video
- Use a computer to prepare and project a presentation

USE A WRITING BOARD

The writing board is the most commonly used visual aid. It can display information written with chalk (chalkboard or blackboard) or special pens (whiteboard). You can use a writing board for announcements, informal discussions, brainstorming sessions, and note taking. A writing board is also an excellent tool for illustrating subjects like anatomy and physiology and for outlining procedures.



Some **possible uses** of a writing board:

- Document ideas during discussions or brainstorming exercises.
- Draw a sketch of anatomy or a physiological response.
- Note points you wish to emphasize.
- Diagram a sequence of activities for working through the process of making a clinical decision.

The **advantages** of using a writing board:

- Writing boards are available in most classrooms and do not require electricity.
- They are inexpensive and easy to use.
- They are excellent for brainstorming, problem solving, making sketches, diagrams, charts, and lists, and other participatory activities.

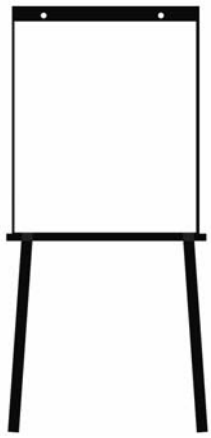
The following are some **disadvantages** of using a writing board:

- The board cannot hold a large amount of material.
- Writing on the board is time-consuming.
- It is difficult to write on the board and talk to students at the same time.
- In large classrooms, it is difficult to write large enough so that students in the back of the room can easily read what is written.
- There is no permanent record of the information presented.

Most teachers use a writing board of some kind. Sometimes the board will look messy at the end of a presentation, with untidy diagrams and no pattern to the words. Before you start, decide what you will illustrate on the board. During the presentation, write the key words or phrases in order, according to the structure of the presentation. Remember that students tend to copy the words and the layout as they appear on the board. Make sure that what you write on the board is what you want the students to write in their notes. Here are some additional **tips**:

- Keep the board clean.
- Use chalk or pens that contrast with the background of the board so that students can see the information clearly.
- Make text and drawings large enough to be seen in the back of the room.
- Underline headings and important or unfamiliar words for emphasis.
- Do not talk while facing the board.
- Do not block the students' view of the board; stand aside when you have finished writing or drawing.
- Allow sufficient time for students to copy the information from the board.
- Summarize the main points at the end of the presentation.

USE A FLIPCHART



A flipchart is a large tablet or pad of paper, usually on a tripod or stand. You can use a flipchart for displaying prepared notes or drawings as well as for brainstorming and recording ideas from discussions. You can also use flipcharts before and after clinical practice visits to introduce objectives and group exercises, or to summarize the experience.

The **possible uses** for a flipchart are the same as those listed for the writing board, but also include the following:

- Note objectives or outcomes before or after clinical practice sessions.
- Create flowcharts to work through clinical decision-making in different situations, such as during a complicated labor and childbirth.
- Record discussions or ideas during small group exercises.

The **advantages** of using a flipchart:

- Flipchart stands and paper are relatively inexpensive, easy to move from room to room, and do not require electricity.

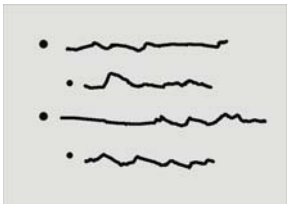
- They are small enough that several may be used simultaneously (e.g., for small group work).
- They are suitable for use by both teachers and students.
- Pages of information can be prepared in advance and revealed at appropriate points in the presentation.

Disadvantages of the flipchart are essentially the same as those listed for the writing board. Flipcharts, however, provide a permanent record of the information presented.

Tips for using a flipchart:

- Make it easy to read. Use bullets (•) to highlight items on the page, leave plenty of white space, and avoid putting too much information on one page. Print in block letters using wide-tipped pens or markers.
- Make the flipchart page attractive. Use different colored pens to provide contrast, and use headings, boxes, cartoons, and borders to improve the appearance of the page.
- Have masking tape available to hang flipchart pages on the walls during brainstorming and problem-solving sessions.
- To hide a portion of the page, fold up the lower portion of the page and tape it; when you are ready to reveal the information, remove the tape and let the page drop.
- Face the students, not the flipchart, while talking.
- When you finish with a flipchart page, tape it to the wall where you and the students can refer to it.

PREPARE AND USE TRANSPARENCIES



The overhead projector is one of the most commonly used and most versatile pieces of audiovisual equipment. This visual aid projects images onto a screen using transparency film. Teachers should pay attention to the amount, size, and clarity of writing and images they present on an overhead transparency. Writing and images should not be too small, overcrowded, or difficult to read.

Transparencies are very useful for presenting a large amount of information (e.g., during an interactive presentation). You can use

transparencies to outline the main topics and highlight important points throughout a presentation. (See the sample transparencies at the end of this module.)

Following are some **possible uses** for transparencies:

- Provide an outline for the teacher to follow in discussing the main points of a presentation.
- Show images, illustrations, charts, or diagrams to support a topic.
- Provide visual support to students as they make their own presentations and oral reports.
- Show them to clinical practice sites to describe practices and procedures to tutors or students.

The **advantages** of using transparencies are:

- When they are handwritten, they can be prepared quickly and easily.
- They can be stored and reused in the future.
- The projector is easy to use, and can be used in almost any room that has electricity.
- When prepared in advance, they save the teacher time (writing on a board or flipchart takes more time than talking) and allow more time for discussion with students.
- Points gathered from a discussion can be immediately written on a transparency.

The primary **disadvantage** of transparencies is that text and images cannot be projected directly from the printed page, but must be enlarged and copied onto a transparency sheet. Also, you must be careful that you do not stand between the projector and the screen and block the students' view.

There are three ways to **produce** transparencies:

- Use permanent or non-permanent (water soluble) pens to create text or drawings on plastic or acetate sheets.
- Use a copy machine with transparency film designed for copiers. Any original document that produces a copy of acceptable quality on paper will produce an equivalent copy on transparency film.

- Use a computer and printer. The information to appear on the transparency is produced on the computer using word processing or graphics software. The page is then printed on special transparency film.

When you **prepare** transparencies:

- Create a transparency in landscape (horizontal) rather than portrait (vertical) format (see samples at the end of this module). The information is easier to read when presented in a landscape format.

- Be consistent. Use the same general style and tone throughout.

- Proofread. You are more likely to catch errors if you proofread on paper before creating the transparencies.

- Limit the information on each transparency to one main idea that can be grasped in 5–10 seconds.

- State the main idea in the title. Use about three to five bullets per slide. Limit a bulleted item to six to eight words. Use no more than seven lines of text.

- Whenever possible, use pictures, charts, or graphs to support or replace text. Bar graphs, pie charts, and line graphs are effective tools to show trends and statistics. Photographs and line drawings are useful for showing clinical signs and symptoms and demonstrating clinical procedures.

- Make graphics and drawings large enough to be seen easily in the back of the room. Use large lettering (at least 5 mm tall, preferably larger if printing, or 18 point or larger if using a computer) as seen in the sample transparency at the end of this module. Do not use ordinary typed materials or a page from a book unless they are enlarged, because the transparency will be difficult to read.

- Print your text. It is easier to read than script handwriting. If you are using a computer to prepare transparencies, use only one typeface (font) per slide. Use italics or bold to emphasize points rather than using another font.

- Use overlays to present complex images or diagrams. An overlay is one transparency placed over another. For example, in a presentation on female anatomy, you may use one transparency to show the uterus and a second transparency, which is laid over the first, to show the surrounding organs.

- Number the transparencies to keep them in the correct order (the number can be written on the transparency itself or on its outside frame).

- Store the transparencies in a box with a lid, an envelope, or a "pocket" made from folders or sheets of clear plastic to protect them from dust and scratches.

Tips for using an overhead projector:

- Before the presentation begins, you should locate and check the operation of the on/off switch and make sure the bulb is working. Ideally, have an extra projector bulb available.

- Before beginning the presentation, focus the projector and use a transparency to check the position of the image on the screen.

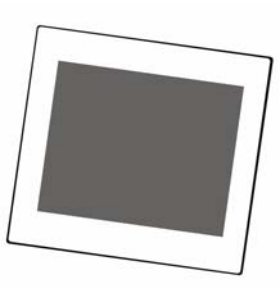
- Once the projector is on and the image is on the screen, move away from the projector to avoid blocking the students' view of the screen.

- Face the students, not the screen, while talking.

- Use a pointer or pencil to show one point at a time. Control the pace of the discussion by covering selected information with a piece of paper and revealing new information when you are ready.

- Allow plenty of time for the students to read what is on the screen and take notes, if necessary.

PREPARE AND USE SLIDES



The 35 mm slide projector is a visual aid that offers many of the same advantages as the overhead projector (although computer slides and presentations as described later in this module are rapidly replacing 35 mm slides). Color slides of clinical signs or features, radiographs, results of clinical investigations, or other aspects of clinical management can be prepared for repeated use. As with overhead transparencies, you should pay attention to the size and complexity of the words and images, the font, and the colors used. Slide sets covering specific topics or procedures are sometimes provided as part of a package of teaching materials.

Some **possible uses** for slides are:

- Demonstrate clinical signs that are rarely seen during clinical practice. For example, severe palmar pallor, severe wasting, sunken eyes, and measles rash can all be shown using slides.

- Demonstrate procedures correctly. For example, slides can be used to demonstrate how to pass sharps safely, how to correctly set up an operating theater, or how to repair a vaginal tear.

- Demonstrate and contrast normal and abnormal conditions.

The **advantages** of using slides are that they:

- Are relatively inexpensive and easy to produce, and can be processed locally

- Are good for showing individual (detailed) steps of a clinical procedure or close-ups of equipment

- Can clearly show signs and symptoms of disease

- Can show both text and images (photographs, illustrations, diagrams, charts, graphs, etc.)

The **disadvantages** of using slides are:

- Slide projectors are much more expensive than overhead projectors.

- Slides are not updated as easily as transparencies.

When **preparing** slides:

- Limit each slide to one main idea; detailed information should be put into a handout, not on a slide.

- Make sure slides support the text or objectives. Slides should clearly demonstrate their objective.

- When you use a slide to show a clinical sign, make sure that it clearly shows only one sign, demonstrates abnormal compared to normal (if applicable), has adequate color and lighting so that it provides a clear example, and very clearly captures the sign it aims to demonstrate.

- When you use slides to demonstrate a procedure, make sure it is shown correctly. Never show or demonstrate a task or activity incorrectly.

- Be sure that the material on the slide is legible. A good rule is that if a slide can be read by the naked eye—without a projector—it will be legible to students in the back of the room when it is projected.

- Number the slides in pencil or pen on the mounting frame.

The following are some **tips** for using a slide projector:

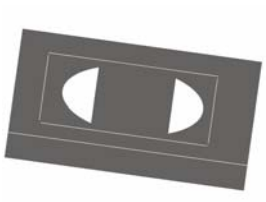
- Arrange the room so that all students can see the screen; make sure that there is nothing between the projector and the screen.

- Set up and test the slide projector before the students arrive.

- Determine if all or some of the lights can be left on during the slide presentation; this will help students pay attention and make taking notes easier.

- During the presentation, avoid rushing through a series of slides. This can be very frustrating for the students. Take time to view and discuss each slide. When appropriate, ask students questions about what they are seeing on a slide.

USE VIDEO



Videos can be very versatile visual aids. Videos can be used by a single student for individual learning, by a group of students for independent learning, or by the teacher for involving students in a discussion. One of the most important aspects of teaching a skill is showing how an expert would perform it. Video is particularly useful for this purpose. A bank of prerecorded videos provides a valuable resource for demonstrating various aspects of clinical practice. When the resources are available, you can use video to record individual students' performances and provide valuable feedback on their acquisition of clinical skills.

Note: Video can also be recorded on a CD-ROM to be played on a computer and on a DVD to be played on a DVD player. Video from a CD-ROM or DVD can also be projected onto a screen, allowing a large group of students to see the video. When this approach is used, external speakers may be needed so that all students can hear the audio portion of the video.

Possible uses for video:

- Provide an overview or introduction to a topic to stimulate interest and discussion.
- Allow the teacher to model a technique or procedure, such as how to counsel adolescents about reducing their HIV risks, assess breastfeeding attachment, or insert an IUD, in a clear, step-by-step manner.
- Allow students to practice identifying clinical signs such as sunken eyes and fast breathing.

The **advantages** of using video are:

- Videos capture events that the eye alone would not see. For example, a video camera attached to a laparoscope can project onto a television screen the details of tubal occlusion or gall bladder surgery.
- Individual steps of a clinical procedure or technique can be shown by slowing down the video or stopping (pausing) to analyze a single frame. Use of these techniques allows students to watch and emulate a step-by-step demonstration of a technique, such as insertion of Norplant implants, at their own pace.
- Commercially developed videos can be purchased or borrowed.
- Videos can show rare signs or symptoms such as severe wasting or unresponsiveness.
- They can be used as a demonstration tool at any time; students do not always have to travel to a clinical setting for a demonstration.
- By showing interactions with patients, videos can demonstrate communication skills such as history taking, counseling, or educating patients.

There are also some **disadvantages** to using video:

- Commercially prepared videos are often outdated and may show techniques that are inconsistent with currently approved practices.
- Videos may have been edited and therefore omit or rearrange key training steps in a procedure.
- Students may be distracted by cultural differences such as accents, appearance, or communication customs.

Tips for using videos:

- In the classroom, use several short video segments with pauses in between for explanation or discussion, rather than one long video.
- Preview the videotape to ensure that it is appropriate for the students and consistent with the course objectives.
- Make sure that the information presented in the video is up-to-date with current practices and standards. If there are some differences, be sure to tell the students about them before showing the video. If there are considerable differences, do not show the video.
- Before the classroom session, check to be sure that the video is compatible with the video player. Run a few seconds of the tape to ensure that everything is functioning properly. Cue the video to the beginning of the program, or to the section of the video that you will show.
- Arrange the room so that all students can see the video monitor or screen and hear the audio.
- Prepare the students to view the video:
  - State the objective.
  - Give the students an overview of the content they will see on the video.
  - Focus students' attention by asking that they look for a number of specific points as they watch the video.

Remember: Use videos as an interactive tool. When appropriate, stop the video to point out things the students should notice, or ask questions to check their understanding. Discuss the video after it has been shown. Review the main points that the students were asked to watch for as they viewed the video. **This will make the video a much more effective teaching tool than if the students watch it without your guidance.**

USE A COMPUTER TO PREPARE AND PROJECT VISUAL AIDS

You can use computer software to create transparencies, 35 mm slides, or electronic slide presentations that can be shown with a projection unit. There are many graphic software packages that you can use to make visually interesting transparencies or presentations, following the same design rules as for overhead transparencies. You can also add high-quality images, video files, and sound clips to your presentations.

The presentations may be projected onto a screen using the computer and a special projection unit, or viewed by individuals or small groups on a standard computer monitor.

Possible uses for computer-generated presentations:

- Use in the same way as transparencies and 35 mm slides to support a presentation. They require more advanced technology, but the advantage is that they can include photographs, video clips, and other animations that can clearly demonstrate a clinical sign or procedure.

- Create notes or handout sheets that include the presentation along with space for notes. Slide presentations can be transferred into word processing programs and used to create text-based materials.

There are many **advantages** to using a computer to prepare and project visual aids:

- You can save the presentation files on the computer and update the information easily. You can even add material during a lecture as new points are raised during interaction with students.

- It is less expensive than producing 35 mm slides and faster (and more versatile) than preparing printed overhead transparencies.

- Most graphics software is easy to use and creates attractive, interesting presentation materials.

- You can prepare a presentation and create transparencies, a projected presentation, and related handout or note sheets easily.

There are some **disadvantages** to using a computer to prepare and project visual aids:

- Computers can be expensive and may require some maintenance. In addition, you will need electrical outlets, extension cords, and voltage surge protectors.

- Sometimes computers “crash” or “freeze” and information can be lost if not saved.

When using a computer to develop a presentation, keep the presentation simple and graphics clear. Refer to “Prepare and Use Transparencies” in this module for information on preparing a transparency, because this information applies to creating computer-

generated presentations as well. Sample slides or transparencies are included at the end of this module. Keep the following **tips** in mind:

- Make sure that technical assistance is available to deal promptly with problems. Practice using the computer program for creating and projecting your presentation until you are comfortable with it.

- Avoid busy or confusing backgrounds. Use a color for the text that has a very high contrast with the background. A simple white background with dark lettering is very effective.

- If you are preparing a projected presentation, minimize the transitions between slides. Use sound effects sparingly and only to emphasize a point. If there is animation, it should be used consistently throughout the presentation.

- Remember that your slides should highlight your key points. They should not contain the full text of the presentation.

- Charts and tables should be large and simple for the message to be clear.

- Always save the presentation on the computer's hard drive and on a diskette or CD-ROM in case something happens to the computer.

SUMMARY

No matter which visual aids you use, remember the following:

- **Keep it simple.** Each transparency, flipchart, or slide should present only one main point, with supporting information in a bulleted list. This will help students remember important information.

- **Keep it relevant.** Use up-to-date videos and slides. Present information and demonstrate skills in a manner consistent with best practices.

- **Keep it focused.** Prepare or use visual aids that support the learning objectives and highlight main points.

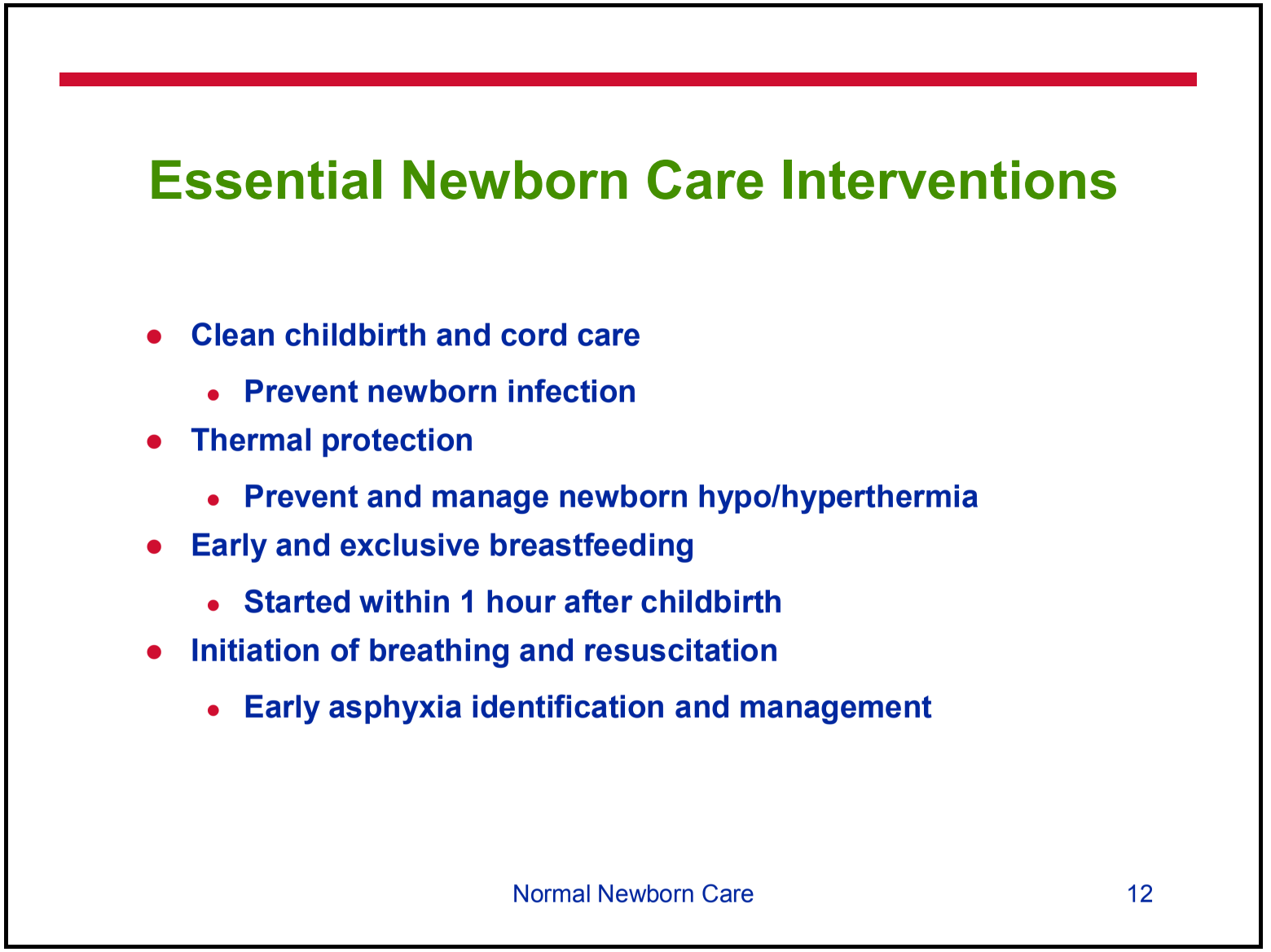
Sample 5-1. Example of a Transparency from a Session on Family Planning

Family Planning: Lactational Amenorrhea Method (LAM)

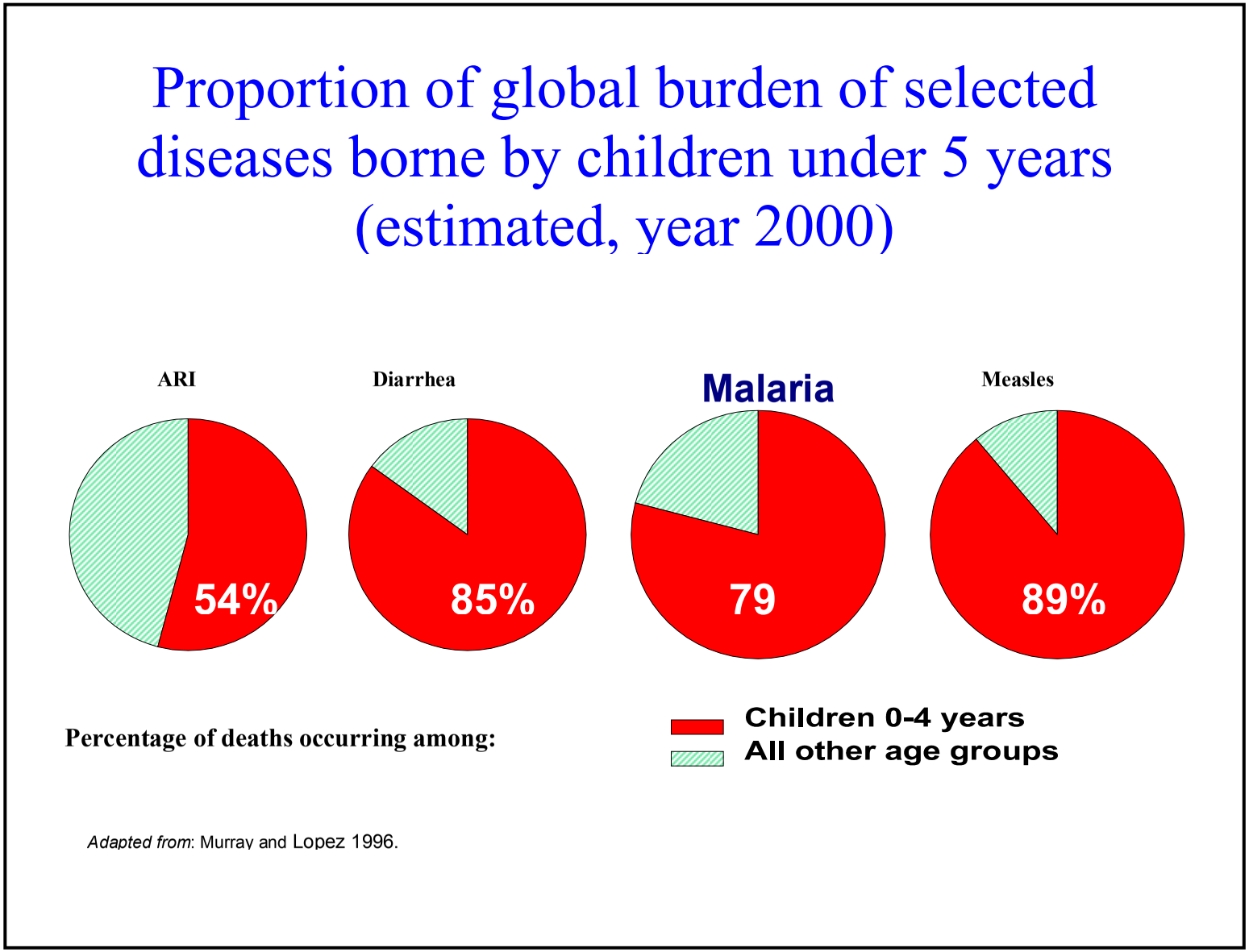
- Effective (1-2 pregnancies per 100 women during first 6 months of use)
- Effective immediately
- Does not interfere with sexual intercourse
- No systemic side effects
- No medical supervision necessary
- No supplies required
- No cost involved

2

Sample 5-2. Example of a Transparency from a Session on Normal Newborn Care



Sample 5-3. Example of a Slide from an IMCI Course



MODULE FIVE JOB AID:
GUIDE FOR USING VISUAL AIDS

Follow these steps to select and use visual aids:

1. Select one or more of the following visual aids for use during your course:

   - Writing board
   - Flipchart
   - Overhead transparencies
   - Slides
   - Video
   - Computer presentation

2. Follow the guidelines in this module to develop your visual aids.

3. Practice using your visual aids in advance.

4. Set up or prepare your visual aids in the room before the students arrive.

5. Check that all audiovisual equipment is working before the students arrive.

6. Make sure that all students can see the writing board, flipchart, screen, and video monitor.

7. Prepare any copies of handouts related to the visual aids in advance and have them in the room when the students arrive.

8. When appropriate, have questions or exercises (e.g., case studies, role plays) prepared for use after using the visual aids.

9. When appropriate, include on the tests you give the students some questions related to the visual aids (e.g., key points in a video or in a computer presentation).

10. Make notes about how effective the visual aids were in helping the students learn, and how you might use the visual aids in future presentations.

MODULE SIX

PREPARE AND DELIVER INTERACTIVE PRESENTATIONS

INTRODUCTION

Now that you have planned your course and prepared the teaching environment, it is time to present information to your students. You may decide to give an illustrated lecture in which you deliver information through an interactive oral presentation, often using visual aids to support the presentation. Because you may present information formally in a classroom or informally during a clinical practice session, the term "interactive presentation" is used rather than illustrated lecture. Delivering information through an effective interactive presentation can be one of a teacher's most exciting and rewarding experiences.

This module focuses on introducing, planning, delivering, and summarizing interactive presentations. Interactive presentations maintain students' interest and are more likely to be successful in helping students reach the learning objectives. It is important to use appropriate visual aids, questioning techniques, and group activities to make your presentations more interactive. You will find detailed information about facilitating group activities such as case studies, role plays, brainstorming, and discussions in the module *Facilitate Group Learning.* Use the job aid supplied at the end of this module to assess your presentation skills.

Main Objective

After completing this module, you will be able to prepare and deliver interactive presentations.

Supporting Objectives

To meet this objective, you will:

- Plan a presentation
- Introduce a presentation
- Use effective presentation skills
- Use questioning techniques during a presentation
- Summarize a presentation

PLAN A PRESENTATION

What are the first things you must do before giving a presentation? Plan and organize. Careful planning makes for interesting, effective presentations that are easy to deliver. You can add group learning activities (e.g., case studies, role plays, brainstorming) to support or enhance any presentation, whether short or long. No matter what the learning setting or whether you plan a long or short presentation, the process of planning for the presentation does not change. Include the following in your presentation plan:

- The learning objective(s) (i.e., what students should know and be able to do after the presentation)
- An outline of key points written on paper or put on transparencies or flipchart pages, or projected using a computer
- Questions to involve the students
- Reminders of any planned activities during the presentation, use of visual aids, group learning activities such as case studies or role plays, and the like
- Summary questions, comments, or activities

The learning **objectives** outline the information that you will cover. Refer to *Develop Objectives for Learning* for detailed information on writing these objectives. An **outline of key points** allows you to keep track of these points without having to read the content to the students (guaranteed to put them to sleep). You should note **questions** for the students at appropriate places in the outline to help guide you through the presentation. Use **reminder** notes about the use of visual aids, class activities, or small group activities to prompt you during the presentation. Planning **summary questions, comments, or activities** will ensure that you do not forget to emphasize the main points and link the information back to the objectives during your summary of the presentation.

INTRODUCE A PRESENTATION

The first few minutes of your presentation are critical in stimulating students' interest and providing clear information about what they should expect from the presentation. Use an introduction that will:

- Capture the interest of the entire group and prepare students for the information to follow

- Make students aware of the objectives and expectations

- Help to create a positive learning climate

Following are a few examples of ways to introduce a presentation. Vary the introductions to your presentations to keep students interested.

- **Review the objectives.** Introduce the topic by a simple restatement of the objectives to inform the students of what is expected of them.

  Example: "Because our objective today is to promote exclusive breastfeeding, this afternoon we will learn how to counsel women about breastfeeding. Any questions before we begin?"

- **Relate the topic to previously covered content.** When a number of presentations are required to address one subject, relate each presentation to previously covered content. This helps the students understand how each presentation relates to the overall topic. If possible, link topics so that the concluding review or summary of one presentation will help to introduce the next topic.

  Example: "When we finished yesterday, we were discussing assessing and classifying cough or difficult breathing in the sick child. Today we will move on to assessing and classifying diarrhea in the sick child."

- **Share a personal experience.** Sharing a personal experience that is relevant to the topic can create interest, emphasize a point, or demonstrate how the topic relates to a future career.

  Example: "Today we will discuss managing postpartum hemorrhage. Before we begin, I would like to share with you my first experience with a postpartum hemorrhage. The patient was...."

- **Relate the topic to students' experiences.** Many topics can be related to situations most students have experienced. This technique catches the students' attention and helps them learn by connecting the new information to familiar situations.

  Example: "Our next topic is confidentiality in counseling. Whether you are counseling adolescents or adults about family planning choices, confidentiality is essential. When you see a healthcare provider, how do you feel about your privacy? Have

you ever heard your case discussed in front of other patients? How did it affect you?"

- **Use a case study or problem-solving activity.** Case studies and problem-solving activities focus attention on specific situations related to the teaching topic. Having the students work on the activities in small groups usually increases their interest in the topic.

  Example: "Our next topic is counseling the mother about feeding a child during illness. Please read the case study on page 23 of your course handbook and work with your group to answer the questions on the next page. You have 10 minutes to complete the activity. Assign someone in your group to record and report."

- **Use an imaginative transparency or slide.** Keep a file of topic-related cartoons, signs, slogans, acronyms, and similar items. When appropriate, use these to generate interest and a few smiles at the same time.

- **Give a classroom demonstration.** Most clinical courses involve equipment, instruments, and skills that need to be demonstrated. Beginning with a demonstration is an excellent way to increase students' interest.

- **Use a content expert.** Speakers who have a specific area of expertise often add credibility to a presentation. If you ask a content expert to speak, choose one who will give an effective presentation and stimulate the students' interest in the topic.

- **Use a game, role play, or simulation.** Games, role plays, and simulations can generate tremendous interest through direct student involvement, and therefore are useful for introducing topics.

  Example: "We'll be discussing the importance of adequate education about expected side effects for temporary family planning methods. Watch this short role play about a woman who was not adequately counseled about Depo-Provera and bleeding."

- **Relate the topic to future work experiences.** Try relating objectives, content, and activities of the course to real work situations. Students' interest in a topic will increase when they see a relationship between what they are learning and their work.

  Example: "Today I will be demonstrating how to give an injection. You will use this skill over and over again in your work."

USE EFFECTIVE PRESENTATION SKILLS

Effective presentation skills are just as important as careful planning. No matter what setting you are in when delivering information (e.g., classroom, clinic, simulated practice environment), the same presentation skills apply. Using questioning techniques and well-designed visual aids such as transparencies, flipcharts, and videotapes makes your presentations more effective. Refer to *Prepare and Use Visual Aids* for more information on this subject.

Below are some techniques you can use to make your presentation effective:

- **Follow a plan and use an outline.** An outline includes the presentation objectives, introduction, key points, questions to ask students, visual reminders, and summary points. Refer to "Plan a Presentation" earlier in this module.

- **Communicate in a way that is easy to understand.** Use familiar words and expressions, explain new terms, and interact with the students during the presentation by asking questions or seeking responses. Project your voice and speak clearly so that everyone can hear you.

- **Interact with students.** Use eye contact and students' names to maintain their attention. Use eye contact to "read" faces. Ask students both easy and more challenging questions. Use the students' names as often as possible during questioning, when providing positive feedback, and when referring to comments previously made by students.

- **Display enthusiasm about the topic and its importance.** Smile, move around the room with energy, and interact with the students. Your enthusiasm and excitement will directly affect the students' enthusiasm. When appropriate, use humor related to the topic.

- **Use appropriate visual aids.** These visual aids will help you explain complex topics, highlight key points, and add some variety to your presentations.

- **Provide positive feedback.**
  - "Very good point, Ilka!"
  - "Thanks for sharing that story."
  - "Anne Marie has made an excellent comparison!"

- **Provide smooth transitions between topics.** Within a given presentation, a number of separate yet related topics may be discussed. If you suddenly change from one topic to another, students may become confused and not know how the different topics fit together into a bigger picture. Ensure that the transition from one topic to the next is smooth. You can accomplish this by doing any of the following **before moving on to the next topic**:
  - Presenting a brief summary
  - Asking a series of questions
  - Relating content to practice or using an application exercise (case study, role play, etc.)

USE QUESTIONING TECHNIQUES DURING A PRESENTATION

When possible, you should ask questions of the students during a presentation. You can use a variety of questioning techniques to keep students interested in the session. Asking and answering questions helps students to develop problem-solving skills, checks their understanding, and engages them in learning. **The key in asking questions is to avoid a pattern.** Use the techniques described below to provide variety and maintain the students' attention.

- **Ask a question of the entire group.** The advantage of this technique is that those who wish to volunteer may do so. Some students, however, may dominate while others fail to participate. Be sure to encourage everyone to answer questions.

  Example: "Would someone please tell me why we...?"

- **State the question, pause, and then direct the question to a specific student.** All of the students must listen to the question in case they are asked to respond. The primary disadvantage is that the student receiving the question may be caught off guard and ask you to repeat the question.

  Example: "What type of instrument are we using today? Rosminah, can you tell us?"

- **Target the question to one student by using that person's name before asking the question.** The student knows the question is coming, can concentrate on it, and respond accordingly. The disadvantage is that once a specific student is targeted, other students may not concentrate on the question.

These are some additional questioning techniques that you can use to make your presentations more interesting:

- **Use students' names during questioning.** This is a powerful motivator and also helps to keep all students involved.

- **Repeat a student's correct response.** This provides positive reinforcement to the student and allows the rest of the group to hear the response.

  Example: "Juan is correct. A child with a tender swelling behind the ear would have the classification of mastoiditis."

- **Provide positive reinforcement for responses.** This helps to keep the students interested in the presentation. Positive reinforcement may take the form of praising a student, displaying a student's work, using a student as an assistant, or using positive facial expressions, nods, or other nonverbal actions.

  Examples: "I couldn't have said it better!" or "Very good answer, Alain!"

- **Respond to partially correct answers.** Compliment the student for the parts of answers that are partially correct, and correct the inaccurate parts, or redirect a related question to that student or to another student.

  Examples: "I agree with the first part of your answer; however, can you explain...?"

  "You almost have it! Lydia, can you give Virgilio some help?"

- **Restate the question.** When a student gives an incorrect response, make a noncritical response and restate the question to lead the student to the correct response.

  Examples: "Sorry, Silvia, that's not correct. Let's look at the situation in a different way. Suppose we...."

  "That's not quite what I was looking for. Let's go back to our previous session. Raj Kumar, think about the effect on the patient's blood pressure. Now if we...."

- **Redirect the question to another student.** When a student makes no attempt to respond, the teacher may wish to follow the above technique or redirect the question to another student. After receiving the desired response, be sure to draw the original student back into the discussion.

Example: "Jose, can you add any other benefits of IUD use to those that Enrique has listed?"

- **When students ask you questions, respond in one of the following ways**:
  - Answer the question.
  - Respond with another question.
  - Refer to a later section in the course when the question will be answered.

Example: "That's an excellent question, Alex. In fact, our discussion in the next class session will focus on some of the issues related to adolescents and sexual risk behaviors. To answer your question briefly.…"

Two final cautions about questions from students:

- When you are unable to answer a question, acknowledge it and admit to not knowing the answer. After the session, you should research the answer and share it during the next session.

- When students ask questions that will take the discussion away from the topic, decide whether answering and discussing the question will be valuable. When students will benefit, and there is enough time, you may wish to follow the new line of discussion. If not, move the discussion back to the topic.

> **Remember**: Use questions during presentations, clinical demonstrations, small group discussions, and in other situations to maintain students' interest, check their understanding, and help them develop problem-solving skills. It is important not to criticize incorrect answers harshly; you want to help students feel confident in expressing their thoughts, opinions, and questions.

SUMMARIZE A PRESENTATION

Generally, the teacher gives a summary at the end of a presentation to provide a review of the presentation's main points. When course topics are complex, however, use periodic summaries throughout the presentation to ensure that students understand before moving ahead to new material or a new topic. In addition, summaries can be used effectively before demonstrations or breaks that interrupt the presentation. The summary should be brief, highlight main points, and involve the students.

Keep in mind the following summary techniques:

- **Ask the students if they have questions.** This gives students an opportunity to clarify their understanding.

- **Ask the students questions.** This helps students to focus on the major points of the presentation.

- **Administer a practice exercise or test.** This gives students an opportunity to demonstrate their understanding of the material. After the exercise or test, use the questions as the basis for a discussion by asking for correct answers and explaining why each answer is correct.

- **Use a game to review main points.** One popular game is to divide students into two teams, give each team time to develop review questions, and then allow each team to ask questions of the other. You moderate by judging the acceptability of questions, clarifying answers, and keeping a record of team scores. This game can be highly motivational and can serve as an excellent summary at the same time.

SUMMARY

No matter where you are presenting information, remember the following keys to a successful presentation. Refer to the job aid that follows to assess your presentation skills.

- **Define learning objectives.** Decide what students should know or be able to do after this presentation.

- **Plan your presentation.** Create an outline based on your objectives to help organize the content and keep focused. The outline should include key points, questions, reminders of activities and visual aids, and summary points.

- **Introduce each presentation.** A good introduction grabs attention and clearly communicates the objectives of the session. Vary introductions used in different presentations to maintain students' interest.

- **Use effective presentation skills.** Involve students by asking questions, moving around the room when possible, and maintaining eye contact. Provide clear transitions between topics and summaries.

- **Use questioning techniques.** Asking questions is essential to maintaining students' interest, checking their understanding,

and developing their problem-solving skills. It helps students assess information and learn to make appropriate choices.

- **Summarize your presentation.** A good summary supports the presentation's main points and reinforces the most important information.

MODULE SIX JOB AID:
PRESENTATION SKILLS CHECKLIST

Use this checklist to assess your presentation skills. Check each skill that was performed. Which areas need improvement?

PRESENTATION SKILL	*Check (√) when completed*
PLANNING THE PRESENTATION	
1. Review the objectives.	
2. Prepare an outline of key points and presentation aids (such as visual aids).	
3. Note questions for students.	
4. Note reminders for planned activities.	
5. Note reminders to use specific visual aids.	
6. Note summary questions or other activities.	
INTRODUCING THE PRESENTATION	
1. State the objective(s) of the presentation as part of the introduction.	
2. Use a variety of introductions to capture interest, make students aware of the objectives, and create a positive learning climate.	
3. Relate the content to previously covered and related topics.	
USING EFFECTIVE PRESENTATION SKILLS	
1. Follow a plan and use an outline.	
2. Communicate clearly with students. Project your voice, move about the room, provide clear transitions between topics, and maintain eye contact.	
3. Interact with students by asking and responding to questions, using their names, and providing feedback.	
4. Use visual aids to illustrate and support main points.	
USING QUESTIONING TECHNIQUES DURING A PRESENTATION	
1. Target questions to the group and to individuals.	
2. Provide feedback and repeat correct responses.	
3. Use students' names.	
4. Redirect questions that are partially or totally incorrect until the correct answer is revealed.	
SUMMARIZING THE PRESENTATION	
1. Stress the main points.	
2. Relate information to the objectives.	
3. Provide an opportunity for questions.	

Strengths of my presentation:

_____

_____

_____

_____

Areas I would like to improve:

_____

_____

_____

_____

MODULE SEVEN

FACILITATE GROUP LEARNING

INTRODUCTION

Group learning activities can be used during classroom and practical sessions to help students build knowledge, skills, and appropriate attitudes. In this module, you will learn about five useful group learning activities: role plays, case studies, clinical simulations, brainstorming sessions, and discussions. Group learning methods often overlap. For example, a clinical simulation might include a role play or a case study. Furthermore, some group learning activities, such as case studies, also can be used for individual learning.

Some group learning activities are more appropriate than others for achieving specific learning outcomes. For example, role plays are particularly good for exploring attitudes and developing communication skills. Clinical simulations are especially effective for developing decision-making skills. In the module *Develop Objectives for Learning,* you learned how to develop learning objectives for your course. Refer to the learning objectives that you already defined to decide which group learning activities to use. For example, if one of your objectives is that students will demonstrate a nonjudgmental attitude when counseling patients, a role play would be an appropriate group activity to help students develop this behavior. If one of your objectives is that students will demonstrate an ability to manage a woman with first trimester bleeding, a series of case studies would be an appropriate group activity to help students learn this skill.

Group learning activities require careful planning and preparation. Large numbers of students, and limited space, facilities, and time all present challenges for group learning. Nevertheless, the effort to incorporate these activities into your course will be worth the investment in terms of learning outcomes. Group learning activities allow students to interact with teachers and other students, share ideas and questions, check their understanding, and develop decision-making and problem-solving skills.

Main Objective

After completing this module, you will be able to effectively facilitate group learning activities.

Supporting Objectives

To meet this objective, you will:

- Select, plan, and facilitate group learning activities

- Create and facilitate a role play
- Create and facilitate a case study
- Create and facilitate a clinical simulation
- Facilitate a brainstorming session
- Facilitate a discussion

SELECT, PLAN, AND FACILITATE GROUP LEARNING ACTIVITIES

Select Group Learning Activities

During your course, you will have many opportunities to divide students into small groups for exercises or activities. Whether they take place in the classroom or clinic, small group activities are facilitated in the same way. The following are some examples of group learning activities:

- **Prepare a role play** within a small group and present it to the larger group.
- **React to a case study** that is presented in writing, orally, or through video or slides.
- **Respond to a clinical simulation** orally or with a demonstration of skills.
- **Brainstorm** either about the solution to a problem or possible answers to a question.
- **Discuss** a topic, issue, or problem.

Group learning activities have many **advantages,** for example, they:

- Involve all students
- Allow students to interact, ask questions, and learn from one another
- Give students opportunities to identify, analyze, and solve problems
- Permit students to express their thoughts, opinions, and concerns

- Provide opportunities for practice in presenting information to a large group

- Help students explore and change attitudes

The space used for group activities should be large enough to allow several arrangements of tables, desks, or chairs so that individual groups can work without disturbing one another. If smaller rooms near the main classroom where groups can work (also known as breakout rooms) are available, consider using them for these activities.

Plan Group Learning Activities

To make the most of the time, resources, and space available, plan your group learning activities carefully. Activities assigned to small groups should be challenging, interesting, and relevant to the background of the students and the learning objectives of the course. When selecting group activities, you should first consider your learning objectives. Which objectives can the activity achieve? Once you have selected the activity, clearly describe for yourself, on paper, what will happen during the activity. List the supplies you will need for the activity. Consider the number of students, the space available, and any other logistics that will affect the activity.

Facilitate Group Learning Activities

All groups may work on the same topic at the same time, or you can assign a range of topics simultaneously to different groups to address the same or different problems.

Before dividing the students into groups, clearly describe the activity to all students, ask if any clarification is needed, explain how each group should record its decisions (e.g., a recorder should keep notes or write decisions on flipchart paper), and suggest how each group's discussion should be reported back to the larger group. Provide clear instructions so that the students know exactly what you expect of them. Instructions typically include:

- **The activity itself.** Present the group activity either written, orally, by using visual aids, or with a combination of these methods.

- **What the students will do.** Provide a very clear explanation of the activity. Tell the students what to do, the purpose of the activity, and how they will report after completing the activity.

- **Time limit.** It is critical to give a time limit for any activity. Tell students how much time they will have to complete the activity and remind them when there are 5 minutes remaining.

Even if you are giving a case study or other activity that students will complete individually, give the same level of detail in your instructions.

While the groups are at work, move among the students to monitor the work of each group, remind students of the task and time limit, and offer suggestions to groups that are having difficulties or straying from the main task.

After the groups have completed their activity, bring them together as a large group to discuss the activity. This discussion may involve:

- Oral reports from each group
- Responses to questions about the activity
- Role plays developed and presented by students in the small groups
- Recommendations from each group

Always summarize the group activity by stressing the main points and relating them to the learning objectives.

CREATE AND FACILITATE A ROLE PLAY

A role play is a learning activity in which students play out roles in a simulated situation that relates to one or more learning objectives. Role plays promote learning through imitation, observation, feedback, analysis, and conceptualization. For example, if one of your learning objectives is that students will be able to educate a mother about giving oral drugs at home, acting out the roles of a healthcare provider who is advising a mother about the drugs, and a mother who is learning how to give the drugs to her child, will be a useful activity. It will help students develop the communication skills they need in such interactions. A role play is often useful for exploring, discussing, and influencing the behaviors and attitudes of students, and for helping students develop skills such as history taking, physical examination, and counseling.

Providing feedback after a role play is essential to the effectiveness of this teaching method. It is important to ensure that all students have an opportunity to receive feedback, whether from you, their peers, or other teachers. If your class has more than 10 students, you may choose to divide students into groups of three and

alternate those students who observe and those who provide feedback. Give very clear instructions to all students about what aspects of the role play require feedback (e.g., the appropriateness of the information given, demonstrated attitudes, body language, communication skills). This will allow you to circulate among several groups and still ensure that each student receives feedback.

The following are some main **advantages** of role plays:

- Role plays encourage student participation and stimulate thinking. They motivate students by involving them in a realistic situation.

- Role plays help students understand another person's perspective or situation:
  - Students experience and understand a variety of situations from different points of view.
  - Students learn to empathize with people.

- Role plays can inform, assess, and improve a variety of students' skills and attitudes such as:
  - Communication and interpersonal skills needed to interview, counsel, and treat patients
  - Demonstrated attitudes such as caring, compassion, and understanding
  - Skills needed for choosing and implementing solutions or plans (i.e., problem solving and decision-making)

- Role plays give students opportunities to receive feedback on their performance in a safe setting; this feedback provides insight into their own behavior, and helps them to understand how others view them.

To **create a role play**, follow these steps:

- **Decide what the students should learn** from the role play (the objectives).

- **Select an appropriate situation.** It may be drawn from students' experiences, your experiences, or clinical records. The situation should be relevant and similar to situations that students will encounter during their professional careers. Keep the situation simple; the interaction is more important than the content. Because the same role play may be used with a number

of students in various learning settings, keep the situation as general as possible.

- **Identify the roles** that students will act out during the role play. In most clinical learning situations, there will be a clinician and a patient. Specify any specific roles or points of information that students should cover. For example, if the student acting the role of the patient should resist advice, ask certain questions, or give certain answers, clearly explain the desired "patient" behavior in the role play.

- **Determine whether the role play will be informal, formal, or a clinical demonstration.** These are defined as:

  - **Informal.** The teacher gives the role players a general situation and asks them to "act it out" with little or no preparation time. For example, if a question about a patient counseling session comes up in class, you may ask two of the students to take a few minutes to plan and present a brief role play that addresses the situation. This type of role play is not prepared in advance.

  - **Formal.** The teachers give the role players a set of instructions that outline the scope and sequence of the role play. Using the counseling example, the students would be given a situation with specific roles they are to act out, often with specific points of information to cover.

  - **Clinical demonstration.** This type of role play is often part of a clinical simulation. The clinical demonstration role play, which is similar to the formal role play, typically uses an anatomic model, simulated patient, or real patient, and often occurs as part of a coaching session. For example, you demonstrate a pelvic examination using a pelvic model, or demonstrate counseling a woman about oral contraceptives. Following the demonstration, you ask two of the students to role play the procedure. One student assumes the patient or caretaker role, while the other assumes the role of the clinician. If an anatomic model is used, the student playing the patient sits or stands by the model and speaks as a patient would, asking questions and responding to the clinician. The student playing the clinician will not only perform the physical examination but also will verbally interact with the "patient."

- **Determine whether students will report** the results of their discussion of the role play in writing or orally to the entire group.

To **facilitate** a role play:

- Explain the nature and purpose of the exercise (the objectives).
- Define the setting and situation of the role play.
- Brief the participants on their roles.
- Explain what the other students should observe and what kind of feedback they should give. Tell students what to look for and how to document their questions or feedback. Should they observe for verbal communication skills? The use of questioning? Nonverbal communication?
- Provide the students with questions or activities that will help them to focus on the main concept(s) being presented.
- Keep the role play brief and to the point. Be ready to handle unexpected situations that might arise (confusion, arguments, etc.).
- Engage students in a followup discussion. Discuss important features of the role play by asking questions of both the players and observers.
- Provide feedback, both positive and suggestions for improvement.
- Summarize what happened in the session, what was learned, and how it applies to the skill being learned.

A role play will be effective only if it is clearly related to the learning objectives. Explain the objectives of the role play before beginning the activity. When the role play is completed, summarize and discuss the results of the role play and relate the role play to the learning objectives. See **Sample 7-1** for an example of a role play from an Integrated Management of Childhood Illness (IMCI) training course.

Sample 7-1. Sample Role Play: Case of the Sick Child

Learning Objectives (based on the supporting objectives for the course): Students will be able to:
- Identify correct and incorrect feeding practices
- Use the Sick Child Recording Forms
- Respond to questions about the appropriateness of the advice given

Instructions: Two students will take the roles of a healthcare provider and a mother of a sick child who has a feeding problem. Other students should observe, record the mother's responses in the appropriate place on the Sick Child Recording Form, and note correct feeding practices and feeding problems. Both students in the role play should behave and respond as a healthcare provider and a mother might behave.

After the role play, lead a brief discussion. Review the answers that the mother gave to the feeding questions. List on a flipchart or chalkboard the correct feeding practices mentioned. Then list the feeding problems. Ask the discussion questions to all students.

Roles

Healthcare provider: Explain that the "healthcare provider" will use the questions on the Sick Child Recording Form to identify feeding problems. Explain that the healthcare provider may need to ask additional questions if the mother's answers are unclear or incomplete.

Mother: Assign the role of the mother in the role play to a different student. Give the "mother" the information below describing her child's feeding. Tell the mother that she may make up additional realistic information that fits the situation, if necessary.

Situation: A mother brings her 5-month-old girl to the outpatient clinic because she has a cough and runny nose. The healthcare provider has already told the mother about a soothing local remedy for cough. Now the healthcare provider will ask some questions about how the mother feeds her daughter.

Role Play: **Description for Zuwena's Mother**

You are the mother of Zuwena, a 5-month-old girl. You have brought her to the healthcare provider because she has a cough and runny nose.

You are still breastfeeding Zuwena about three times each day and once during the night. In the past month you have started giving her thin cereal gruel because she seemed hungry after breastfeeding and your mother-in-law suggested it. You give the gruel by spoon three times each day. You do not own or use a feeding bottle.

During the illness Zuwena has breastfed as usual, but she spits out the gruel and cries. Your friend suggested giving Zuwena some sugar water instead of the gruel while she is sick. You have tried giving the sugar water by cup, and Zuwena seems to like the sweet taste.

Discussion Questions

1. Did the healthcare provider ask all the right questions to assess correct feeding practices?
2. If not, what additional questions should the provider have asked?
3. What are the consequences of not asking these questions?
4. Did the healthcare provider use good communication skills when counseling the mother?
5. Did the healthcare provider check the mother's understanding upon completion of the counseling session?
6. What recommendations do you have for the healthcare provider to improve communication skills?

CREATE AND FACILITATE A CASE STUDY

A case study is a learning activity that uses realistic scenarios focusing on a specific issue, topic, or problem. Students typically read, study, and react to the case study individually or in small groups. The essential feature is that a situation is described in words (or possibly in pictures). The situation may be related to the diagnosis or treatment of patients, interpersonal skills, or any of a wide range of managerial or organizational problems. Students may be asked to do any of the following:

- Define the problem in the case study and develop suggestions for solutions.
- Respond to a clinical situation by suggesting appropriate interventions and discussing them.
- Evaluate clinical decisions and the process used to make the decision in the case study.
- Identify the possible impact of choices or decisions made in the case study.
- Analyze the causes of a problem.
- Identify attitudes that may influence the healthcare providers' behaviors described in the case study.

Case studies:

- Focus on real-life problems or situations
- Develop problem-solving and decision-making skills
- Strengthen students' ability to apply information
- Clarify and expand students' knowledge
- Explore and change attitudes

The following are some **advantages** of case studies:

- They are a participatory teaching method that actively involves students and encourages them to interact with one another.

- Students react to realistic and relevant cases that relate directly to the course and often to their future work environment.

- Reactions often provide different perspectives and different solutions to problems presented in the case study.

To **create** a case study:

- Decide which objective the case study will help address, and decide what the students should learn from the case study.

- Identify the topic, issue, or problem on which the students will focus. You can find situations for the case studies in one or more of the following sources: experiences of clinic staff, students or patients; medical histories/records; reference manuals; clinical journals; exercises from prepared materials (e.g., IMCI exercises).

- Ensure that the case study presents a real situation. It should relate directly to the background, experiences, and interests of the students. It is difficult for students to react to a case study when they have little or no understanding of the situation.

- Determine whether the case study will be completed by individuals or in small groups.

- Provide the students with reaction activities (described below) that will guide them in completing the case study.

- Decide whether students will report the results of their work on the case study in writing or orally to the entire group.

To **facilitate** a case study:

- Provide clear directions, including how to complete the case study, how to present the answers, and the time limit or due date.

- If the students are working in groups, suggest that each group select someone to act as the recorder. This person should take notes and prepare the group's reaction to the case study.

After students have read the case study, either individually or in small groups, they should be given the opportunity to react to it. Typical reaction exercises include:

- **Analysis of the problem.** The students are asked to analyze the situation presented in the case study and determine the source of the problem.

- **Responses to case study questions.** These ask students to respond to the questions in the case study.

  Example:

  - "What are three observations suggesting that the patient was not counseled properly?"
  - "What are some of the consequences of delaying referral during a complicated childbirth?"

- **Problem solutions.** The students are asked to offer possible solutions for the situation being presented.

  Example:

  - "How could this problem have been avoided?"
  - "How would you manage this case?"
  - "What are other ways this patient could have been managed?"

- **Discussion of the responses.** The students discuss the responses given by the different groups.

- **Summary of key points.** Each group summarizes the key points of the case study. The teacher confirms key points and adds any other points that the group may have missed.

Case studies are often used or included in clinical simulations. Summarize the results of the case study activity and the related discussion before moving on to the next topic. Refer to the case study in **Sample 7-2**.

Sample 7-2. Case Study: Breastfeeding and Depo-Provera

Directions
Read and analyze this case study individually. When the others in your group have finished reading it, discuss and answer the questions. Choose one person in your group to share your answers with the larger group.

Case Study
Suntali is 29 years old and has four children. She has been using Depo-Provera since 6 weeks after the birth of her youngest child 2 years ago. She says that she had trouble breastfeeding her child because of the Depo-Provera. She kept using this family planning method, however, because she was more worried about another pregnancy than about her problems with breastfeeding. For the past several months, she has felt tired and has had a hard time doing her work. She is sure this is because of the Depo, and she would like to stop taking it for a period of time.

Questions
1. What would you tell Suntali about breastfeeding and Depo-Provera?
2. What questions would you ask her about her diet? Her breastfeeding practices?
3. How would you counsel her about taking a rest period from Depo? Is it necessary?

CREATE AND FACILITATE A CLINICAL SIMULATION

A clinical simulation presents the learner with a carefully planned, simulated patient management situation. Clinical simulations are an excellent method for developing cognitive or clinical decision-making skills. The learner interacts with persons and things in the environment, applies previous knowledge and skills to respond to a problem, and receives feedback about those responses without having to be concerned about real-life consequences. Clinical simulations are often conducted with a small group of students—one student may be the primary responder while other students provide feedback, or all students in the group may be involved in the exercise.

Simulations can take a variety of forms:

- **Written simulations** are pencil-and-paper presentations of actual problems or cases about which the learner must make decisions as if performing in the real-life situation. After making each decision, the learner receives feedback on the effects of that decision, and incorporates it into the next decision. These simulations may be used in assessing students' knowledge.

- **Role play simulations** allow the learner to take on the role of an individual involved in a clinical situation. The main purpose is to give the learner new insights into behaviors and feelings of other people.

- **Mediated simulations** use audio or visual media to present the problem, represent an interpersonal situation, or help in the

analysis of a problem or situation. For example, a video of people interacting may be shown, or audiotapes of heart sounds may be played to provide information for the learner to use in the simulation.

- **Physical simulators**, or anatomic models, closely resemble the human body (or parts of it), and are often used for developing psychomotor skills. A physical simulator may be used along with a role play in a clinical simulation that requires students also to demonstrate technical skills.

- **Live simulated patients** involve the use of persons trained to act the role of the patient. They are given a very specific script to follow while interacting with the student. The interaction may be videotaped or observed so that feedback can be provided to the student.

Clinical simulations are **useful** to:

- Help students practice responding to emergency situations. When the topic of the clinical simulation is responding to an emergency, the simulation helps students learn to make quick decisions and deal with pressure in a safe environment.

- Help students develop critical thinking skills. Clinical simulations allow students to receive feedback on their problem-solving and decision-making skills as they practice managing a patient problem. Later, the experience gained during the clinical simulation should help students to feel more confident and improve their clinical judgment when in a similar situation.

- Assess students' ability to integrate knowledge, skills, and attitudes into providing healthcare in a simulated setting. Clinical simulations are often included in observed structured clinical examinations (OCSE) as described in *Prepare and Use Skills Assessments*.

The following are some **advantages** of clinical simulations:

- The same clinical simulation can be used repeatedly until the students master the situation it presents. It can also be adapted to address different causes for the problem it presents, different treatment options, or different outcomes.

- Time can be shortened or lengthened in a clinical simulation. Students can move through a situation more rapidly than in real

life because, for example, they do not need to wait for laboratory test results. They can also take more time than is actually available in life-threatening situations to collect information, discuss the situation with their teacher, and make decisions as they practice and master these skills, without harm to the patient.

- Clinical simulations can be tailored to specific instructional objectives. Because they can be easily adapted to specific needs and interests, both teachers and students are motivated to use them.

To **create** a clinical simulation, follow these steps:

- Define the objective of the clinical simulation and the expected outcome. Will it be used to help students practice responding to emergency situations? Will it be used to walk students through a clinical problem that will also require a demonstration of skills? Will it be used to help students develop decision-making skills while managing a simulated patient scenario? Will it be used to assess students' skills or knowledge? The objective of the clinical simulation will determine the kind of simulation created.

- Based on your objectives, prepare a case from your past experience that relates to the learning objectives. You may ask students to share cases from their own clinical experiences. Document the necessary information from the case including diagnostic data, treatment, and outcomes. Create a list of questions to ask students about how they would have chosen to manage the case.

- Create a patient scenario that includes the problem, the related lab and diagnostic results, and possible outcomes for different interventions. Document this information so that you do not have to re-create scenarios. Whether creating a scenario for an emergency situation or a patient management situation, prepare detailed data to be shared with students and possible outcomes. List the questions to be asked and the potential answers for possible interventions.

To **facilitate** a clinical simulation, follow these steps:

Present a Case

- Ask two or three students to prepare a case for presentation from their clinical experience. Tell them to be prepared for all clinical and theoretical aspects of the case.

- When it is time to present, have the students share the presenting complaint.

- Stop them, ask other students what they think the problem or diagnosis could be, and tell them to explain their answers. Ask other students to respond to this information. Ask questions to prompt students to think through possible problems and provide additional data as needed.

- Allow the students to present additional relevant data.

- Stop again, ask the students if they have changed their views, or what their next steps would be, and why.

- Continue this process of allowing information to be revealed in steps, and asking and responding to students' answers. Guide the discussion by providing essential information when needed, asking related questions to help students make decisions, and giving them feedback on their proposed diagnoses and interventions.

This type of clinical simulation is more effective with senior-level students who have had more experience with managing patients. Be sure to protect patient confidentiality during this activity.

Structure a Patient Scenario in a Simulated Practice Setting

This method is more involved because it may require students also to demonstrate a skill or "act out" a situation. Structured scenarios may include responding to a clinical problem or an emergency situation. Before you begin, discuss the following with the students:

- Clarify the objectives of the activity, whether to develop decision-making skills, practice handling an emergency, or manage a sick patient.

- Discuss how the student or students should perform the clinical skills. Should they talk it through or demonstrate the skill?

- If you are using a clinical simulation to help students develop life-saving skills, give students clear instructions about their individual roles during the clinical simulation. Who will act as the physician? Who will act as the nurse? Who will run for supplies? Who will be responsible for documenting interventions?

- If you are using a tool such as an algorithm or recording form, find out if the students are familiar with it; if necessary, explain it to them and describe how you will use it as a teaching tool.

- Define your role during the activity. Will you only ask questions or will you also provide information, along with feedback, at key points?

- Discuss time constraints. Is there any time limit on responding or completing the activity?

To conduct a clinical simulation involving models:

- Set up the area as realistically as possible. Provide anatomic models and any equipment or supplies that would be needed.

- Present the initial information about the patient or the situation. Begin by providing relatively little information.

- Have a student respond to that information and identify what other information is needed. You respond with additional information and ask that student or other students what their next steps might be. You may ask the student to demonstrate on the model the actions she or he would then choose to take. Respond by asking the student such questions as, "Why would you choose that intervention?" or "Are you sure you want to do that?" in order to understand their rationale for intervention.

- Continue to provide pieces of information and ask questions of the students. "What would you do next?" "What information would you need now?" "Why did you make that decision?"

- Provide the student or students with feedback on their responses. Ask questions to check their understanding and help them continue to develop their cognitive skills.

Refer to the sample clinical simulation (**Sample 7-4**) at the end of this module. The sample includes questions to ask and possible responses, along with data to share with the student. This sample may serve as a guide for developing additional clinical simulations.

FACILITATE A BRAINSTORMING SESSION

Brainstorming is generating a list of ideas, thoughts, or alternative solutions that focus on a specific topic or problem.

Brainstorming is a teaching method that stimulates thought and creativity and is often used along with group discussions. Brainstorming sessions should not be interrupted to discuss or criticize ideas. The compiled list may be used as the introduction to a topic or form the basis for a group discussion. Once the brainstorming process has been completed, the group can organize the ideas into themes. The key to successful brainstorming is to separate the generation of ideas, or possible solutions to a problem, from the evaluation of these ideas or solutions. Plan for brainstorming by determining the objectives of the activity and making sure that there is a way to record responses and suggestions.

Brainstorming is **useful** to:

- Stimulate interest in a topic
- Encourage broad or creative thinking

The following are some **advantages** of brainstorming:

- Allows students to share their ideas without criticism
- Allows for creative thinking
- Generates ideas
- Allows for expressing opinions

To **facilitate** a brainstorming session, follow these steps:

- Share the objective of the brainstorming session.
- Explain the ground rules before beginning the session. There are three basic rules: all ideas will be accepted, discussions of suggestions are delayed until after the activity, and no criticism of suggestions is allowed.

  Example: "During this brainstorming session, we will be following three basic rules. All ideas will be accepted; Alain will write them on the flipchart. At no time will we discuss or criticize any idea. Later, after we have our list of suggestions, we will go back and discuss each one. Are there any questions? If not,...."

- State the topic or problem. Clearly state the focus of the brainstorming session.

Example: "During the next few minutes we will be brainstorming and will follow our usual rules. Our topic today is 'Benefits of Family Planning.' I would like your full participation. Maria will write these on the board so that we can discuss them later."

- Maintain a written record on a flipchart or writing board of the ideas and suggestions. This will prevent repetition, keep students focused on the topic, and be useful when it is time to discuss each item.

- Provide opportunities for anonymous brainstorming by giving the students cards on which they can write their comments or questions. Post the cards and use them for a later discussion. This technique allows students to share thoughts or questions without revealing their identities.

- Involve all of the students and provide positive feedback in order to encourage more input. Avoid allowing a few students to monopolize the session, and encourage those not offering suggestions to do so.

- Review written ideas and suggestions periodically to stimulate additional ideas.

- Conclude brainstorming by summarizing and reviewing all of the suggestions, and by placing ideas in categories, if this is useful and possible.

Sample 7-3. Sample Brainstorming Topics

- What behaviors or communication skills do you want your healthcare provider to have?
- What are the functions of a medical record?
- What are the essential parts of a complete history and physical?
- What are issues to consider when counseling adolescents about family planning and reproductive health?
- What are potential complications that may occur during childbirth?

FACILITATE A DISCUSSION

A discussion is an opportunity for students to share their ideas, thoughts, questions, and answers in a group setting with a facilitator. A discussion that relates to the topic and stays focused on the learning objectives can be a very effective teaching method.

Guide the students as the discussion develops and keep it focused on the topic at hand.

Group discussion is useful to support other teaching methods, particularly to:

- Conclude a presentation
- Summarize the main points of a videotape
- Check students' understanding of a clinical demonstration
- Examine alternative solutions to a case study
- Explore attitudes exhibited during a role play
- Analyze the results of a brainstorming session

The following are some **advantages** of group discussion:

- Provide a forum to discuss attitudes
- Emphasize key points
- Create interest and stimulate thinking about a topic
- Encourage active participation

In addition to group discussion that focuses on the learning objectives, there are two other types of discussions that may be used in a learning situation:

- **General discussion** that addresses students' questions about a learning topic. For example, a student asks about a situation she observed in the clinic. You decide that this is an important question and therefore devote 5 minutes to a general discussion.

- **Panel discussion** in which a moderator conducts a question-and-answer session among panel members and students.

When **preparing for** a discussion, consider the following:

- What are the objectives of this discussion? How long should it last?

- Do students have some knowledge of or experience with the topic? Attempting a group discussion when students have

limited knowledge or experience in the topic will often result in little or no interaction.

- Is there enough time available? Discussion requires more time than a presentation because of the interaction among the students.

- Are you prepared to direct or control the discussion? A poorly directed discussion may move away from the subject and never accomplish the learning objectives. If the teacher does not maintain control, a few students may dominate the discussion while others lose interest.

How do you choose a topic for discussion? Group discussions are best planned ahead of time, although sometimes they arise spontaneously from the students. Follow these key points to ensure successful group discussions:

- Have a very clear idea in mind of what the group will discuss and what you hope to gain through the discussion. State the topic as part of the introduction.

  Example: "To conclude this presentation on counseling the sexually active adolescent, let's take a few minutes to discuss the importance of confidentiality."

- Shift the conversation to the students. Allow the students to discuss the topic and ensure that the discussion stays on the topic at hand. Encourage shy students to speak up so that everyone has a chance to share their thoughts.

  Examples:

  - "Abdul, would you share your thoughts on...?"
  - "Rosa, what is your opinion?"
  - "Michelle, do you agree with my statement that...?"

- Allow the group to direct the discussion; act as a referee and intercede only when necessary.

  Example: "It is obvious that Alain and Ilka are taking opposite sides in this discussion. Alain, let me see if I can clarify your position. You seem to feel that...."

- Summarize the key points of the discussion periodically. Provide feedback on students' comments when appropriate.

Example:

- "Let's stop here for a minute and summarize the main points of our discussion."
- "Actually, Nsungu, confidentiality is essential for counseling and testing for HIV. Can anyone tell me why?"

- Ensure that the discussion stays on the topic.

  Examples:

  - "Sandra, can you explain a little more clearly how that situation relates to our topic?"
  - "Monica, would you clarify for us how your point relates to the topic?"
  - "Let's stop for a moment and review the purpose of our discussion."

- Use the contributions of each student and provide positive reinforcement. Point out differences or similarities among the ideas presented by different people.

  Examples:

  - "That is an excellent point, Rosminah. Thank you for sharing that with the group."
  - "Alex has a good argument against the policy. Biran, would you like to take the opposite position?"

- Encourage all students to get involved.

  Example: "Srijana, I can see that you have been thinking about these comments. Can you give us your thoughts?"

- Ensure that no one student dominates the discussion.

  Example: "Juan, you have contributed a great deal to our discussion. Let's see if someone else would like to offer...."

Your role as the discussion facilitator is to keep the discussion focused, ensure that all students have equal opportunity to participate, and to intervene when the discussion moves away from the objectives. Conclude the discussion with a summary of the main ideas and how they relate to the objectives presented during the introduction.

SUMMARY

Group learning stimulates interest and creativity, allows students to explore and discuss attitudes and values, and develops skills in areas such as problem solving, decision-making, and communication. Interactive group learning activities such as role plays, case studies, clinical simulations, brainstorming, and discussions are especially useful in helping students integrate knowledge, skills, and attitudes. Whenever possible, carefully plan and prepare group learning activities and include them in both the classroom and practical sessions of your course.

Sample 7-4. Clinical Simulation: Management of Vaginal Bleeding during Early Pregnancy

OBJECTIVE

Students will demonstrate decision-making skills in the management of vaginal bleeding in early pregnancy, with emphasis on thinking quickly and reacting (intervening) rapidly.

INSTRUCTIONS

The activity should be carried out in the most realistic setting possible, such as the labor and delivery area of a hospital, clinic, or maternity center, where equipment and supplies are available for emergency interventions.

- One student should play the role of patient and a second student the role of skilled provider. Other students may be called on to assist the provider.

- The teacher will give the student playing the role of provider information about the patient's condition and ask pertinent questions, as indicated in the left-hand column of the table below.

- The student will be expected to think quickly and react (intervene) rapidly when the teacher provides information and asks questions. Key reactions/responses expected from the student are provided in the right-hand column of the table below.

- Procedures such as starting an IV and bimanual examination should be role played, using the appropriate equipment.

- Initially, the teacher and student 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 student's skills become stronger, the focus of the simulation should shift to providing appropriate care for the life-threatening emergency situation in a quick, efficient, and effective manner. All discussion and questioning should take place after the simulation is over.

***Resources**: Learning Guides for Postabortion Care and Postabortion Care Family Planning Counseling, childbirth simulator, sphygmomanometer, stethoscope, equipment for starting an IV infusion, syringes and vials, bucket for waste disposal, high-level disinfected or sterile surgical gloves, antiseptic solution.*

SCENARIO 1 **(Information provided and questions asked by the teacher)**	**KEY REACTIONS/RESPONSES** **(Expected from student)**
1. Mrs. A. is 20 years old. This is her first pregnancy. Her family brings her into the health center. Mrs. A. is able to walk with the support of her sister and husband. She reports that she is 14 or 15 weeks pregnant and that she has had some cramping and spotting for several days. However, she has had heavy bleeding and cramping for the past 6–8 hours. She has not attended an antenatal clinic nor is she being treated for any illnesses. • What is your first concern? • What will you do first?	• States that first concern is to determine whether or not Mrs. A. is in shock • Makes a rapid evaluation of her general condition, including vital signs (temperature, pulse, blood pressure, and respiration rate), level of consciousness, color, and skin temperature • Explains to Mrs. A. (and her family) what is going to be done, listens to them, and responds attentively to their questions and concerns
2. On examination, you find that Mrs. A.'s blood pressure is 100/60 mm Hg, pulse 100 beats/minute, respiration rate 24 breaths/minute. She is conscious. Her skin is not cold or clammy. You notice bright red blood soaking through her dress. • Is Mrs. A. in shock? • What will you do next? • What questions will you ask?	• States that Mrs. A. is not in shock • Starts an IV infusion of normal saline or Ringer's lactate • Asks Mrs. A. if anything happened to her or if anyone did anything to her which may have caused the bleeding • Asks how long it takes to soak a pad • Asks if Mrs. A. has passed any tissue • Asks if she has fainted
3. Mrs. A. was well until she started bleeding. You can tell from her responses that she wanted this pregnancy. You see no signs of physical violence. She soaks a pad every 4–5 minutes. She has not fainted but she "feels dizzy." She has passed some clots and thinks she may have passed tissue. • What will you do next and why?	• Palpates Mrs. A.'s abdomen for uterine size, tenderness, and consistency; checks for tender adnexal mass to rule out ectopic pregnancy; checks for large, boggy uterus to rule out molar pregnancy • Does a bimanual examination to rule out inevitable or incomplete abortion • Takes Mrs. A.'s temperature to rule out sepsis
4. On examination, you find that the uterus is firm, slightly tender, and palpable just at the level of the symphysis pubis; there are no adnexal masses. Bimanual examination reveals that the cervix is approx 1–2 cm dilated, uterine size is less than 12 weeks, and no tissue is palpable at the cervix. There is no cervical motion tenderness. • What is your working diagnosis?	• States that Mrs. A. has an incomplete abortion
Discussion Question 1*: Why did you rule out ectopic pregnancy?*	***Expected Responses****: Bleeding is heavier than for ectopic; no adnexal masses were palpable abdominally or vaginally; no cervical motion tenderness; cervix is dilated; no history of fainting*

SCENARIO 1 **(Information provided and questions asked by the teacher)**	**KEY REACTIONS/RESPONSES** **(Expected from student)**
4. (*continued)* • What will you do now?	• Explains findings to Mrs. A. (and her family) • Prepares Mrs. A. for MVA
5. The treatment room is occupied at the moment because another patient with incomplete abortion is undergoing an MVA. The room will be available in 30 minutes. • What will you do now?	• Explains the situation to Mrs. A. (and her family) and provides reassurance • Keeps the IV running • Gives ergometrine 0.2 mg IM ***OR*** misoprostol 400 μg orally • Continues to monitor blood loss, pulse, and blood pressure
6. Fifteen minutes have passed since ergometrine was given, but Mrs. A. is still soaking one pad every 5 minutes. Her blood pressure is 98/60 mm Hg and her pulse 104 beats/minute. • What will you do now?	• Repeats the ergometrine 0.2 mg IM • Continues IV infusion • Continues to monitor blood loss, blood pressure, and pulse • Takes blood for typing and cross-matching so that it is available if needed
7. Bleeding slowed after the second dose of ergometrine. MVA was performed 30 minutes later and complete evacuation of the products of conception has been assured. • What will you do now?	• Monitors Mrs. A.'s vital signs and blood loss • Ensures that Mrs. A. is clean, warm, and comfortable • Encourages her to eat and drink as she wishes
8. After 6 hours, Mrs. A.'s vital signs are stable and there is almost no blood loss. She insists on going home. • What will you do before she goes home?	• Talks to Mrs. A. about whether or not she wants to get pregnant and when; provides family planning counseling and a family planning method, if necessary • Provides reassurance about the chances for a subsequent successful pregnancy • Advises Mrs. A. to seek medical attention immediately if she develops prolonged cramping, prolonged bleeding, bleeding more than normal menstrual bleeding, severe or increased pain, fever, chills or malaise, foul-smelling discharge, fainting • Talks to her and her husband about safe sex • Asks about her tetanus immunization status and provides immunization if needed

MODULE SEVEN JOB AID: SELECTING, PREPARING, AND FACILITATING GROUP LEARNING ACTIVITIES

SELECTING GROUP LEARNING ACTIVITIES		
METHOD	**DEFINITION**	**OBJECTIVE AREA**
Role Play	An activity in which students play out roles in a simulated situation that relates to one or more of the learning objectives.	Attitudes and skills (especially communication skills)
Case Study	Realistic scenario, focusing on a specific issue, topic or problem, to which students respond orally or in writing.	Knowledge and skills (especially cognitive skills)
Clinical Simulation	Representation of a simulated patient management situation; it may involve models or simulated patients.	Knowledge and skills (especially cognitive skills)
Brainstorming	Generating a list of ideas, thoughts, or alternative solutions that focus on a specific topic or problem.	Knowledge, skills (especially cognitive skills), and attitudes
Discussion	Interactive process in which students share their ideas, thoughts, questions, and answers in a group setting with a facilitator.	Knowledge and attitudes
FACILITATING GROUP LEARNING ACTIVITIES		
Select Activities	• Select an activity that meets specific learning objectives for your course.	
Prepare Activities	• Clearly describe for yourself on paper how the activity will be conducted. • List the resources needed to conduct the activity.	
Facilitate Activities	***Before*** • State the purpose of the activity and the learning objectives that it should achieve. • Explain the method for determining who is in each group. • Give students clear instructions for how to do the activity. • Tell students how much time they have to complete the activity.	
	During • Carefully monitor the progress of the groups as they work. • Give suggestions to groups to help them focus on the task and progress. • Tell students how much time is remaining.	
	After • Discuss the results with students. • Ask questions. • Give feedback to students. • Always summarize the main points or lessons learned from the activity.	

MODULE EIGHT

FACILITATE THE DEVELOPMENT OF HEALTHCARE DELIVERY SKILLS

INTRODUCTION

When a healthcare provider has a skill, she or he has the ability to perform a group of steps or tasks correctly or to a standard. The skill can be a physical activity such as demonstrating condom use or an intellectual activity such as calculating how many vials of a vaccine are needed for the next 6 months. Depending on how a skill is defined, it may involve a single action or a series of actions. For example, looking for a runny nose in a child with a fever involves just one action, while counseling a mother about how to feed her malnourished child requires several steps.

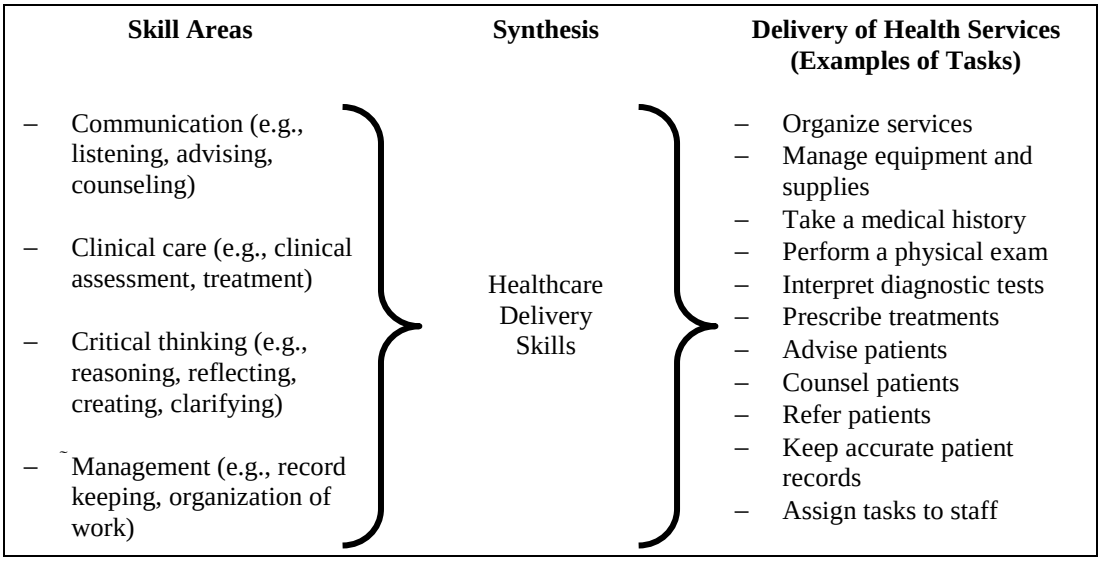
The delivery of healthcare services requires a combination of skills, primarily in the areas of communication, clinical care, critical thinking, and management. **Communication** skills include listening, asking questions, educating, informing, advising, counseling, and checking understanding. Healthcare providers need communication skills not only in interactions with patients, but also with the families of patients and with other healthcare providers. **Clinical care** skills involve the abilities to assess a patient's situation, decide what action is needed, and design and implement a care strategy. **Critical thinking** skills entail drawing on past experience and seeking out new information in order to analyze, reason, reflect, create ideas, and clarify information. Critical thinking is essential for solving problems and making sound decisions. **Management** skills include organizing, regulating, or being in charge of functions such as assigning tasks to staff, maintaining patient records, ensuring the availability of essential supplies and equipment, or designing a system of patient referral. **Figure 8-1** illustrates how these skill areas are synthesized into the tasks needed to deliver health services.

The way healthcare providers perform skills reflects their underlying knowledge, morals, values, and ethics. Education typically focuses on building the underlying knowledge needed to perform skills, leaving little attention to the moral aspects of healthcare, which are nevertheless critical in the delivery of high-quality health services. Their development cannot be left to observation of role models or simply to chance. The challenge for a teacher is to integrate morals, values, and ethics into the academic program and help students internalize them. The teacher should focus on the moral dimensions of clinical practice through lectures,

guided discussions, case studies, ethics rounds, and clinical conferences.[1]

When you are planning for teaching, think carefully about the skills that students should master by the end of the course (see module *Plan for Teaching*). For each skill objective of the course, consider the amount of time that students will need to become competent in that skill. In addition, try to identify relevant underlying morals, values, and ethics that are linked to those skills, and make them explicit by defining specific objectives for learning (see *Write Objectives for Learning*).

Figure 8-1. Synthesis of Skills into the Delivery of Healthcare Services



Healthcare delivery skills are best developed by:

- introducing and demonstrating the skill,
- observing students as they practice the skill,
- giving feedback to students on how well they performed the skill, and
- assessing students for competency in the skill.

Teachers can use methods such as video exercises, photograph exercises (in which teachers show students photographs and ask questions about them), role plays, case studies, and simulations when introducing, demonstrating, and practicing skills. For some

[1] Thompson JE and HO Thompson. 2001. Ethics, values and moral development in teaching, in *Educating Advanced Practice Nurses and Midwives: From Practice to Teaching.* Thompson J, R Kershbaumer and M Krisman-Scott. Springer Publishing Company: New York.

skills, a simple demonstration may be sufficient. For more complex skills, students will need opportunities to practice and receive feedback on their performance. For very difficult or complex skills, students should first practice the skill in a simulated environment. When they have reached an appropriate level of skill competency, they should practice in a real environment (e.g., laboratory, clinic, hospital ward).

Regardless of where students practice, teachers, tutors, clinical instructors, or other students should observe them as they practice and give them feedback to help them improve their proficiency. Students should be encouraged to continue practicing until they are competent in the skill. Finally, students should be assessed for competency. Assessing students' skills is covered in *Prepare and Use Skills Assessments.*

Main Objective

After completing this module, you will be able to facilitate the development of healthcare delivery skills.

Supporting Objectives

To meet this objective, you will:

- List the steps of skills development
- Develop and use competency-based learning tools
- Introduce and demonstrate a skill
- Facilitate skills practice and give feedback

THE STEPS OF SKILLS DEVELOPMENT

Do you remember how you learned to deliver a lecture or presentation to a group? Think about how you learned this skill. You probably observed someone giving a presentation, and then practiced the skill in either a simulated or real environment. Maybe you practiced the skill with a friend in an imaginary situation, similar to a role play or case study. You may have used your notes, a drawing, diagram, or checklist to help you remember how to perform the skill. When you believed that you were ready, you probably tried the skill in a real situation.

When students learn skills, they typically move through three stages of skills development:

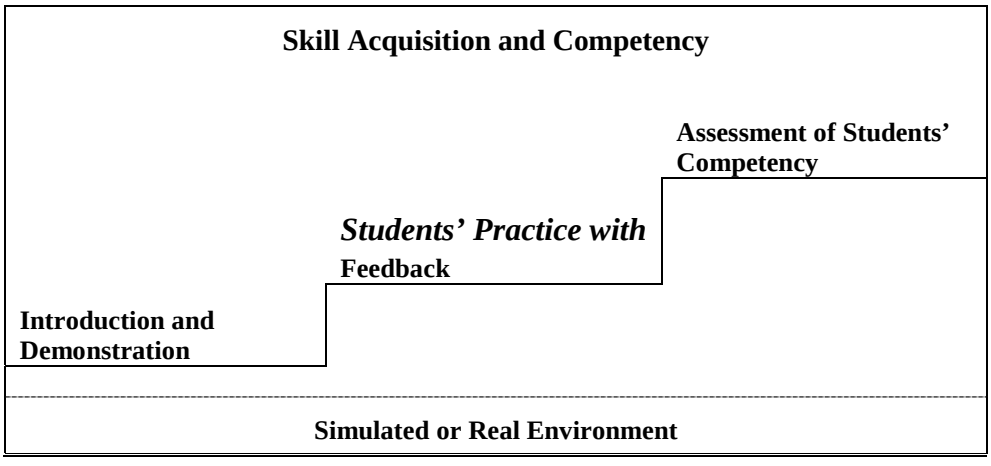
- **Skill acquisition.** Students are aware of the skill and know how it should be performed, but do not always perform it correctly.

- **Skill competency.** Students perform the skill correctly, but may not always progress from step to step efficiently. This is the level typically reached in the education of healthcare providers because the final level requires practice over time.

- **Skill proficiency.** This is the last stage of skills development. It usually occurs after students graduate from an academic program and have practiced the skill over time in their daily work. Proficient healthcare providers consistently perform skills correctly and efficiently.

Students should reach the level of skill competency for all learning objectives defined for your course (see *Develop Objectives for Learning* and *Plan for Teaching*). **Figure 8-2** shows the steps for developing healthcare delivery skills—moving from the initial **introduction and demonstration by the teacher**, to **students' practice with feedback**, and then **assessment of skill competency**. As shown in the figure, skills can be demonstrated, practiced, and assessed in a simulated or real environment (e.g., laboratory, clinic, hospital). Depending on the difficulty and complexity of a skill, students may achieve competency in different ways. At a minimum, students should see a demonstration of the skill in either a simulated or real environment. Ideally, students should then practice the skill and receive feedback on their performance. Difficult skills, or skills that if performed incorrectly would pose a health risk to patients, should be practiced first in a simulated environment, followed by supervised practice in a real environment.

Figure 8-2. Steps for Developing Healthcare Delivery Skills



The job aid at the end of this module summarizes what to do before, during, and after each step of the skills development process: introduction and demonstration, practice with feedback, and assessment. In this module, you will learn how to introduce and demonstrate skills, how to observe students as they practice,

and how to provide feedback to students to help them improve and attain proficiency. In *Prepare and Use Skills Assessments*, you will learn how to do both formative and summative assessment of students to determine their level of skill competency.

In addition to developing competency in a variety of skills, students need to demonstrate appropriate attitudes. It is important to note that the above steps can also be used to practice and assess demonstrated attitudes (which are usually integrated with practice and assessment of skills). Special efforts should be made during practical sessions to develop appropriate skills and attitudes related to communication, clinical care, critical thinking, and management.

DEVELOP AND USE COMPETENCY-BASED LEARNING TOOLS

Competency-based learning tools such as learning guides, decision trees, flowcharts, algorithms, posters, and charts greatly facilitate the demonstration, practice, feedback, and assessment of skills, particularly difficult or complex skills.

Develop Competency-Based Learning Tools

A competency-based learning tool presents the individual steps of a skill in a standardized way. It aims to help students learn the correct steps and the correct sequence of steps for performing a skill. It also helps to measure students' progress in learning as they gain confidence in the skill.

You may either locate and update an existing learning tool, or undertake a task analysis and develop a standardized process for performing the skill. The result of this process is a description of the essential steps of the skill, including exactly how the steps are done, and in what order. Each step should be analyzed to determine the safest and most efficient way to perform the skill. When doing the task analysis, it is critical to ensure consensus among a group of proficient healthcare providers that this is the standard way of performing the skill. It is also important to verify that the steps are based on solid scientific evidence, and not simply on the intuition of the providers involved.

A task analysis for a skill, or for a procedure (e.g., minilaparotomy), which may comprise a number of steps or skills, can be completed as follows:

- Identify a group of healthcare providers who are proficient in performing the skill.

- Observe several of the healthcare providers as they perform the skill. Record each step that each healthcare provider performs. Take photographs or videotape the entire procedure if possible.

- Develop an initial list of steps. This could be developed during group discussions with the healthcare providers or while viewing the videotape.

- Discuss the skill with the same group of healthcare providers. Review the steps, discuss common techniques, study any differences, and reach consensus on the best approach to performing the skill.

- Test the initial list of steps. Test the steps by performing the skill in a simulated environment. Review the literature or check the evidence base for any critical or controversial steps. Make revisions to the skill based on the test and feedback from the healthcare providers.

- Test the final standard way of performing the skill. Testing of the standard way should occur first in a simulated environment and then in the real environment, in both educational and service delivery settings. This testing ensures that all the correct steps, in the correct sequence, have been included.

The final learning tool may be a list of linear steps (e.g., a learning guide), or it may be a nonlinear diagram (e.g., flowchart, tree diagram, or chart booklet) that allows for deviations in tasks or steps based on the outcome of decision points or the answers to specific questions.

Figure 8-3 shows an example of a linear skill that contains no points for deviation based on decisions or responses to questions. You can give the list to students as a handout or learning guide before demonstrating the skill.

Figure 8-3. Example of a Handout for Teaching How to Give Oral Drugs at Home

TEACH THE CARETAKER HOW TO GIVE ORAL DRUGS AT HOME
STEP/TASK
1. **Determine the appropriate drugs and dosage for the child's age or weight.** Use the *TREAT THE CHILD* chart to determine the appropriate drug and dosage to give the child. Use the *YOUNG INFANT* chart to determine the appropriate drug and dosage for young infants.
2. **Tell the mother the reason for giving the drug to the child, including**: why you are giving the oral drug to her child, and what problem it is treating.
3. **Demonstrate how to measure a dose.** Collect a container of the drug and check its expiration date. Do not use expired drugs. Count out the amount needed for the child. Close the container. If you are giving the mother **tablets**: Show the mother the amount to give per dose. If needed, show her how to divide a tablet. If a tablet has to be crushed before it is given to a child, add a few drops of clean water and wait a minute or so. The water will soften the tablet and make it easier to crush. If you are giving the mother **syrup**: Show the mother how to measure the correct number of milliliters (mL) for one dose at home. Use the bottle cap or a common spoon, such as a spoon used to stir sugar into tea or coffee. Show her how to measure the correct dose with the spoon.
4. **Watch the mother practice measuring a dose by herself.** Ask the mother to measure a dose by herself. If the dose is in tablet form and the child cannot swallow a tablet, tell the mother to crush the tablet. Watch her as she practices. Tell her what she has done correctly. If she measured the dose incorrectly, show her again how to measure it.
5. **Ask the mother to give the first dose to her child.** Explain that if a child is vomiting, she should give the drug even though the child may vomit it up. Tell the mother to watch the child for 30 minutes. If the child vomits within the 30 minutes (the tablet or syrup may be seen in the vomit), give another dose. If the child is dehydrated and vomiting, wait until the child is rehydrated before giving the dose again.
Steps/tasks continue….

Figure 8-4 shows an example of a learning tool for the nonlinear skill of managing bleeding or spotting in a woman on combined oral contraceptives. **Sample 8-1** at the end of this module shows the basic principles for developing a flowchart.

Figure 8-4. Example of a Learning Tool: Flowchart for the Management of Bleeding/Spotting for Combined Oral Contraceptives

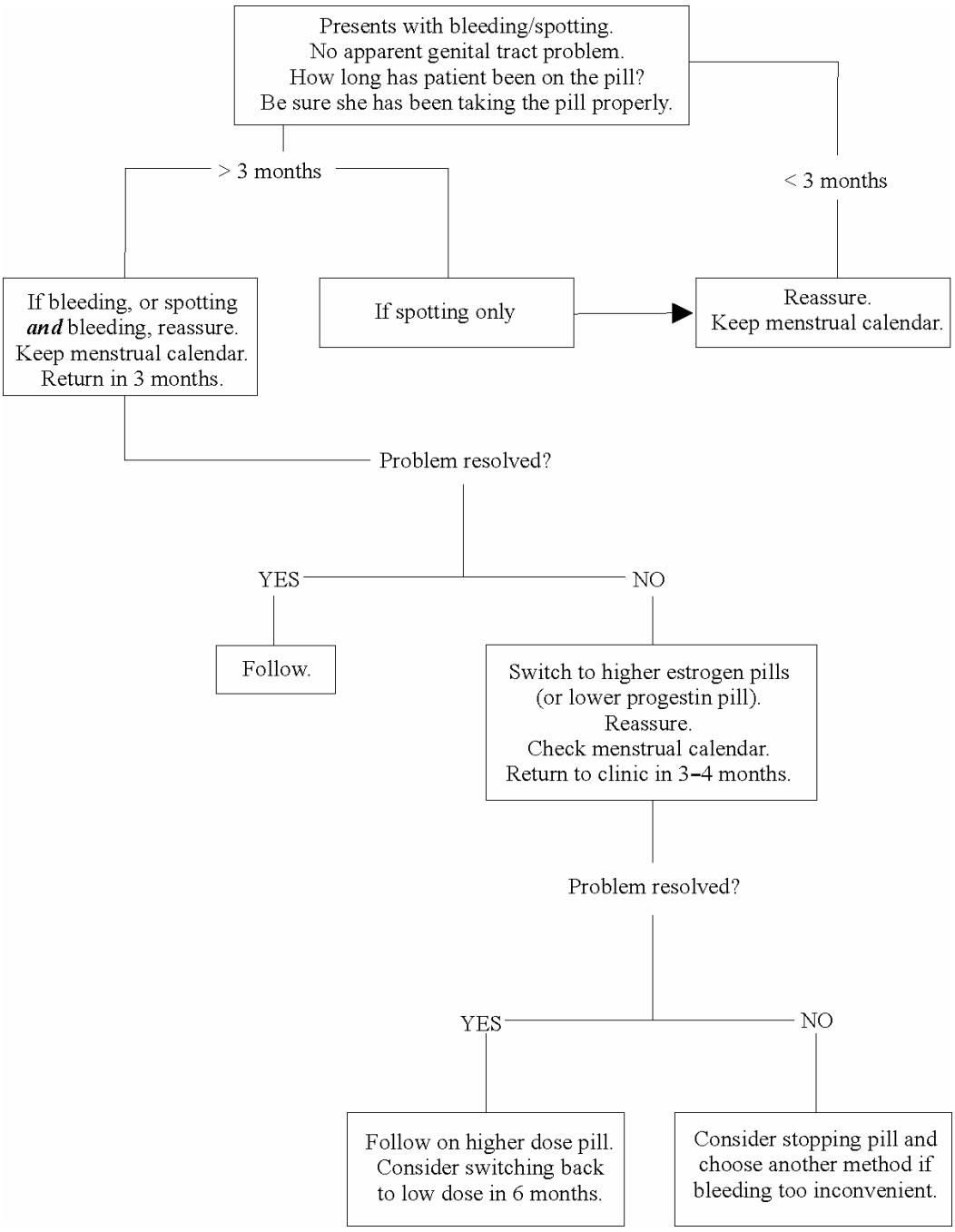
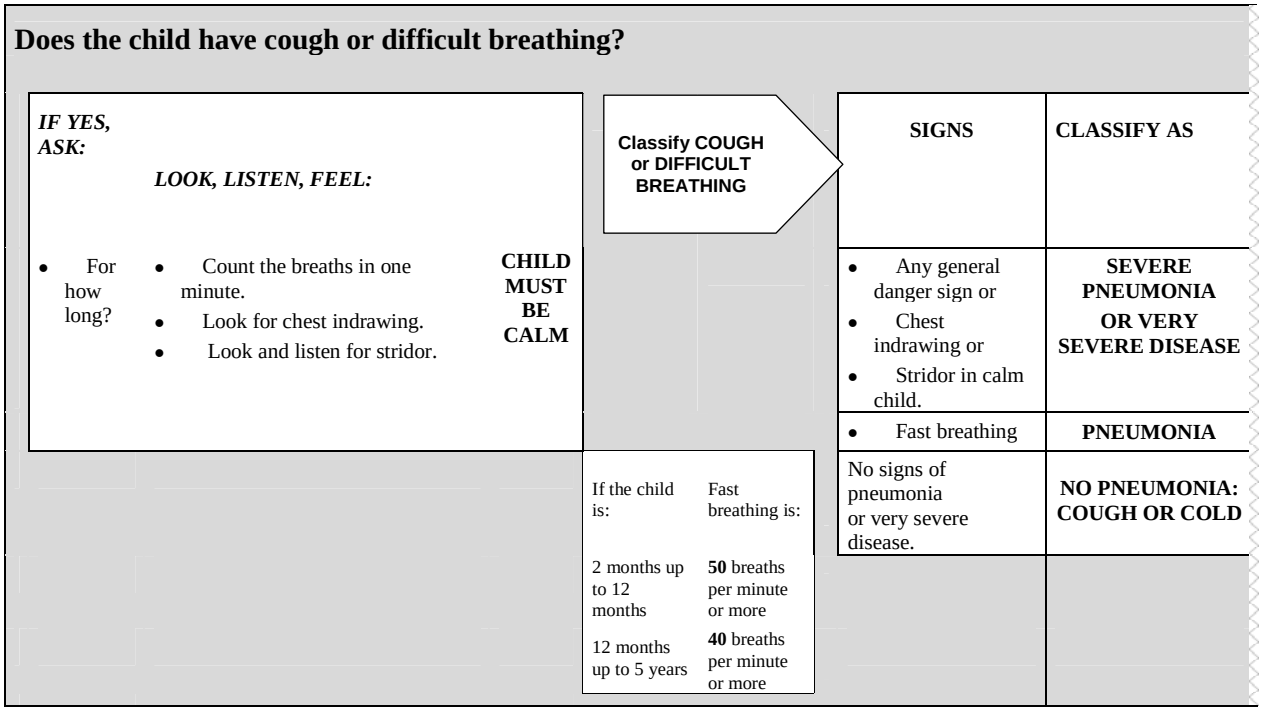


Figure 8-5 shows an excerpt from the generic chart booklet for Integrated Management of Childhood Illness (IMCI). This is another example of a tool that can be used to help students learn a complex, nonlinear skill. In this case the skill is managing common serious childhood illnesses. It is important to note that the contents of the chart booklet can be broken down into smaller, less complex skills.

Figure 8-5. Excerpt from the IMCI Chart Booklet



Use Competency-Based Learning Tools

Below are some examples of how competency-based learning tools can be used:

- Students can follow the steps in the learning tool while a teacher or other students demonstrate a skill.

- During classroom sessions, pairs of students can work together. One student can perform the skill while the other student uses the learning tool to prompt the practicing student, as needed, on the steps involved in the skill.

- Students who are confident in a skill (e.g., inserting an IUD in the pelvic model, counseling a mother about breastfeeding) can use the learning tool to observe each other and give each other feedback. This exercise can serve as a point of discussion before students work with patients.

- Before clinical practice sessions, pairs of students can work together to remind each other of the steps. In this case, one student performs the skill while the other observes and uses the learning tool to remind the practicing student of any missed steps. During this session, observe the students while they perform the skill.

- Before, during, and after clinical practice sessions, teachers or tutors can use the learning tool as a reference standard for

observing and giving feedback to students on their level of competency in performing the skill.

- Students can use the learning tool as a self- or peer assessment tool.

INTRODUCE AND DEMONSTRATE A SKILL

The first step in the skills development process, in both simulated and real environments, is introducing and demonstrating a skill. Demonstration helps to clarify the verbal introduction. Demonstration is also important when a skill is relatively complex, for example, the skill of performing a vasectomy. Almost all skills can be demonstrated, although some skills (e.g., decision-making, communication) are more difficult to demonstrate than others.

Think about how you would demonstrate the following skills:

- **Counsel** an adolescent about safer sex and HIV prevention
- **Decide** how to manage heavy bleeding after an IUD insertion
- **Prioritize** tasks
- **Identify** a process for maintaining an adequate stock of vaccines

Clinical skills such as taking a history, performing a physical examination, or selecting a treatment often can be demonstrated by showing a video, or by acting out the skill with a simulated patient or anatomic model. Other methods are needed, however, to demonstrate skills in the areas of communication, critical thinking, and management. These methods include role plays, case studies, patient scenarios, simulated consultations, or stories. It can be challenging to demonstrate nonlinear skills that involve decision-making points, but it is critical to demonstrate the correct performance of every step of a skill before students try to practice it.

The following activities should be conducted before, during, and after demonstration:

Before: Introduce the Skill

Before demonstrating a skill, it is essential that you introduce it and provide an overview of it. When introducing a skill describe:

- what the skill is,

- why the skill is important,
- when it should be used,
- the objectives of the demonstration, and
- the steps involved in performing the skill.

Teachers need to assess to what degree students understood the information in the introduction. They can find this out by asking open-ended questions such as, "Why is this skill important?" "When should you use this skill?" "What are the main steps in performing the skill?" This two-way communication will also help establish a dialogue and feeling of openness with and among students.

During: Demonstrate the Skill

Make sure everyone will be able to see what you are doing and ask if anyone has any questions. Use visuals aids, teaching aids such as anatomic models, or other appropriate demonstration methods (e.g., role plays, simulated patients). When applicable, provide competency-based learning tools to help students follow the steps as you demonstrate the skill.

Following are some different ways to demonstrate a skill:

- Show slides or a videotape in which the steps and their sequence are demonstrated in accordance with the accepted performance standards.
- Perform a role play in which a student simulates a patient or caretaker and responds much as a real patient or caretaker would.
- Use anatomic models to demonstrate a skill.
- Demonstrate the skill with simulated or real patients.

Demonstrate the skill in as realistic a manner as possible, using a variety of methods, and using actual equipment and materials. Whenever possible, demonstrate a skill (or a procedure that involves a number of skills) using the "**whole-part-whole**" approach:

- demonstrate the whole procedure from beginning to end to introduce students to the entire procedure;

- isolate or break down the procedure or activity into parts (e.g., pre-operative counseling, getting the patient ready, performing the procedure, etc.) and allow practice of the individual parts of the procedure; and

- demonstrate the whole procedure again and then allow students to practice it from beginning to end.

As you demonstrate skills, use the following tips to make the demonstration more effective.

- **Always demonstrate the skill correctly.** Obviously, you must never demonstrate incorrect methods. Remind the students to follow along with the competency-based learning tool if one is available. Correctly perform the steps of the skill in the proper sequence and according to the performance standards. This includes demonstrating "nonclinical" steps such as delegation of tasks to staff, pre- and postoperative counseling, communication with the patient, and decision-making about diagnosis and treatment.

- **Interact with the students.** It is not enough to perform the skill correctly and visibly. You must explain what you are doing and emphasize the important points. During the demonstration, **explain** to students what is being done—especially any steps that are difficult or hard to see. Take enough time so that they can observe and understand each step. **Ask questions** of students to keep them involved, such as, "What should I do next?" or "What would happen if...?" Encourage questions and suggestions. Again, a handout or other learning tool will help students learn the necessary points.

- **Use equipment and materials correctly** and make sure that students see clearly how they are used. You should also make sure that the necessary equipment will be available to the students when they are working in the field.

- **Use a learning tool for complicated skills.** Particularly for complicated skills, during the demonstrations the students should refer to a competency-based learning tool such as a learning guide, decision tree, flowchart, algorithm, poster, or chart. This helps familiarize them with the use of a learning tool, and reinforces the standard way of performing the skill.

Starting with demonstrations that do not involve patients enables you **to take time**, **stop and discuss key points**, and **repeat difficult steps without endangering the health or comfort of a patient**.

After: Summarize the Demonstration

Discuss the demonstration and ask the students if they have any questions. Briefly review the learning tool if one is available. This is an excellent time to ask students questions to assess their understanding of the skill. The essential elements of an effective demonstration are summarized in the job aid at the end of this module.

FACILITATE SKILLS PRACTICE AND GIVE FEEDBACK

The most important step in teaching and learning skills is **practice**. Practice is the performance by students of the skill in the presence of a teacher, tutor, or clinical instructor. This step of skills development also may be called coaching. It ensures that students really master the targeted skills and are able to perform them at the end of the course. As shown in the job aid at the end of this module, practice with feedback is the second step of skills development in both simulated and real environments. After you introduce, demonstrate, and discuss a skill, observe and interact with students as they practice it. Monitor students' progress. Listen, question, give feedback, and help students overcome problems. Feedback ensures that students gain experience with a skill and improve their proficiency where needed. Initial skills should be relatively easy and short, so that students experience success and reinforcing feedback right away. As students become more proficient, you can introduce more difficult skills and raise the standard for earning positive reinforcement.

The following activities should be conducted before, during, and after practice with feedback:

Before: Introduce the Practice Session

To the greatest extent possible, practice should be set up to resemble real-life situations that graduates will face in their future careers. The module *Prepare the Teaching Environment* explains how to prepare for practice in a simulated environment, select sites for clinical practice, and prepare the clinical practice environment. Practice sessions in a real environment (e.g., clinic, hospital, laboratory) will require additional preparation and coordination. They are described in detail in *Manage Clinical Practice.*

After arriving at the classroom or clinical practice site, review the skill with the students, including the steps that will be emphasized during the session. Ask if they have any questions before they begin. Explain how methods such as role plays, case studies, and exercises, and materials such as medical equipment, anatomic models, or videos will be used. If competency-based learning tools are available, ask students to refer to them during the practice session.

Tell students who will be available to help during the session, and how long the session will last. Discuss the roles of the teacher, students, and other instructors during the session, specifying who will practice and who will observe and give feedback. If the group of students is large and the number of teachers or tutors is limited, there are several options you can choose from, including:

- Divide the students into small groups, and have them do a staggered rotation through the practice area.

- Identify other persons, such as tutors or more senior students, who could observe the students during practice and give feedback.

- Ask students to work in pairs or groups of three and take turns practicing, observing, and giving feedback to each other. In this option, the teacher or tutors should move from group to group to observe students as they practice. At the end of the session, each group should report to the larger group the main results of their practice, such as the types of skills practiced, the main difficulties encountered, and the main achievements.

During: Facilitate the Practice Session

You will need to use different teaching methods for different types of skills. It is important to remember that a variety of teaching methods can be incorporated into practice sessions in both the simulated and real environments to prepare students for additional practice with patients, and to reinforce experiences with patients. Following are some examples of methods that can be used to practice healthcare delivery skills in both simulated and real environments for the key skill areas of communication, clinical care, critical thinking, and management:

- **Role plays.** Role plays are useful for practicing communication skills and exploring underlying values and attitudes of both students and patients.

- **Simulations.** Depending on the skill to be practiced, simulations can involve real people, anatomic models, or computer programs. Models do not have to be sophisticated. For example, an orange could be used for students to practice giving injections.

- **Video, photograph, or computer exercises.** These exercises can be used to practice identifying clinical symptoms and signs, or to present problems related to communication or management.

- **Case studies.** Case studies can be individual or group exercises. They can be used to practice clinical decision-making, or to present and solve problems related to the management of health services.

- **Projects.** In a project, the teacher asks a student or a group of students to attempt a specific task, such as finding out what local myths there are about family planning methods. In addition to building critical thinking skills, projects like these increase students' skills in talking to people and collecting and reporting information.

- **Work with real patients.** Low-risk skills such as taking a history, or skills that students have practiced and in which they feel confident, can be done with real patients so that students can experience how their skills apply to real-life situations.

During the practice and feedback session, a great deal of two-way communication should occur between the teacher or tutors and the students. This two-way communication involves the use of feedback, active listening, questioning, and problem-solving skills to reinforce the development of skills within a positive learning climate.

Feedback

Practice does not make perfect unless it is combined with feedback. Feedback is information given to students about the quality of their performance. It is essential throughout learning, and particularly during and after practice sessions and after students have their skills assessed. If given correctly, feedback will function as reinforcement by encouraging students to try a new behavior again, with specific plans for how to improve. To be effective as reinforcement, feedback must be specific, constructive, and nonjudgmental. The critical aspects of feedback are **who** can give it, **what** behaviors should be reinforced or corrected, and **how** they should be reinforced.

Use positive feedback to tell students what they are doing well. Positive feedback gives students a clear idea of which correct behaviors they were demonstrating, so that they can repeat those behaviors. Use constructive feedback to tell students how to improve their performance. Constructive feedback must make clear to students how they can correct their inappropriate or incorrect behaviors. It should not overwhelm students by suggesting too many expected changes at one time. Many teachers find it difficult to give constructive feedback, but it is essential in helping students to improve.

Observing students as they practice and providing feedback encourages them to learn in a way that maintains and enhances their confidence and self-esteem. Providing feedback in the classroom or simulated environment is much easier than providing feedback during clinical practice sessions. Although the following guidelines for giving and receiving feedback may be helpful, you will need practice to become more confident in this essential skill.

It is important to note that competency-based learning tools and skills assessment checklists (refer to *Prepare and Use Skills Assessments*) are very useful tools for giving feedback to students, because they describe the standard against which the quality of the students' performance will be judged.

Following are some guidelines for giving feedback:

- Be timely. Give your feedback soon after the event. For most feedback, it is best to wait until after students have finished practicing an entire skill or procedure before giving feedback. Feedback given during practice should be limited to critical information necessary to avoid a negative outcome (e.g., "Khaled, I suggest that you refer to the learning guide for the type of needle you should use for this injection.").

- Avoid embarrassment. Pointing out a single student's errors in front of other students will only serve to embarrass the student and create a negative learning environment. Emphasize positive feedback during a session. Constructive feedback should be given in the form of "what you can do differently next time," rather than what you did wrong this time.

- Be specific. When feedback is specific, students learn exactly what they did that was effective and what they should do differently next time. Describe specific behaviors and reactions, particularly those that the student should continue and those that should be changed.

  Example (specific feedback):

  "I was pleased to see that you asked each mother with a child older than 6 months what foods she was using to complement breastfeeding."

  - Do not criticize. Describe the consequences of the behavior; do not judge the person.

  Example (nonjudgmental feedback):

"When you inserted the speculum, you did not tell the patient what to expect. I saw her wince and tense up, making it difficult for you to open the speculum and painful for the patient. If you tell the patient what you plan to do ahead of time, it will help her relax and make the experience more pleasant for everyone."

- Take responsibility for your own feedback. Speak for yourself, not for others.

- Be encouraging. End your feedback with words of encouragement, reaffirming approval of the performance and the expectation that improvement will continue. An extra "good job!" can be very important for ensuring that the student maintains the skills over a long period of time.

- Convey positive feedback by facial expression and tone of voice rather than words, when appropriate. This type of feedback can be highly effective.

- Give students an opportunity to respond to the feedback, while you actively listen during this response. At a minimum, students should restate specific behaviors they will perform the next time they practice the skill.

Active Listening

Active listening is a communication technique that helps stimulate open and frank exploration of ideas and feelings and establish trust and rapport with students. It helps clarify students' comments and enables the students to be heard and understood. In active listening, it is important to accept what is being said without making any value judgments, clarify the ideas or feelings being expressed, and reflect those back to the students.

The following are examples of active listening techniques:

- Stop talking and listen to the student.

- Restate the student's exact words.

- Paraphrase in your own words what the student said.

- Understand and reflect the student's underlying feelings (identify the emotion).

- Identify with the student's emotions and state the implications of those feelings. ("If I could perform the skill that well, I would be happy.")

When you are actively listening, it is appropriate to ask non-leading questions such as, "Can you tell me more about that?" or "Help me understand what you said." It is also appropriate to ask for help as a part of active listening; for example, "I'm not sure I fully understand what you are saying," or "I'm confused as to whether you mean the doctor or the nurse. Can you explain more?" Active listening does not include probing questions of a cross-examination type such as "Why did you do that?" or "What are you going to do about that?" Active listeners are not accusatory, nor do they ask questions that lead to only one answer. Active listening reflects what has been said and draws the student out to expand further on the meaning or feelings. It also can be used to shape learning and reinforce effective behavior in a positive way.

Everyone likes being heard and appreciated. Supportive comments **strengthen** and **reinforce** desired behavior.

Questioning

Questioning is used to assess students' knowledge and to develop their problem-solving skills. Teachers can use two types of questions: **closed questions** that have a small range of answers (often **yes** or **no**); and **open questions** that allow a wide range of responses, and permit students to describe in their own words the answer to the problem or question. Both types of questions are useful in assessing students' level of knowledge.

When using questioning to assess students' knowledge, consider using different types of questions. Questions can range from those that ask for facts and information to questions that present new or hypothetical situations for consideration. Questions can also probe the depth of students' knowledge and understanding. They can even be used to help develop and assess decision-making skills. Examples of such questions are:

- Factual questions, beginning with *what*, *where*, or *when*, that obtain information and begin discussion

  Example: "Okay Nabil, what shows you that this infant is well attached to the breast?"

- Broadening questions that assess additional knowledge

  Example: "When forming a list of possible diagnoses, taking a good history is the most important task. What questions should you ask about every presenting complaint or problem?"

- Justifying questions that challenge ideas and assess depth of knowledge and understanding

  Example: "True, anemia is a common problem in pregnancy. What are the possible causes?"

- Hypothetical questions that help develop critical thinking skills

  Example: "Carlos, a woman with an IUD comes in complaining of vaginal discharge. What are the possible causes?"

- Alternative questions that assess decision-making skills

  Example: "If a woman complains of severe headaches while taking oral contraceptives, what additional information would you gather?"

- Checking questions that assess understanding

  Example: "How does a skin pinch help you assess dehydration? Why is it important?"

Questioning provides excellent opportunities for students to practice problem solving and decision-making and receive immediate feedback. Questioning does **not** mean interrogating. Tell students that the purpose of questioning is to help guide instruction and develop cognitive skills during skills practice, not to berate or belittle them.

After: Summarize the Practice Session

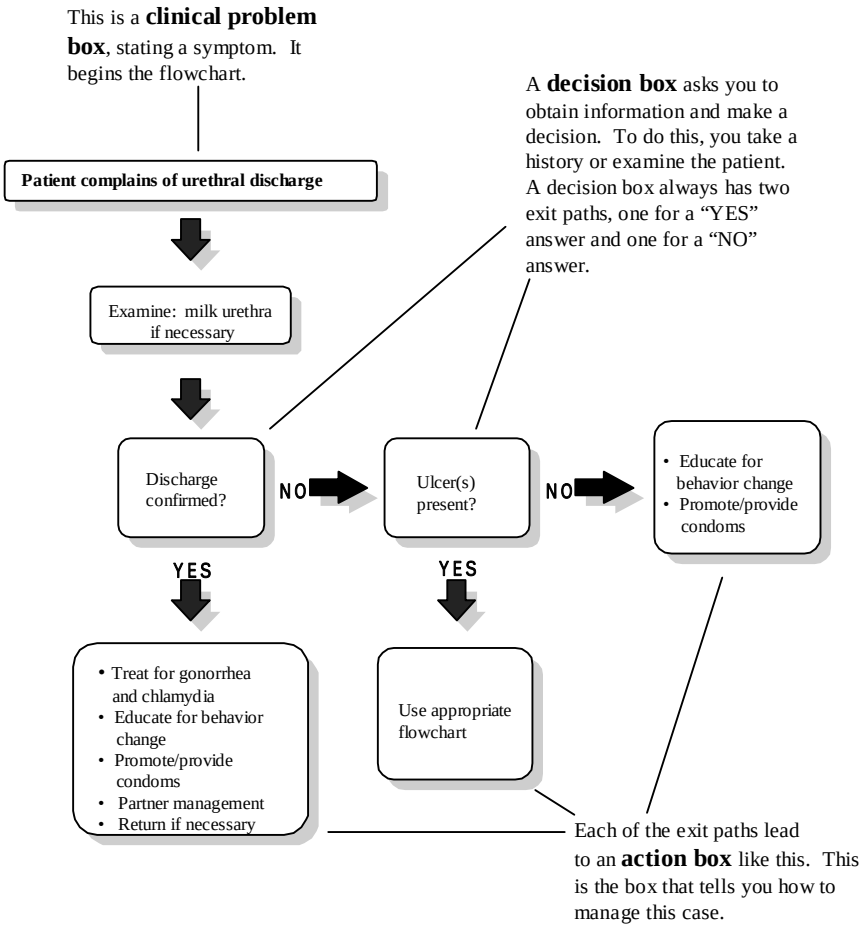
Conduct a feedback session immediately after practice. First, ask students how they felt about their own performance. Begin by asking them what they believed they did well and what they would like to improve, or what they would do differently next time. Refer to a competency-based learning tool, if one is available, for a quick review of the steps, and ask students where they experienced difficulty. Then discuss the strengths of their performance and offer specific suggestions for improvement. Determine if they need additional practice and, if so, arrange for additional independent or facilitated practice sessions.

SUMMARY

Helping students develop healthcare delivery skills is a process of introducing and demonstrating skills, providing opportunities for practice and feedback in simulated (e.g., classroom, skills development lab) and real environments (e.g., clinic, hospital,

laboratory), assessing students' competence, and providing feedback. This process can be applied for all types of healthcare delivery skills—whether in the area of communication, clinical care, critical thinking, or management. The process not only builds students' competence and confidence, but also helps students develop and integrate knowledge, morals, values, and ethics into their provision of health services.

Sample 8-1. Introduction to Flowcharts



MODULE EIGHT JOB AID: PART ONE
THE STEPS IN THE SKILLS DEVELOPMENT PROCESS

	STEP 1 INTRODUCE AND DEMONSTRATE	STEP 2 PRACTICE WITH FEEDBACK	STEP 3 ASSESS
Teacher	Introduces and demonstrates the skill	Observes students as they practice and provides feedback on their performance	(See *Prepare and Use Skills Assessments)*
Students	Observe the skill introduction and demonstration	Practice the skill	
Before	Teacher: ● Introduces the skill (i.e., its purpose, how it relates to other skills, etc.) ● Gives students appropriate memory aids ● States the objectives of the demonstrations ● Uses visual aids and a variety of interactive teaching methods to introduce the skill ● Briefly describes the main steps of the skill (may use a memory aid or learning tool) ● Demonstrates the skill correctly ● Asks questions ● Discusses and reviews the skill after demonstration	Teacher: ● Reviews and discusses the steps of the skill (may use a memory aid or learning tool) ● Answers any questions about the skill Teacher and students discuss the role of the teacher during the practice session.	
During	Teacher: ● Demonstrates each step of the skill ● Uses visual aids and interactive teaching methods to demonstrate the skill Students observe the demonstration (may refer to a memory aid or learning tool). Both ask questions and discuss.	Both: ● Students practice and perform the skill while being observed by the teacher or other students. ● Teacher interacts with students as they practice. ● Students ask questions. ● Teacher listens, responds, asks questions, gives positive feedback, and helps students to solve problems. ● Teacher and students set goals for additional practice, if needed. Teacher notes areas where students perform well and areas where they need improvement (may use a checklist).	

	STEP 1 INTRODUCE AND DEMONSTRATE	STEP 2 PRACTICE WITH FEEDBACK	STEP 3 ASSESS
After	Both: ● Discuss the skill ● Review the skill (may use a memory aid or learning tool) Teacher answers any questions. Students are ready to practice.	Students: ● Share feelings about positive aspects of the practice session ● Offer suggestions for self-improvement Both review the steps of the skill (may use a memory aid or learning tool). Teacher provides positive feedback and offers suggestions for improvement. Both set goals for additional practice if needed. Teacher determines whether students are ready for skills assessment.	

*All three steps—demonstration, practice with feedback, and assessment—can occur in either a simulated or real environment (e.g., laboratory, clinic, hospital ward). For difficult or complex skills, it is recommended that the steps first be performed in a simulated environment, and then repeated for the same skill in a real environment.

MODULE EIGHT JOB AID: PART TWO
DEVELOPING HEALTHCARE DELIVERY SKILLS

STEP 1: INTRODUCE AND DEMONSTRATE

- **Introduce the skill.** Explain when the skill is used and why.
- **Give students appropriate memory aids** (e.g., diagrams, flowcharts, learning guides, job aids, etc.), if they are available, to follow as you demonstrate the skill.
- **State the objectives** of the demonstration.
- **Make sure that everyone can see.** Tell students to position themselves so that they can see the demonstration.
- **Use visual aids and a variety of teaching methods.** Whenever possible, use videotapes, slide set, or photographs. Teaching methods such as case studies, role plays, and clinical simulations are particularly helpful for demonstrating skills in the areas of communication, critical thinking, and management.
- **Demonstrate the skill correctly.** Use memory aids (e.g., diagrams, flowcharts, learning guides, job aids, etc.), if they are available, to demonstrate the skill according to the standard. Do not deviate or use shortcuts during a demonstration. Explain what you are thinking, and the reasons for any decisions. **Use the whole-part-whole** approach. Demonstrate the skill as a whole, then break it down into its parts, then demonstrate the whole again.
- **Ask questions** during the demonstration. This helps students pay attention and understand how knowledge and attitudes contribute to completing a skill successfully.
- **Discuss and review** the skill after the demonstration.

STEP 2: PRACTICE AND GIVE FEEDBACK

- **Review and discuss the steps of the skill.** Answer questions.
- **Give students opportunities to practice.** Depending on the type and complexity of the skill, students may practice in different ways, such as with other students, anatomic models, simulated patients, or real patients.
- **Interact with students as they practice.** Listen, ask questions, give positive feedback, and help students to solve problems.
- **Give feedback.** After practice, ask students to share their feelings about what they did well and what they need to improve. Tell students what they did well and give suggestions for how they could improve.
- **Set goals for additional practice if needed.**

STEP 3: ASSESS

- **See module *Prepare and Use Skills Assessments*.**

MODULE NINE

MANAGE CLINICAL PRACTICE

INTRODUCTION

Practice in the clinical setting is essential for developing healthcare delivery skills. Clinical practice helps prepare students for the roles and responsibilities they will hold in their profession, and gives them opportunities to integrate their knowledge, skills, and attitudes.

Previous modules have described how to identify learning objectives for skills and how to select sites for practice in simulated and real environments. Previous modules have also introduced group learning activities that can be used to provide opportunities for practice. Clinical practice provides further opportunities for students to observe and practice healthcare delivery skills in a real setting and receive feedback on their performance. You may be a teacher working with a clinical instructor or a clinical instructor managing clinical practice alone. Whether you are responsible for one clinical practice session, a series of sessions, or an entire clinical rotation, you must know how to manage clinical practice effectively.

Main Objective

After completing this module, you will be able to manage clinical practice effectively.

Supporting Objectives

To meet this objective, you will:

- Select and prepare clinical instructors and staff
- Coordinate clinical practice
- Conduct clinical practice sessions
- Monitor students' progress

SELECT AND PREPARE CLINICAL INSTRUCTORS AND STAFF

A successful clinical practice experience depends on the participation of several key individuals:

- The **student**, who comes prepared for clinical practice, attends all the clinical practice sessions, and actively seeks out and participates in learning experiences.

- The **teacher**, who is responsible for the classroom portion associated with the clinical practice rotation. The teacher prepares the students for clinical experiences by providing essential knowledge, demonstrating key skills, and giving the students feedback during practice sessions and learning activities.

- The **clinical instructor**, who coordinates students' activities in the clinical setting. The clinical instructor may also be the classroom teacher, although this person's capacity to fill this clinical role is often limited by her or his classroom workload, level of skills, and other factors. The clinical instructor may be another faculty member whose sole responsibility is managing clinical practice, and may be posted at either the school or the clinical site. The clinical instructor may also be a member of the clinical staff selected and prepared to manage clinical practice in cooperation with a teacher. However, as educations budgets become increasingly tight, this position is often eliminated, leaving management of clinical practice to teachers.

  The clinical instructor coordinates students' assignments in cooperation with the teacher, demonstrates skills and observes students, provides feedback and formative and summative assessment for students, ensures that adequate learning opportunities are provided, and supports students and staff throughout clinical practice rotations.

- The **staff members** (also called **tutors** or **preceptors**) who are assigned to work with students. The role of staff members can vary among educational systems, especially with regard to conducting formal assessments of students. Nevertheless, they often are a key source of assistance and feedback, as well as supervision, to students.

Clinical instructors and staff may already be in place at certain clinical practice sites, or they may need to be recruited. When selecting clinical instructors or staff to work with students, look for individuals with the following attributes:

- Time available and a desire to work with students

- Proficient healthcare delivery skills that are consistent with what is being taught

- Excellent interpersonal communication skills

- Organizational skills

- Teaching skills

Although all of these attributes are important, rarely will you find all of them in one provider. You will have to prioritize among them. Keep in mind that some areas can be strengthened more easily than others; you can address gaps in the instructors' and staff members' skills and abilities when you prepare them to work with students. The desire to work with students is a crucial quality that these individuals must have, whereas teaching skills, which are not commonly found in providers, can be developed through training and practice. Another quality the selected individuals must have is proficiency in the skills that the students are being taught. This area can be strengthened later, but identifying providers who are already proficient in the skills will simplify the process of preparing clinical instructors and staff.

Prepare Clinical Instructors and Staff

Teaching institutions will sometimes have standing agreements with clinical sites to provide clinical practice opportunities for their students. There may be a documented agreement between a teaching institution and clinical practice site that describes performance expected from the students, teachers, clinical instructors, clinical staff, and others involved with teaching. If a formal agreement does not exist for the clinical practice site, clarifying expectations is even more important.

After the selection of clinical instructors and staff to work with students, it is important to strengthen the areas in which they do not completely fit the profile described on the previous page. Most often, this will mean ensuring that:

- their clinical knowledge and skills are up-to-date and consistent with what is being taught; and

- they have the teaching skills, such as demonstrating with models, coaching, providing feedback, and performing assessments, that they will need in working with students.

When clinical instructors and staff first assume this role, ensuring that they have these skills may require considerable effort, including providing workshops, seminars, and key documents and educational materials. Therefore, selection and preparation must begin well before students move into the clinical practice area. Furthermore, you will need to make sure that clinical instructors and staff have both their clinical and teaching skills refreshed and updated periodically.

Before **each** clinical rotation, additional preparation of all clinical instructors and staff is required. Some ways to do this are:

- Meet with the clinical instructors and staff members to communicate your objectives and requirements for the clinical rotation and discuss any questions. Communicate expectations for student and staff performance and any updates or guidelines on new content areas that may have been added. The job aid at the end of this module includes a handout for clinical instructors and staff to help prepare them for their role.

- Inform the clinical instructors and staff of the students' abilities and learning needs. Encourage them to clarify the students' goals and expectations at the beginning of clinical practice. The staff should do an initial assessment of students' skills, even if it is as simple as asking them questions about their experiences and learning needs.

- Inform clinical instructors and staff about how to give feedback on students' performance. Provide them with any of the assessment tools (e.g., checklists, recording forms, student feedback reports) they will need. Assessment tools are described in detail in *Plan and Use Skills Assessments*. If a staff member is assigned to the student, will the staff member be required to fill out the student feedback form? To whom should the staff come regarding any issues about students? How often are they expected to give feedback to the students? Will they participate in any sort of formative or summative assessment of students? Discuss this with the staff and provide them with training and any essential assessment tools. Share information about how to give feedback in the clinical setting as described later in this module.

- Clinical practice carried out in communities or homes may be difficult for you to observe. An efficient way to prepare those sites is to provide the students with the necessary information, the learning objectives, assessment tools, and a type of documentation form for recording activities they complete. The students are then responsible for meeting the learning objectives or sharing them with local staff, as well as documenting their experiences or asking the local staff to document for them. Types of documentation forms are discussed later in this module.

Coordinate Teaching

Clinical practice rotations are managed either by teachers, clinical instructors, or teachers and clinical instructors working together. When coordinating with teachers or clinical instructors, communicate clearly with your partner. When working with clinical instructors, meet to discuss how much advance notice they need for student placements, how they plan to prepare and work with staff, and how they will communicate with others about

students' activities and performance. Share the related schedule or syllabus and discuss dates of student placements, schedules, and availability.

Give the student performance report for your course to the clinical instructors or staff. Communicate which learning experiences or attitudes they should emphasize in clinical practice. Determine when student performance reports will be completed, collected, and discussed with students.

Discuss plans for student assessment with other teachers, clinical instructors, and staff. In addition to the student performance report, a checklist may be required for observation of certain skills. Provide the clinical instructor and staff with all of the necessary checklists and a summary of the skills they will be responsible for observing. Ask them how they wish to communicate with you about the students' progress and what information they would find helpful for facilitating the students' learning.

COORDINATE CLINICAL PRACTICE

Clarify Roles and Responsibilities

Coordination includes ensuring that all involved understand their roles and responsibilities. It also involves planning and structuring clinical practice, and ensuring that logistics have been properly managed, to provide the best learning experience. Clinical practice requires that all students, teachers, clinical instructors, and staff carry out specific tasks throughout the clinical practice rotation. Below are examples of the different tasks for clinical practice for students, teachers, clinical instructors, and staff. Sometimes, teachers will manage clinical practice and clinical instructors will assist by providing supervision on the ward. At other times the clinical instructor will be responsible for the overall management of the rotation as well as supervision at the clinical practice site.

Students

- Review any assigned readings or checklists
- Attend and actively participate in all clinical practice visits
- Take an active role in learning and communicate questions and concerns to the clinical instructor or teacher
- Obtain comprehensive and targeted health histories
- Conduct physical examinations

- Present findings clearly and concisely
- Observe demonstrations of skills and perform skills
- Select and interpret screening and diagnostic laboratory tests in collaboration with the clinical instructor
- Co-manage patients with complex health problems
- Educate and counsel patients and families
- Coordinate and communicate patient management with the clinical instructor
- Document findings and experiences in an organized, thorough manner
- Evaluate clinical practice experience

Teachers, Clinical Instructors, and Staff

- Maintain up-to-date healthcare delivery skills in your areas of expertise
- Review related learning and teaching materials or tools
- Review learning objectives for the clinical practice session or rotation
- Ensure that the necessary logistics have been arranged
- Orient clinical staff and any others involved in teaching to the learning objectives and the tasks expected of them
- Communicate regularly with any other teachers or clinical instructors
- Orient students to each new clinical site, with the assistance of a staff member
- Ensure that students and any other clinical instructors or clinical staff members have the essential tools (checklists, learning guides, logbooks, student performance reports, etc.)

- Review learning objectives with the students, clinical staff, and other teaching assistants
- Select appropriate patients based on the learning objectives for the session or rotation
- Demonstrate skills for students
- Observe students as they practice, and provide frequent feedback on their performance, discussing both strengths and areas for improvement
- Assist students, clinical staff, and other teaching assistants with any difficulties
- Sign and review the logbook
- Plan with the students for additional experiences
- Assess and report on students' performance
- Monitor students' progress throughout the clinical practice experience, and report results to other teachers or clinical instructors responsible for the session or rotation

Provide a list of tasks to help remind everyone of the performance expected. Review the tasks to ensure that all involved are fulfilling their roles. The tasks of teachers and clinical instructors will shift depending on whether the teacher or clinical instructor is responsible for managing the clinical practice rotation. If the management role is unclear, communicate with your teaching institution and the administration of the associated clinical practice site to clarify responsibilities.

Use Objectives to Plan Clinical Practice Activities

As with any teaching, begin by defining or reviewing the learning objectives. Clinical practice requires learning objectives that address the different types of healthcare delivery skills—communication, clinical, critical thinking, and managerial skills. If you are responsible for a clinical session or rotation, review the learning objectives for clinical practice. If there are no learning objectives, write them based on the desired competencies (see module *Develop Objectives for Learning*).

After the learning objectives have been reviewed and defined, determine which objectives can be met in the outpatient department and which in the inpatient ward. Traditionally, most clinical practice has taken place in inpatient settings, even though the

majority of healthcare providers will work in outpatient settings during their careers. For this reason, it is essential to develop skills in outpatient settings. External clinics, communities, and home visits are other sites used in clinical practice activities.

Outpatient Department

The outpatient department provides many excellent opportunities for students to develop healthcare delivery skills. The outpatient department is the point of first contact with most patients and, therefore, is the most appropriate place to practice interviewing and interpersonal and counseling skills as well as clinical skills. It is the best place to develop an initial care plan and to teach patients how to implement the plan at home, because the inpatient ward is often more focused on direct medical interventions. It also is an excellent interim step between simulated practice and working with very sick patients in the inpatient ward. Below are some examples of learning objectives that can be met in the outpatient setting:

- Use effective communication techniques when interviewing a patient
- Perform a physical examination
- Observe an IUD insertion
- Provide family planning counseling and methods
- Classify the severity of an illness or suggest a diagnosis
- Provide counseling and testing for HIV
- Educate and counsel a patient or caretaker
- Advise a mother about when to return to the clinic

Inpatient Ward

In inpatient settings, patients are usually seriously ill, and have already started a care plan and specific treatments. Inpatient wards are a good place to teach patient management, practice healthcare delivery skills, and demonstrate management of rarely seen conditions. The inpatient ward may help students meet some of the following skill objectives:

- Assess clinical status

- Perform specific clinical interventions such as administering an intravenous solution

- Document information on the patient's plan of care, treatment, and changes in condition

- Communicate clearly with clinical staff and family (as appropriate) the findings about a patient

- Review diagnostic test results and apply them to the patient's condition

External Clinics and Home Visits

Some programs have a community or home-based component, and some may depend on distant clinics for clinical practice opportunities. These sites may be useful for meeting objectives around the following skills:

- Assessment of environmental hazards

- Group and individual education skills

- Communication skills

- History-taking skills

- Infant and postpartum visit assessment skills

Structure Clinical Practice Sessions

Keep the following in mind when structuring clinical practice sessions:

- **Move from basic to more complex skills.** Once students master simple skills, they will feel more comfortable with complex skills. For example, students should be able to manage a normal labor and childbirth competently before they manage complications. This progression allows students to develop confidence and helps ensure their success.

- **Move students from observation to direct work with patients.** Continue the skills development process by demonstrating skills for students and allowing them to practice and receive feedback before demonstrating skills for assessment (see *Facilitate the Development of Healthcare Delivery Skills*).

- **Structure activities to allow for the most interaction with patients.** Although demonstration is appropriate in the beginning of clinical sessions, allow students direct contact with patients as soon as you believe it is appropriate. The more students work with patients, the more knowledge and experience they will acquire.

- **Plan a rotation system so that students do not overwhelm one area.** For example, three or four students are the most that a specific area of a clinic can absorb without affecting service delivery. If there are more, plan a rotation system that allows each student to have equal time and opportunity in each clinic area. This also helps balance the load for staff members who will be working with students. For example, several students can be assigned to the counseling area, several to the screening area, several to the outpatient department, and several to different inpatient wards. They can change work areas every few hours, every day, or every few days—whichever seems most appropriate.

- **Prepare activities that students can do when there are no appropriate patients at the clinical practice site.** There may be times when students will not have any planned activities with patients. Provide alternative activities for learning such as interviewing patients about patient satisfaction, observing existing infection prevention practices on the inpatient wards, reviewing charts, and assessing how care is documented.

Choose a Teaching Approach

Choose teaching methods for both outpatient and inpatient teaching. Below are several suggested methods for each setting. Decide on the method based on the number of students, patient caseload, availability of clinical instructors and staff, and physical space. If you are coordinating clinical practice with another clinical instructor or other staff member, discuss these methods and decide together which ones will be most effective.

Outpatient Department

- **Apprentice.** In an apprenticeship, students function as healthcare providers while the clinical instructor or assigned staff member closely observes and intervenes when appropriate. This slows down patient flow and must be used with sensitivity toward the patients' waiting time and the clinic's caseload. Apprenticeships provide excellent practice in interpersonal skills such as interviewing and counseling.

- **Team member.** Students function as a member of the team. They see patients individually or in pairs in a separate room,

and then report back to a clinical instructor or assigned staff member about their findings and recommended plan of care. This gives students a more independent experience but takes more of the patient's time.

- **Supervisor.** Students are assigned to several different rooms, and a clinical instructor or other designated staff member moves back and forth among the rooms providing feedback and supervision. This method allows students a great deal of independence, but does not allow for much direct supervision.

Inpatient Ward

- **Patient-centered teaching.** This option allows a student to be assigned to one or several patients to follow over an extended period of time. The student works under the supervision of a clinical instructor or assigned staff member and is responsible for the patient's care. The student will present the patient during rounds, assist in creating, documenting, and implementing the care plan, and communicate with the staff about the patient's condition. This is a very common method of inpatient teaching and can be very effective.

- **Ward rounds.** Ward rounds may be used for either observation or interaction. Care must be taken during ward rounds to protect the patient's privacy and to avoid talking as if the patient were an object. It is better to discuss the patient in a private location away from the bedside.
  - **Observation.** The students join rounds as observers. The healthcare provider managing the patient's care will report the patient's presenting complaint, initial findings and treatment, laboratory and other diagnostic results and interpretation, current condition, and future plans.
  - **Interaction.** During ward rounds, the students are asked questions about the patient's condition and are expected to respond. Several of the students may have been asked to prepare to present the patient to the group.

CONDUCT CLINICAL PRACTICE SESSIONS

Whether you are the teacher managing clinical practice with clinical instructors, or the clinical instructor managing the clinical practice experience alone, you will want to give students activities that will help them get the most from each session. Following are suggestions for such activities for before, during, and after clinical practice sessions.

Positive Feedback

Positive feedback is often easy to give and can be provided in the presence of the patient. Teachers often think that hearing feedback, even positive feedback, will disturb the patient. Many patients, however, find it comforting to hear the student being given positive feedback.

- Keep the feedback simple and relaxed; too much feedback may alarm the patient. Too much praise may cause the patient to wonder, "What is being hidden?" or "Why is it so surprising that this person is doing a good job?"

- At the same time, the absence of feedback of any kind can be disturbing to the student. By this phase of skills development, the student is expected to do a good job even with the first patient, and is accustomed to hearing positive comments. Therefore, to maintain the student's confidence, it is still important to give positive feedback.

Constructive Feedback

Constructive feedback is difficult to give under any circumstances, but particularly when a patient is present. It is important to keep such feedback low-key and restrained. Avoid embarrassing the student and, whenever possible, save constructive feedback until the students are gathered away from the patients. There are a number of techniques that will make it easier:

- Often a look or hand gesture (e.g., a touch on the shoulder) can be as effective as words and less of a concern to the patient.

- In a quiet, direct manner, you can make simple suggestions to facilitate the procedure, for example, "You might find it easier to insert the speculum if you use gentle downward pressure." Do not go into lengthy explanations of why you are making the suggestion or offering an observation—save that for the post-practice feedback session.

- To help a student avoid making a mistake, ask a simple, straightforward question about the procedure itself. If the student is about to miss a step in a procedure, for example, asking the student to name the next step **before** doing anything further could help avoid an error. This is **not** the time to ask hypothetical questions about potential side effects and complications, as this may distract the student and alarm the patient.

- Sometimes, even though they have had extensive practice on models, students make mistakes that can potentially harm the patient. In these instances, you must be prepared to step in and take over the procedure at a moment's notice. This should be

done calmly and with complete control to avoid unnecessarily alarming the patient.

The best approach to providing constructive feedback is to minimize, or even eliminate, the need for it by conducting effective practice sessions in the classroom. If students become truly competent before clinical practice, there will not be much need for constructive feedback in the clinic, except in unusual situations.

Before the Clinical Practice Session

You may be supervising staff and providing overall supervision to many students rather than providing direct guidance to a few students. To ensure that the practice runs as smoothly as possible, make sure the necessary logistics have been taken care of, look for interesting learning opportunities, and assist in selecting appropriate patients.

First, visit the different areas where students will be assigned to see if there are any problems or questions. Check in with the clinical instructors or staff to see if there are any issues that need to be discussed, and ask about any interesting learning opportunities that might presently exist on the unit. Ensure that students know where to go when they have questions.

Be sure students know the learning objectives for the clinical practice session. Meet with the students before the session, either earlier in the week or early in the morning on clinical practice days. The meeting will help students have a productive clinical experience. This meeting should be brief. If a meeting is not possible, be sure the information is provided to the students in a handout. Items to be covered include:

- The learning objectives for that day or the clinical session
- Any necessary scheduling changes
- Students' tasks for that day or session, including the work assignments and rotation schedule if applicable
- Assignments to be completed that day or that session
- The topic for the post-session meeting, so that the students can prepare cases or look for experiences to share
- Questions related to the session or from previous sessions, if they can be answered quickly; if not, postpone them until the post-session meeting
- Discussion about how feedback will be provided in the clinical setting

During the Clinical Practice Session

When you are working with clinical instructors and staff, check in with them periodically to make sure everything is running smoothly. Coordinate with them any planned learning activities that may require your assistance.

Observe student-patient interaction and ask questions to gauge students' understanding. This may also allow you to ask some questions to help the students develop decision-making skills or explain the rationales for their decisions.

Continue the process of facilitating skills development as described earlier. Students now have the opportunity to observe demonstrations, practice, receive feedback, and demonstrate competency in the real setting. Demonstrate skills, observe the students' performance of skills whenever possible, and provide feedback. Ask students if they have opportunities to be assessed in any of the skills in their logbook and if so, arrange for assigned staff or the clinical instructor to observe them as they perform these skills, or observe them yourself.

> **Remember**: Safe and efficient provision of services must be the highest priority for everyone working in the clinic, regardless of individual roles and responsibilities, and must not be compromised for the sake of learning.

Create a positive learning environment. Students will be intimidated and nervous at the beginning of clinical practice experiences. Help reduce their anxiety by having a friendly and helpful manner with them. Encourage the clinical instructors and staff also to help put students at ease so they can learn well and feel comfortable asking questions.

Giving Feedback during Clinical Practice

Feedback is essential to helping students learn and improve in the clinical setting. Teachers, clinical instructors, and staff are all involved in providing feedback to students throughout the clinical practice rotation. In the clinic, the patients, staff, and other students are nearby and therefore feedback must be given with extreme care and discretion. Furthermore, there is not much time to give feedback because the clinic services need to keep flowing smoothly. Share this information on providing feedback appropriately with everyone involved. Discuss plans for how to provide feedback during clinical practice with students **before** the clinical rotation begins. Provision of feedback is discussed in detail in *Facilitate the Development of Healthcare Delivery Skills*.

Protect Patients' Rights during Clinical Practice

Recognizing and maintaining the rights of patients is essential. Consider patients' rights to privacy and confidentiality at all times during clinical practice. The following practices will help ensure that patients' rights are protected:

- **Inform the patient** of the role of each person involved (e.g., teachers, students, clinical instructors, support staff, researchers) and make sure that a licensed provider is always present.

- **Obtain the patient's permission** before having students observe, assist with, or perform any procedures. It is important that patients understand that they have the right to refuse care from a student. Furthermore, do not reschedule or deny care if the patient does not permit a student to be present or provide services. In such cases, a staff member should perform the procedure.

- **Respect the right to bodily privacy** whenever a patient is undergoing a physical examination or procedure.

- **Strictly observe the confidentiality** of any patient information obtained during counseling, history taking, physical examinations, or procedures. Reassure patients of this confidentiality. Conduct discussions in a private area where other staff and patients cannot overhear, and do not refer to the patient by name. This is a special challenge during rounds in the inpatient ward.

After the Clinical Practice Session

If possible, meet with the students at the end of the session. If you cannot meet with them every day, you should still meet with them regularly to assess the progress of their learning in the clinical setting. Conduct these meetings away from the patient care area if possible. Ideally, clinics will have a small room you can use for small group activities or meetings with students. Below are several actions you can take at the end of the day or periodically during the rotation to help further learning:

- Review the learning objectives and assess students' progress toward meeting them

- Present cases seen that day, particularly those that were interesting, unusual, or difficult

- Provide an opportunity for students to ask questions

- Ask students questions about cases or their care plans

- Tell students about the logistics of future clinical practice sessions

MONITOR STUDENTS' PROGRESS

It is important to monitor students' progress to ensure that the session is providing adequate and appropriate learning activities. Monitoring refers to following students' activities, not assessing their competency, which is addressed in another module (see *Monitor and Revise Teaching*).

Logbooks

One very useful tool for monitoring students' progress over a single or several clinical rotations within one course is a **logbook** (also called a **casebook**). A logbook is a list of skills or tasks that students should be able to perform. It provides a standardized tool for students to use in tracking their skills development throughout a course. Each course may have a logbook, or one logbook may be used for several related courses. The clinical instructor, assigned staff member, or teacher will check off each skill or task in the logbook after the student completes it correctly. This allows the students, staff, clinical instructors, and teachers to document students' acquisition of skills. You should share your logbook with other teachers who may also have taught your course to be certain that you have not omitted any skills.

When students are ready, they should ask a clinical instructor, assigned staff member, or teacher to observe their skill performance. The students must perform the task competently in order to be "checked off." The logbook does not provide any guidance in the assessment of the skill or task; an accompanying tool such as a checklist, rating scale, or recording form can be used to guide assessment. If the students do not perform the skill competently, ask them to try again after additional practice. Although use of logbooks requires time because students must be directly observed, logbooks provide a valuable ongoing record of the skills that students are able to perform competently. (Refer to **Samples 9-1 and 9-2** at the end of this module.)

Keep in mind the following points about logbooks:

- Each course should have its own logbook or a section of a logbook for documenting skills that need to be completed either in simulated practice or during clinical practice.
- The skills contained in the logbooks should be based on the associated learning objectives.
- Logbooks do not provide instruction on assessment or standards for assessment. Those are provided separately.

Student

A student performance report is a standardized tool the clinical

Performance Reports instructor or staff member can use to provide feedback on students' performance. Rather than providing information on very specific skills, student performance reports summarize performance in general areas and major skills. A general feedback form may be used to assess students'overall performance. These are covered in detail in *Prepare and Use Skills Assessments*.

Field Notebooks Some programs that require community or home visits use a field notebook to document external learning experiences in clinics, communities, or homes. Field notebooks provide a record of activities completed by the student and are usually reviewed by the teacher or clinical instructor. They may include cases seen, activities or education provided, or immunizations given. Each school usually has its own format for recording learning activities in a field notebook.

SUMMARY

Well-organized clinical practice that is structured based on the learning objectives provides students with important opportunities to develop skills relevant to their future work in the healthcare setting. You can help ensure that clinical practice is an effective learning intervention through careful selection and preparation of the clinical instructors and staff involved. Coordinate practice activities with students, clinical instructors, and other relevant staff to make certain that everyone understands their responsibilities and performs their assigned tasks. Offer a variety of clinical experiences, from observation to direct patient care in outpatient and inpatient settings, community sites, and homes. Finally, monitor students' progress to ensure that each clinical session provides them with appropriate learning activities.

Sample 9-1. Example of Logbook Items for a Family Planning Course in a Nursing Program

TASK	NUMBER (MINIMUM)	DATE(S) COMPLETED	SIGNATURE(S) OF CLINICAL INSTRUCTOR, STAFF MEMBER, OR TEACHER
Counsel and provide condoms	05		
Counsel and provide oral contraceptives	03		
Counsel and provide Depo-Provera	10		
Administer a Depo-Provera injection	10		
Counsel for side effects and refer as appropriate	03		
Demonstrate condom use on a penis model	03		
Counsel about long-term methods	03		

Sample 9-2. Example of Logbook Items for a Neonatal Course in a Nursing Program

TASK	NUMBER (MINIMUM)	DATE(S) COMPLETED	SIGNATURE(S) OF CLINICAL INSTRUCTOR, STAFF MEMBER, OR TEACHER
Neonatal resuscitation (bag/endotracheal)	02		
Gestational assessment	02		
Examination of normal newborn and identification of high-risk babies	02		
Filling up of neonatal case sheet	02		
Feeding of newborn	02		
Cup and spoon feeding	02		
Nasogastric feeding	01		
Breastfeeding	02		
Temperature recording (axial and rectal)	04		
Use of warmer and phototherapy	01		
Use of spacer for asthma	01		
Intravenous access	02		
ARI cases classify and manage	03		
Assessment of sick newborn	02		
Lumbar puncture	03		
Manteaux	02		
Laboratory	--		
Murmur identification	02		

MODULE NINE JOB AID:
INFORMATION SHEET FOR CLINICAL INSTRUCTORS AND STAFF

Thank you for agreeing to work with students! Working with students helps keep your knowledge current, provides an opportunity to help develop new professionals in your field, develops and strengthens your communication skills, and gives you leadership opportunities. As you work with students, remember the following points:

- Communicate clearly with students, staff, and teachers. Share your expectations with them and continue to communicate throughout the clinical rotation.

- Explain your rationale for actions or procedures to the students. Often, healthcare providers may act and intervene with patients without explaining their rationale to students.

- Provide feedback to students frequently during their practice. Do not wait for a formal feedback session to tell them the areas in which they excel and ways they can improve.

- Inform other staff members about the students and their roles and responsibilities. Tell them what they can and cannot expect the students to do in clinical practice.

At the Beginning of the Rotation

- Clarify the students' schedules and responsibilities. Tell them if any special activities are occurring, and when. Schedule times with students during and at the end of the clinical practice rotation to discuss their progress.

- Discuss objectives. Ask students what their objectives are for the clinical practice rotation. Discuss with them your understanding of the objectives and talk about what they will be doing to ensure that they are met.

- Review any special policies, standards, or rules. There may be certain requirements on your unit, whether it applies to the dress code or using precautions for blood and body fluids. Share these requirements with the students.

- Review the student performance report. Tell students you will be assessing their performance midway through and upon completion of the rotation. Encourage them to think about any areas on which they want to focus.

- Tell students to approach you with any questions. Encourage students to take initiative to ask you about any elements of clinical practice that they do not understand. Remind them that, although there may be many students and you will be busy, they should feel free to approach you at any time.

During the Rotation

- Ask the students questions frequently. Ask them to explain their decisions and assess their own performance, and give them feedback on their responses. This helps develop their decision- making skills and helps them find out how much they understand.

- Make time to directly observe students interacting with patients; this will give you information you need to assess their performance.

- Be a good example for students. Communicate clearly with patients and demonstrate an ability to evaluate and self-assess your own performance.

- Communicate with the students' teacher frequently about their progress and which of their skills need more attention. If you find any common problems with the students' knowledge and skills, communicate those to the teacher as well.

In the Middle of the Rotation

- Ask other staff for input on each student's performance.

- Provide a mid-point assessment and share the results with the student and teacher. A student performance report is an excellent tool for this assessment.

- Ask the students about their progress. This is an excellent time to set goals for improving performance and determining what other learning experiences the students need.

At the End of the Rotation

- Provide a final assessment and share the results with the student and teacher or clinical instructor.

- Ask the students how they think their experience could have been improved. Giving them the opportunity to do this anonymously may produce more honest feedback. This information will help you improve the clinical experience and produce competent providers.

MODULE TEN

PREPARE AND USE KNOWLEDGE ASSESSMENTS

INTRODUCTION

We have all completed various types of written assignments and tests. And we all know that pencil-and-paper assessments have limited ability to measure whether or not students can actually perform a task. For example, a written test is not very helpful to a teacher who wants to find out whether students know how to counsel pregnant women about breastfeeding. It would be better for the teacher to assess this skill by watching students as they actually counsel pregnant women (see the module *Prepare and Use Skills Assessments*). Nevertheless, most tasks or skills do have an important knowledge component, and teachers must be careful to assess students' knowledge in a valid, reliable, and feasible way (see *Plan for Teaching*).

Clear learning objectives are critical for the valid assessment of knowledge. *Develop Objectives for Learning* describes how to write learning objectives, and *Plan for Teaching* introduces the concepts of formative and summative assessment. When assessing students' knowledge, you will use **formative knowledge assessments** to help guide students toward meeting the learning objectives, and **summative knowledge assessments** to ensure that students finish the course with the required knowledge. This module describes how to prepare and use tools for both formative and summative assessment of knowledge. It is important to note that the same tools may be used to assess attitudes.

Main Objective

After completing this module, you will be able to prepare and use knowledge assessments.

Supporting Objectives

To meet this objective, you will:

- Select methods for assessing students' knowledge
- Prepare knowledge assessments
- Develop questions for objective written examinations
- Administer and score knowledge assessments
- Use assessment results to improve performance

SELECT METHODS FOR ASSESSING STUDENTS' KNOWLEDGE

Plan for Teaching explains how to choose valid, reliable, and feasible methods for assessing the students' knowledge. Similar methods can be used for both formative and summative assessment of students' knowledge. The difference lies in how the results are used. For example, you can use a short quiz as a formative assessment to give students feedback and also to help them prepare for a summative written test on the same topic. In addition to being assessed by a teacher, tutor, or clinical instructor, students' knowledge can also be measured through self-assessment and peer assessment.

Depending on how the questions within an assessment are constructed, attitudes and cognitive skills such as reasoning and clinical application—not just pure recall—can be assessed. For example, reasoning and clinical application can be assessed through case studies for which students must determine a course of action to overcome a problem or manage a patient. In addition, written examinations can assess "expressed" attitudes by asking students to what extent they agree or disagree with value-based statements. For example, students might be asked to respond to the statement, "All information regarding adolescent patients should be kept confidential, and not shared with members of their family without the patient's consent." In a formative assessment, the range of responses could be "strongly agree," "agree," "neutral," "disagree," and "strongly disagree," while in a summative assessment, more clearly defined responses to the statement, such as "yes" and "no" or "agree" and "disagree," would probably be used.

The following methods can be used for the formative and summative assessment of students' knowledge:

- Drills, quizzes, and practice tests
- Written exercises
- Case studies, clinical scenarios, and patient management problems
- Project reports
- Essay examinations
- Objective written examinations (e.g., true-false, multiple-choice, matching and short-answer questions)
- Structured practical examinations

- Oral examinations

Drills, Quizzes, and Practice Tests

Drills, quizzes, and practice tests are typically used for formative assessment. Drills are verbal question-and-answer periods during a classroom or practical session. They help the teacher get a general impression of students' understanding of the subject. Quizzes and practice tests are short versions of written examinations, and are designed to help prepare students for a summative assessment.

Written Exercises

Written exercises involve asking students to read and then answer questions to check their understanding of the reading. They can also involve asking students to read a case study, or view a video, slides, or photographs and then respond to related questions. Exercises, which are typically completed as "homework," are useful for formative assessment.

Case Studies, Clinical Scenarios, and Patient Management Problems

Case studies, clinical scenarios, and patient management problems typically begin with a variable amount of information followed by a series of questions to which the student should respond. They simulate problem solving or clinical decision-making, and may be completed using paper and pencil or a computer. They are particularly valuable for formative assessment and feedback where they generate lively discussion about the pathways and decisions taken.

Example:

A woman comes to the health center and tells you that she feels tired all the time. You find out that she is 30 years old and about 5 months pregnant.

1. List three things that you think might cause the tiredness.

2. Write down two other questions that you would like to ask the woman.

Project Reports

A project involves doing a task such as surveying the community or working on a healthcare team. Often students present a report on the project after it is completed. Teachers need to be given time to mark project reports, and the scores may not be reliable if they do not have clear standards to follow. However, this method of assessment is very useful for formative assessment, and can be valid if projects are chosen carefully to give students practice in performing important skills. Projects can be very powerful learning experiences and should be graded to encourage students to make their maximum effort.

Essay Examinations

An essay examination is a common type of written examination in which students are asked to write down what they know about a subject or question. Essay questions are easy for teachers to

develop and can test the students' ability to organize and express their ideas. However, the scoring of essay questions is subjective and very time-consuming. Also, when students have to write in a language that is not their first language, this can create an additional challenge for them. One of the best ways to increase objectivity is to develop an answer key for each question. The answer key is a listing of all the points, ideas, or statements that will be counted as correct answers when the test is scored. Modified essay questions are more reliable and feasible. These are similar to a patient management problem in that they provide a scenario and specific questions that a student must answer. For example, "What are the three most likely diagnoses?" or "List five specific questions that would help you narrow the diagnosis."

Objective Written Examinations

An objective examination or assessment is one in which equally competent scorers will obtain the same scores, whereas a subjective assessment is one in which the scores are influenced by the opinion or judgment of the person doing the scoring. The objective written examination includes multiple-choice, matching, true-false, and short-answer questions. It is very structured and each question requires a short, restricted answer or the selection of the correct response. The objective written examination can cover a lot of content, is easy to score and, if appropriately developed, can assess both recall and cognitive skills such as problem solving. This method is described in more detail later in this module.

Structured Practical Examinations

The structured practical examination can assess knowledge, skills, and attitudes. This approach to assessment is described in detail in *Prepare and Use Skills Assessments*. It is not really an assessment method but rather an administrative structure in which a variety of assessment methods can be incorporated. Typically students rotate through a series of stations where they answer questions (orally or written), or perform tasks under observation. Marking sheets for the stations requiring written responses and checklists for the observed stations are prepared beforehand to improve reliability. The "objective structured clinical examination" is one of the most well-known forms of structured practical examinations.[1]

Oral Examinations

Oral examinations are a traditional part of healthcare providers' education. Although they involve important personal contact between the examiners and students, they suffer from serious limitations such as non-standardized questions, limited objectivity, and the considerable time their administration requires.

In view of these limitations, oral examinations should be used only to test competencies that cannot be tested by other methods of assessment. These competencies include alertness, ability to

[1] Harden RM and FA Gleeson. 1979. Assessment of medical competence using a structured clinical examination. *Medical Education* 13: 44–54.

express oneself, confidence, decisiveness, and ability to discuss logically.

PREPARE KNOWLEDGE ASSESSMENTS

Prepare Knowledge Assessments

The following are general guidelines to use when developing knowledge assessments:

- Identify the **learning objectives** or outcomes to be assessed.
- Use **simple and clear language** in all questions. The test item should measure the students' mastery of the learning objective, not their ability to read or to take tests.
- Include **at least one item per objective**. Often there may be a number of test items per objective. Tests with very few items (fewer than 15 to 20) may not be valid. Tests with more than 60 to 70 items may cause students to become tired, lose their concentration, and not do as well on the test.
- Use **correct grammar** in both the question and the possible answers.
- Ensure that **questions reflect conditions stated in the objective**. For example, if an objective states that the student will "identify" something, then the corresponding item should require the students to *identify* as opposed to list or write.
- Is the question in any way **controversial**? If it is, the question should be discarded.
- Are the **distractors (incorrect answers)** in multiple-choice questions reasonable, and similar in structure and length to the correct answers?
- What is the **difficulty** of the questions? Questions of moderate difficulty are best.
- Make **each test item separate** from every other item. If they are not separate, when students miss the first item, they usually miss the next item also. In other words, do not build a test item upon a previous test item.
- Ask the **same or similar questions** to all students. This is particularly important to keep in mind for oral examinations and reports.
- Divide long or complicated examinations into **several parts**.

- Provide **clear directions** for each type of item (e.g., true-false, multiple-choice).

- Decide on the **model answers** to questions. Use answer keys or checklists for scoring.

Assemble Knowledge Assessments

Most likely you and other faculty have prepared questions or items that may be used for testing. When planning for the knowledge assessment, begin by outlining the main objectives of the course or session. Plan the questions so that important objectives are emphasized in the test and all the objectives are represented.

When arranging test items, you can organize them on the basis of one or more of three characteristics: the subject matter, type of item, and level of difficulty.

Arranging test items according to **subject matter** means that the test items are grouped according to a set of subject matter topics. This arrangement usually appeals to students because they see the test as a miniature of the materials to which they have been exposed. The test is easy for students to use and for teachers to assess if the objectives are adequately represented. This is the most common arrangement and is recommended in most situations.

When the items are grouped according to **type**, all similar test items are placed together, including true-false, multiple-choice, and matching items. This grouping simplifies the directions given to the students. It is preferable to use only a few different types of test items.

Test items can be grouped according to their **level of difficulty**, from easiest to most difficult. Such an arrangement has advantages for average and below-average students, because it allows them to use their time more efficiently.

When arranging the items, check that the position of correct answers is random. Develop directions for the students and a scoring key. Review the test after it is arranged and double-check that the directions for each section are clear.

Review the Assembled Assessment

After the examination is assembled and the directions are written, it is a good policy to review each part critically. Consider each item from the students' point of view. Check the grammar and ask yourself the following questions:

- Are there question items for all of the objectives covered by this test? Does the number of test items adequately reflect the amount of time spent on each objective?

- Is the number of items included in the test in direct proportion to their importance in learning?
- Does each item really measure the students' attainment of the objective? If not, how could it be revised to do so?
- Is each set of directions clear? Do the directions apply to every item in the group, or do some items require specific directions?
- Is there ample space to write the response?
- Are tricky, obvious, or irrelevant questions avoided?
- Is each item separate and independent from the rest of the items?
- Are similar items grouped together?
- Is the test designed so that it is easy to score?
- Will students be provided with meaningful feedback about their answers?

DEVELOP QUESTIONS FOR OBJECTIVE WRITTEN EXAMINATIONS

Objective written examinations can cover a large number of learning objectives in one examination. The main advantages are speed both in testing time and in scoring, in addition to high reliability. Although you may not need to create tests for individual courses, you will most likely need to submit appropriate questions for larger examinations or a question bank (i.e., lists of questions available to create a variety of tests), write questions for quizzes or written exercises, or adapt existing tests to ensure that they test the appropriate learning objectives.

Preparing a question bank requires a great deal of effort and the support of the administration. This effort pays off, however, by providing a resource that teachers can use to quickly and easily prepare quizzes, exercises, and tests. Some important steps in preparing a question bank:

- Work in a group to develop questions. Each teacher individually prepares and brings a number of questions to the group. In addition, you may discuss potential questions with students in class. If you are concerned about their remembering the questions, add them to the question bank the following year.
- Sort questions based on one of several methods such as by subject, category, level of knowledge, or type of test item (e.g., multiple-choice, matching).

- Store the question bank on a computer or cards.
- Ensure that only authorized persons have access to the question bank.

The most commonly used question formats for objective written examinations are true-false, multiple-choice, matching, and short-answer. Essay questions can also be used, but are not recommended due to their very subjective nature. **Table 10-1** lists some of the advantages and disadvantages of each question format.

Table 10-1. Advantages and Disadvantages of the Common Types of Question Formats Used for Written Objective Examinations

QUESTION TYPE	ADVANTAGES	DISADVANTAGES
True-False A statement is determined to be true or false.	• Cover a large amount of information • Easy to answer (three to five per minute) • Easy to score	• Very easy to answer • 50 percent chance of guessing the correct answer • Difficult to construct items that are absolutely true or false • Low reliability
Multiple-Choice One or more correct answers are selected among a variety (commonly four or five) of suggested answers.	• Require students to apply knowledge rather than only provide a rote response • High validity and reliability • Guessing is reduced compared to the true-false format • Broad range of content can be tested in a short time period • Easy to administer and score	• To produce valid questions, competence, experience, and time are required • Difficult to construct, especially for realistic distractors • Questions need to be constantly reviewed and revised, especially when used for summative assessment • A bank of questions could overcome these problems
Matching Lists of items are matched based on specific criteria.	• Maximum coverage of knowledge level • Good item to test ability to recognize or identify • Easy to score	• Time-consuming for the student to answer • Not suitable for higher-level learning • Good items difficult to construct
Short-Answer Questions requiring a short (one to two sentences) written answer are given. No pre-defined possible answers are given to students.	• Require students to provide the answer rather than choose from a list of possibilities • If well constructed, high validity • If an answer key is prepared, good reliability	• Require more time than multiple-choice questions to score • The simple, one-word response format is not suitable for higher-level learning • Questions need to be constantly reviewed and revised when used for summative assessment

True-False Questions

A true-false question asks the student to respond with either "true," meaning the statement is true, or "false," meaning the statement is false. These questions assess knowledge and can test understanding; however, this type of question is not very reliable. Students are able to guess the correct answer easily, because each choice has a 50 percent chance of being correct.

Here are tips for writing good true-false questions:

- **The language of true-false test items should be clear, concise, and understandable.** Avoid words such as *more, few, large,* and *good,* because these are relative and may confuse the students. Avoid using negatively stated items (e.g., It is **not** recommended that. . . .) because students may not read the question accurately and may misunderstand the meaning. Use short statements that contain only one idea.

- **Avoid words or expressions that frequently identify a statement as true or false.** Words often found in **false statements** are *only, never, all, every, always, none,* and *no.* Those often found in **true statements** are *usually, generally, sometimes, customarily, often, may, could,* and *frequently.*

- **Use statements that are either completely true or completely false.** Avoid a statement that is partially true and partially false. True-false items should focus on one idea and should challenge, but not trick, the students.

- **Make the true statements equivalent in length and number to the false statements.**

Another type of true-false item requires the student to correct false statements to make the statements true. This can be accomplished by underlining one or two key terms and asking the students to change the underlined term(s) if they decide the statement is false. With this type of item, you will need to determine if the revised terms are correct, which adds some effort and subjectivity to the scoring process.

Example:

Read the following statement. Circle "T" if the statement is true. Circle "F" if the statement is false and write in the blank space the word(s) that would replace the underlined word(s) to make the statement true.

T F <u>Spermicide</u> is the family planning method recommended for preventing sexually transmitted infections and HIV. _____

Write clear directions that indicate how and where the students are to respond. Should they indicate the correct responses on the test or on a separate form? What is the point value of each item?

Example:

Directions*: For each of the following statements, print a capital T in the block to the left of the number if the statement is true or a capital F if the statement is false. You will receive one point for each correct answer.*

Multiple-Choice Questions (MCQs)

Multiple-choice questions are the most widely used type of objective test item. It is difficult to write clear multiple-choice questions, but they are easy for students to complete and for teachers to correct. MCQs are preferable to true-false questions because they make guessing the correct answer more difficult. The **stem** of the multiple-choice item poses a question or a problem situation that is followed by alternative answers. The stem may be an incomplete statement or a question. One of the **responses** is correct while the others are incorrect. The incorrect responses are called **distractors**.

Below are tips for writing clear MCQs:

- **Write simple stems that clearly state the central problem.** The stem should be in the form of a question. Try not to repeat phrases or terms in the responses; rather, include them in the stem. Be sure the content is based on a learning objective.

- **Avoid using negative terms in the stem** (such as *no, never, none,* and *not*) because students sometimes misread or misunderstand them. If you must use them, bold-face and/or underline the term to draw attention to it.

  Example*: "Which of the following is* ***not*** *the. . . ."*

- **Provide a coherent list of possible answers.** Use similar style and keep the responses similar in length. The list of responses should be grammatically consistent in form. Use an "a/an" at the end of your stem to ensure that each of the responses will complete the statement correctly, regardless of whether or not the first word of each response begins with a vowel.

- **Write reasonable distractors.** Avoid obviously wrong or silly distractors. Use distractors that are clear—they are not meant to be trick questions or confuse the student. All distractors should be of similar length to avoid giving clues to the correct response. You may get ideas for good distractors by looking at previous tests and using students' most frequent errors.

- **Use of "All" and "None of the above" in responses should be avoided as much as possible.** When used, these choices should be the correct responses approximately 25 percent of the time when four responses are given.

Another form of the multiple-choice question is the scenario item. The scenario item typically presents a situation and then asks the student a series of questions related to the situation.

Example:

Mrs. B. is 20 years old and had an IUD inserted a month ago. She came to the health center 2 days ago with vaginal discharge and abdominal and pelvic pain. She reports that she does not have any fevers or chills.

1. What is your plan?

A. Gather history, send vaginal cultures, remove the IUD.
B. Gather history, send vaginal cultures, follow up in 3 days.
C. Gather history, treat with antibiotics for presumptive PID.
D. Gather history, send vaginal cultures, treat with antibiotics for PID, and remove the IUD if the woman wishes.

Several multiple-choice questions can be created for the same scenario, but these questions must be independent of each other—the answer to one cannot be dependent on the answer to the others. This type of multiple-choice question requires a higher level of thinking.

Multiple-choice questions are very versatile, because they can test a wide range of knowledge, from simple identification through analysis of more complex content, but it can be difficult to create realistic distractors. These questions are easily scored and can be used to create valid and objective tests. A disadvantage is that good items can be difficult to write.

Write clear directions that indicate how and where the students are to respond. Should they indicate the correct responses on the test or on a separate form? Is there only one correct answer or one best answer? What is the point value of each item?

Example:

Directions*: Each of the items on this examination is followed by four possible responses. For each item, select the* ***best*** *response. Indicate your answer by circling the appropriate letter next to your answer. Each correct response is worth one point.*

Matching Questions

The matching test item in its simplest form consists of two lists of words and phrases that are to be matched. The first list is known as a list of **premises**, the second, as a list of **responses**. Matching items are often presented as a list of words to be matched with a list of definitions. Items within each list should be similar (e.g., possible diagnoses, medications, etc.).

In a **perfect matching** exercise, the number of premises and the number of responses is the same, and each response can be used only once. In an **imperfect matching** exercise, the responses may be used repeatedly or not at all. Imperfect matching exercises can be constructed by:

- making the list of responses longer than the list of premises (i.e., adding a few distractors); or
- including some responses that may be used more than once if the lists are of equal length.

Imperfect matching test items (ones with a few distractors) are more objective than perfect matching exercises. The perfect matching test item allows the student to determine the last response by a process of elimination because there are as many responses as premises, and each response can be used only once. It is therefore recommended that teachers use imperfect rather than perfect matching exercises as much as possible. Below are some tips for writing good matching questions:

- Focus the matching question on one subject.
- Keep the list of statements brief (no more than 10 to 15 statements). If the list is long, students may spend considerable time on one matching item even if they have a rather clear idea of what the response should be. Keep the matching exercise on one page; it is confusing when it runs onto the next page.
- Be very clear about the basis for the exercise. For example, in the example below, the basis is to match a contraceptive method with its effective life.
- Arrange the premises and responses in a logical order. If the premises or responses are names or titles, they may be arranged alphabetically. If they are numbers, they may be arranged sequentially. Any logical order can be used.

Write clear directions that indicate the basis on which the lists are to be matched and how the student is to respond. Can answers be used more than once? Are the answers to be indicated on the test or

on another sheet? Are there distractors? What is the point value of each item?

Example:

Directions*: The two columns below are lists of contraceptive methods and their effective life. Read the contraceptive method in the left column and select its effective life from the right column. Write the corresponding letter of the response in the blank provided in the left column. Note that each answer may be used only once and that there is one extra response. Two points will be earned for each correct response.*

Contraceptive Method	***Effective Life***
__1. Copper T 380A	*A. 3 months*
__2. Norplant implants	*B. 3 years*
__3. DMPA	*C. 5 years*
__4. Vasectomy	*D. 10 years*
	E. Permanent

Example:

Directions*: The two columns below are lists of weights and dosages of amoxicillin needed for the child with the pneumonia classification. Read the weights in the left column and select the appropriate dosage from the right column. Write the corresponding letter of the response in the blank provided in the left column. One point will be earned for each correct response.*

Child's Weight	***Dosage***
__1. 4–5 kg	*A. 7.5 ml*
__2. 5–10 kg	*B. 5 ml*
__3. 10–14 kg	*C. 2.5 ml*
__4. 14–20 kg	*D. 10 ml*

Short-Answer Questions

Short-answer questions require the student to provide one or several responses to a question or situation. They are not as easy to complete or score as MCQ or true-false questions, but they require the student to spontaneously respond rather than choose from a selection of responses. This type of question assesses higher-level thinking, but is less reliable because a teacher must interpret the responses.

Following are some tips for writing short-answer questions:

- **Make the questions clear and easy to understand.** Write precise questions so that students know exactly what response is expected.

- **Prepare a structured marking sheet.** For each question, list all of the acceptable responses, and be prepared to consider other answers that may be equally acceptable. Make the marking sheet easy to understand so that other teachers can use it if necessary.

- **Write some questions that involve possible multiple responses.** This demands more from students and can address broader content.

Example:

Family planning methods most appropriate for adolescents are:

*a.*_____, *b.*_____, *c.*_____

Write clear directions for short-answer questions. Clearly state if a point will be given for each correct response or if the student must have all the correct responses to obtain one point.

ADMINISTER AND SCORE KNOWLEDGE ASSESSMENTS

Administer a Knowledge Assessment

In giving directions before the examination, focus on how the students should complete the test rather than on the purpose of the test. The students need a complete understanding of the ground rules under which they will take the test. This means that they must be aware of the **time allowed**, the manner in which they are to **select and record answers**, and the **scoring system** to be used. Try to create a relaxed atmosphere from the beginning.

Give students enough time to respond. Timing often has been cited as the greatest cause of error in the administration of tests. Designers and teachers should establish time limits in accordance with the purpose of the test. Untimed tests are recommended, but if time limits are imposed, base them on a trial run of the instrument. As a general guide, allow students about twice the time it takes you to read through and complete the test.

The most neglected of all test administration issues has been the physical condition of the testing area. General factors such as noise, light, temperature, and ventilation have been proven to adversely affect the test performances of many students. Noise should be minimized in the testing situation to ensure that students can hear the oral instructions. Also, noise control during the test is important to minimize distracting the students. Be sure that you remain in the room during the examination and move around the room as needed to monitor the students and respond to questions.

The room should have adequate lighting and ventilation and comfortable temperature. These factors often affect students' motivation, and can be distracting if not maintained. Students should be seated at desks or tables that provide adequate space for completing the assessment.

Score a Knowledge Assessment

With written objective examinations, students can mark the answers directly onto the test or onto a separate answer sheet. When there are many test items, it may be easiest for students to write their answers on a separate answer sheet.

One of the advantages of written objective examinations is that they are very easy for teachers to score. Even when an answer key is used, there are several ways to score them. The easiest and most common way is to assign an equal number of points to each question. Another way to score a test is to assign certain items more points. For example, true-false questions may be assigned only one point and multiple-choice questions may be assigned two or three points.

For short-answer questions, essay questions, and written assignments, an answer key is also recommended (see "Select Methods for Assessing Students' Knowledge"). As the scorer identifies the points listed on the answer key in the students' written answers, the scorer should underline them in contrasting colors. The students receives one or more points each time one of the items listed in the answer key appears. This avoids the tendency to give higher scores to students with good penmanship, or who write long, well-phrased answers that do not contain the points in the answer key.

Because the purpose of formative assessment is to provide feedback to students to help them improve their performance, it is not always necessary to assign a numerical score to the assessment. The results of formative assessments may be reported to students on a scale such as poor, fair, good, or excellent. The crucial aspect of formative assessment is to explain to the students why they received the rating, and how they can improve the results when reassessed on the same topic.

Even when using an answer key, the scorer can often be influenced both positively and negatively by the mental state or attitudes that she or he brings to the scoring process. For most situations, what matters is that the scorer's mental state and attitude are consistent across all test papers as they are scored. Because a person's mental state changes from day to day, if more than 1 day is needed to score examinations, it is a good idea to score the first item(s) on the test for *all* students and then proceed to the second item(s) and so on throughout the examination.

For all types of knowledge assessments, it is best to grade the examination in the blind. That is, to score each test without knowing whose test it is. This will avoid any personal biases in the scoring process. In addition, you or the teaching institution will have to decide what percentage of correct answers is required for passing the examination, especially if you are using a criterion-referenced assessment (see *Plan for Teaching*).

Finally, if you are using a self-assessment method, students can score their own tests.

USE ASSESSMENT RESULTS TO IMPROVE PERFORMANCE

Knowledge is assessed to determine whether students are meeting the learning objectives and have acquired the required information base to become competent healthcare providers. These assessments are also used to improve students' performance. Formative knowledge assessments such as written exercises, case studies, and quizzes help students decide what content areas they need to spend more time studying to prepare for summative assessments. The results of summative assessments determine if students are meeting the learning objectives.

Following are some ways to help students learn from their knowledge assessments:

- Instruct students to review the material related to the questions they missed.

- Give students an opportunity to ask you questions about any test items on which they scored poorly or that they did not understand.

- If many students had trouble with the same questions, either the teaching methods or materials did not adequately address that learning objective, or the question needs to be rewritten. Do not be afraid to revise problematic test questions or adapt the teaching methods used to better address the content.

In both knowledge and skills, make every effort to help your students achieve competency in every area. If you determine that each student must achieve at least a certain percentage in order to pass, consider ways you can help students achieve this goal. Consider allowing students to retake examinations or providing them with additional exercises or test questions in order to meet this goal.

SUMMARY

The assessment methods and tools described in this module may be used for both formative and summative assessments. Whether creating questions for use in a large examination, creating a completely new test for your session or course, or adapting an existing test, make sure that the assessment measures the objectives in a valid, reliable, and feasible way. Use results from methods such as quizzes, written exercises, and objective written examinations to help students identify areas in which they need to improve.

MODULE TEN JOB AID: CHECKLIST TO PREPARE, ADMINISTER, AND SCORE SUMMATIVE KNOWLEDGE ASSESSMENTS

Use this checklist as a reminder of how to prepare, administer, and score knowledge assessments.

CHECKLIST TO PREPARE, ADMINISTER, AND SCORE SUMMATIVE KNOWLEDGE ASSESSMENTS	
PREPARE KNOWLEDGE ASSESSMENTS	**Check (√) when completed**
1. Base the knowledge assessment on the learning objectives.	
2. Apply the general guidelines presented in the module.	
3. Develop true-false questions according to the guidelines presented in this module.	
4. Develop multiple-choice questions according to the guidelines presented in this module.	
5. Develop matching questions according to the guidelines presented in this module.	
6. Develop short-answer questions according to the guidelines presented in this module.	
7. Determine how the test items will be arranged.	
8. Review the assembled test.	
9. Ensure that the important or stressed objectives are adequately reflected in the test.	
10. Make copies for the students.	
ADMINISTER KNOWLEDGE ASSESSMENTS	**Check (√) when completed**
1. Ensure that the room and physical environment where the examination is being given are appropriate.	
2. Provide clear oral directions to the students, including the time allowed, how and where to record their answers, and how and when the examination will be scored.	
3. Remain in the room during the examination and move around the room as needed.	

CHECKLIST TO PREPARE, ADMINISTER, AND SCORE SUMMATIVE KNOWLEDGE ASSESSMENTS	
SCORE KNOWLEDGE ASSESSMENTS	**Check (√) when completed**
1. Use an answer key.	
2. Decide what percentage of correct answers is needed for a passing score.	
3. Maintain a consistent mental state when scoring assessments.	
4. Grade all assessments in the blind (i.e., without being aware whose test or paper it is).	

MODULE ELEVEN

PREPARE AND USE SKILLS ASSESSMENTS

INTRODUCTION

Students must build and demonstrate competence in essential skills in order to deliver high-quality healthcare services after graduation. The module *Facilitate the Development of Healthcare Delivery Skills* outlines a three-step process for skills development. The three steps are: (1) introduce and demonstrate a skill; (2) observe students as they practice the skill and give feedback to help them improve their performance; and (3) assess students for competency in the skill. This module focuses on step three of the skills development process—assessing the ability of students to perform essential skills.

As in the assessment of knowledge, clear learning objectives are critical for the valid assessment of skills. *Develop Objectives for Learning* describes how to write feasible and measurable skill objectives. Common assessment terms and methods are defined in *Plan for Teaching.* This module describes how to prepare and use tools for both the formative and summative assessment of skills.

To help students improve their performance, you will use formative assessments of skills, which correspond to step two of the skills development process—observe students while they are practicing and give feedback. This module will describe a few alternative methods, in addition to direct observation, for the formative assessment of skills.

To verify that students are competent in the skills at the end of the session or course, you will use summative assessments. When assessing skills, you should use competency-based assessment tools, such as checklists, to help ensure that students are assessed in an objective and standardized manner. Students, as well as teachers and tutors, can use these tools for self-assessments and peer assessments. It is important to note that the methods and tools described in this module can also be used to assess attitudes.

Main Objective

After completing this module, you will be able to prepare and use skills assessments.

Supporting Objectives

To meet this objective, you will:

- Select methods for assessing the skills of students
- Prepare skills assessments

- Develop structured practical examinations
- Administer and score skills assessments
- Use results to improve performance

SELECT METHODS FOR ASSESSING STUDENTS' SKILLS

Plan for Teaching describes how to choose valid, reliable, and feasible methods for assessing the skills of students. For a valid assessment, a combination of methods and techniques should be used. Similar methods can be used for both the formative and summative assessment of skills. For example, tutors may formatively assess students by observing them during clinical practice and giving feedback that will help students prepare for an observed summative examination on the same topic. In addition to being assessed by teachers, tutors, and clinical instructors, students' skills can also be measured through self-assessment and peer assessment. It is important to note that the methods and tools described in this module also can be used to assess demonstrated attitudes. For example, you can assess whether students demonstrate respect for patients by checking for behaviors such as greeting patients with a smile and maintaining eye contact with patients.

The following methods can be used for the formative and summative assessment of skills:

- Direct observation of students as they perform skills
- Structured feedback reports on students' performance
- Logbooks, learning journals, and care plans

Direct Observation

Direct observation is the most valid way to assess students' skills. It can be used for both formative and summative assessments. In many teaching situations, however, it is difficult to observe each individual student, particularly when time is limited and the ratio of students to teachers is high. Nevertheless, several techniques can be used to overcome the obstacles to direct observation. For example, assessments can be "staggered" by dividing students into small groups and sending them for practice and assessment at different times throughout the session or course. For formative assessment, you can ask tutors, clinical staff members, or more senior students to help observe your students and give feedback on their performance. For summative assessment, you can ask other teachers or external examiners to observe and score students' competency in key skills. The more persons involved with assessing skills, the more important it is to use a standardized

checklist to reduce variations in scoring among different observers and increase the reliability of the assessment. Questioning students during observation can further assess their ability to integrate knowledge, skills, and attitudes. Oral questioning or examinations are best used during direct observation, rather than as an isolated assessment method. Direct observation can be done in the clinical setting while students interact with patients—this is best for formative assessment. Summative assessment will be more valid and reliable if standardized simulated cases are used (e.g., long cases, short cases), which are typical in structured practical examinations (see "Develop Structured Practical Examinations" later in this module).

Structured Feedback Reports

A structured feedback report is a standardized way to give feedback to students on their performance during a specific period of time. When you use this method you are assessing sustained performance rather than just taking "a snapshot" as you would with an examination. Teachers, clinical instructors, or staff working with or alongside students can complete these feedback reports. The reports can cover areas such as overall performance, demonstrated attitudes, and essential healthcare delivery skills (see *Facilitate the Development of Healthcare Delivery Skills*). They are particularly useful for assessing characteristics such as personal attributes, attitudes, and professional values, which are difficult to test by other methods. Most feedback reports include objective rating scales to allow the assessor to quickly provide a formative assessment of the student's performance.

Standardized feedback reports are useful because they:

- Are easy, efficient, and consistent
- Provide a formal structure for assessment, particularly formative assessment
- Reinforce essential skills
- Ensure that each student receives feedback

Teachers should discuss the reports with the students at various stages throughout the course so that they can give them useful feedback. A sample student feedback report is included as **Sample 11-1** at the end of this module. This sample report is general enough to be used as is, but may also be adapted for different courses. Another type of student feedback report is shown in **Sample 11-2** at the end of this module. This general feedback form about students' overall performance is completed by an assessor at the end of a clinical practice rotation in one area.

Logbooks, Learning Journals, and Care Plans

The logbook (also called a casebook) contains a list of skills or tasks that students should be able to perform. These tasks reflect the learning objectives for the course. The students are responsible for learning how to do each of the tasks, and when they believe they are ready, they can ask a teacher, tutor, or clinical instructor to assess their performance. During the session or course, students must perform all of the tasks to a satisfactory standard. If the teacher thinks that a student's performance is not good enough, the teacher explains the areas for improvement and the student can try again later.

A learning journal is used to record learning experiences, especially those in which the student has minimal or no supervision, such as home visits, community-based experiences, or rotations to distant clinic sites. Elements usually included are a brief description of the problem encountered, care or management of the problem, and education received. Learning journals vary from school to school.

A care plan is used to document the patient's problems, care required, and expected outcomes. Nurses often use it as a guide when providing patient care and documenting outcomes. Students are often required to create care plans to demonstrate their understanding of and ability to explain management required for a specific problem. The teacher may use care plans to assess the students' ability to select appropriate interventions and expected outcomes for the different problems presented.

PREPARE SKILLS ASSESSMENTS

Direct observation is the most valid method for assessing skills. However, because reliability of direct observation may be low or inconsistent due to observer bias, an assessor needs tools to standardize the assessment results. Fortunately, tools are available, or can be developed, to help make direct observation a more reliable method of assessment. It is essential that the students have access to and be familiar with the instruments that will be used to assess their skills.

Checklists

A checklist requires minimal judgment on the part of the assessor. It simply indicates whether a specific characteristic is present or absent, or if a particular action was taken or not taken. Checklists are best used in a simulated situation where parameters beyond the skill being assessed can be controlled. Checklists are also very useful for giving feedback to students.

The checklist is a list of steps needed to perform a skill correctly, given in the correct sequence. The assessor must indicate if each

step was performed or not performed and may also have to indicate the quality of the performance. Each step must be clearly and quickly defined to make the tool easy to use. Well-constructed checklists should contain only sufficient detail to help the assessor evaluate and record the student's performance. Unlike the very detailed competency-based learning tools that are described in *Facilitate the Development of Healthcare Delivery Skills*, checklists contain only the key steps or tasks of a skill or procedure. The checklist is typically derived from a competency-based learning tool, but should contain only enough detail to permit the user (e.g., teacher, clinical instructor, tutor, clinic staff member, or senior student) to evaluate and record the overall performance of the skill. If a checklist is too detailed, it can distract from its primary purpose, which is to help the assessor observe the overall performance of the student objectively.

Steps in Designing a Checklist

1. **Identify the steps** or tasks needed to perform the skill:

   - adapt an existing competency-based learning tool (see *Facilitate the Development of Healthcare Delivery Skills*); or

   - conduct a task analysis (described in *Facilitate the Development of Healthcare Delivery Skills*), which includes breaking down a skill into its essential tasks or steps.

2. Place the steps or tasks in the **correct sequence**.

3. **Identify the standards or minimum level of performance** for each of the key steps or tasks to be measured. There are several options for rating systems to use within a checklist:

   - **Yes/No rating system.** This may also be a pass/fail, satisfactory/unsatisfactory, or performed/not performed system, which is often used with checklists. This is the simplest method for measurement and does not provide any information on the quality of the performance other than the assumption that only steps that are performed satisfactorily will be marked.

   - **Multi-level rating system.** This type of system addresses the quality of the performance, and is a helpful tool for providing feedback. The levels could be something like **Good, Fair**, or **Poor**. Or the student's performance of each step may be rated as follows:

     0 **Not performed**: Step or task missed completely (not performed or performed incorrectly)

1 **Needs Improvement**: Step or task not performed correctly or out of sequence

2 **Competently Performed**: Step or task performed correctly in proper sequence

4. **Include the key elements of a checklist.** A title, space for the names of the student and assessor, associated course information, instructions for completion, and space for assessor's signature should all be included.

5. **Field-test the checklist** to be certain that all steps or tasks are listed. Field-testing also will determine whether the rating scale meets its intended purpose.

Samples 11-3, 11-4, and **11-5** at the end of this module show sample checklists for different skills and with different types of rating scales.

Feedback Reports

When developing or adapting a structured feedback report, you should:

- Consider what major objectives or skill areas should be assessed.
- Based on these objectives, describe the major skills or areas for assessment (listed in the column on the far left of **Samples 11-1 and 11-2**).
- Develop a descriptive rating scale similar to the one on the sample student feedback report. Include options for what is considered very poor performance through excellent performance. Discuss the rating scale with others to ensure it is fair.
- If you are working with clinical instructors, tell them when the report should be completed and whether they should review it with the student or submit it directly to you.

Rating Scales

Rating scales can be incorporated into checklists or feedback reports, or used independently. Because these scales are subjective, they are more effective for assessing broad skills or demonstrated attitudes, and for giving formative feedback, rather than for determining a grade. They can describe a quality or frequency of judgment. The quality or frequency scale can be associated with a number and descriptive text as shown in the examples below. Note that the following examples show scales of limited range (i.e., four or five categories or characteristics), which are recommended. Longer scales can become too complicated to use.

Example:

The student performs a physical exam efficiently and correctly.			
Always	Frequently	Sometimes	Never
3	2	1	0

Example:

Physical exam				
Inadequate	Poor	Average	Good	Excellent
0	1	2	3	4

The frequency rating scale is very limited because it documents a small sample and omits the unobserved events. The quality rating scale is open to individual interpretation and therefore can result in low reliability of the assessment results. You can overcome this lack of objectivity by giving explicit criteria to each quality characteristic as shown in the example below.

Example:

Perform a physical exam				
Major mistakes	Inconsis-tent	Complete but slow	Thorough and efficient	Comprehensive, examines related areas
0	1	2	3	4

DEVELOP STRUCTURED PRACTICAL EXAMINATIONS

You can use a structured practical examination to assess a wide range of knowledge, skills, and attitudes such as history taking, physical examination, data interpretation, communication, decision-making, and demonstrated attitudes toward patients. This examination is not truly an assessment method but rather an administrative structure into which a variety of assessment methods can be incorporated. Typically students rotate through a series of stations where they answer questions (orally or in writing), or perform tasks while being observed. Students may demonstrate a skill, interpret diagnostic materials, or respond to short questions or case studies. This type of examination is also known as a multiple station assessment test (MSAT). To improve reliability, scoring sheets are developed for the stations requiring written responses, and checklists are developed for the observed stations. The Objective Structured Clinical Examination (OSCE) is one of the most well known forms of the structured practical examination.[2]

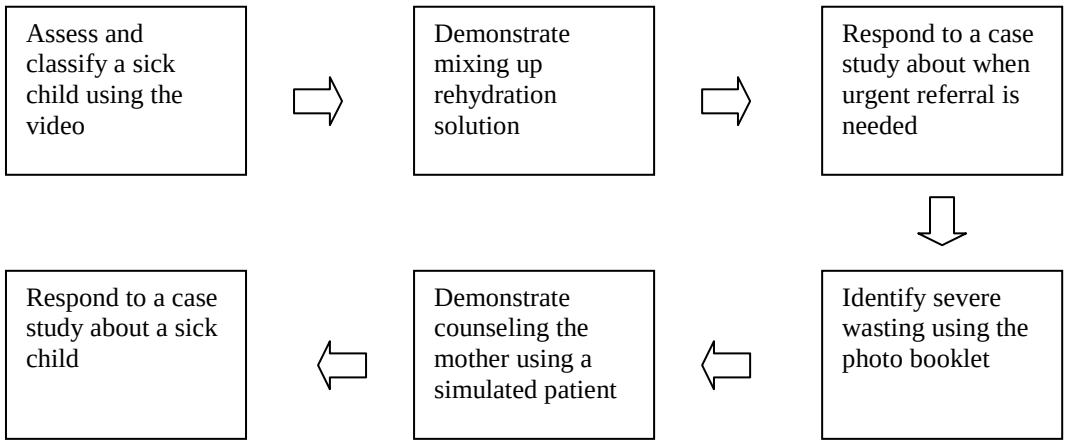
[2] Harden RM and FA Gleeson. 1979. Assessment of medical competence using a structured clinical examination. *Medical Education* 13: 44–54.

The structured practical examination can range from inexpensive and simple to expensive and high-tech. Following are some of the basic components of a structured practical exam:

- All students rotate through multiple stations and are tested on the same knowledge, skills, and attitudes.
- There is a limit to the amount of time each student can remain at a station.
- There is an assessor at each station that requires observation. Stations using written exercises or case studies do not require an assessor, although you may want to assign a monitor to the station if an appropriate person is available.
- All students are assessed according to the same standards.

Following is an example of what a simple structured practical exam for summative assessment of Integrated Management of Childhood Illness (IMCI) might look like:

Sample 11-1. Sample IMCI Multiple Station Objective Test



Often a structured practical exam has 9 to 15 stations, depending on the time and resources available. The figure above describes only a few of the stations that may be created. Each station requires accompanying assessment tools such as answer keys and checklists.

Planning for a Structured Practical Examination

Planning and preparing for a structured practical examination are the most time-consuming aspects of this approach to assessment. The stations must be developed along with the associated assessment tools. Necessary materials have to be supplied and multiple assessors are required. Once the stations and assessment tools have been prepared, however, conducting the examination

becomes much less labor- intensive.

The steps to prepare for a structured practical examination are:

- **Choose which learning objectives will be tested.** As in every other assessment method, begin with the knowledge, skills, and attitudes described in the learning objectives for the course. Which ones are important enough to test using this approach?

- **Decide on a problem, issue, or activity that addresses each learning objective.** Decide if this problem or issue will assess knowledge, skills, or demonstrated attitudes.

- **Map out a plan for the stations.** Use a format similar to the one in **Figure 11-1** to describe how the stations will be structured. This plan provides an overall description of the examination and ensures that all of the content is being addressed adequately. Plan the timing of the tasks so that students spend the same amount of time at each station and rotate smoothly from station to station. Or, if necessary, you can have one group of students being assessed at one "long" station while other groups rotate through two "shorter" stations.

- **Plan the details for each station**:
  - Write the task to be completed or the scenario. Define clearly how the students should complete the task, how much time they have to complete it, and what area the task will measure.
  - Develop instructions. Clearly describe to the students how to complete the task, the time allowed, the scoring plan for the station, and any other necessary details.
  - Develop assessment tools. Develop a checklist if a skill is being assessed, or an answer key if it is a written exercise or a case study.
  - List the resources needed. Describe what will be needed for each station so that preparations for the assessment can be made ahead of time. Stations that use simulated patients (such as other students or volunteers) or role plays will need scripts that provide simulated patients with clear guidance on their intended responses. This helps ensure students are assessed in a standardized way. List any equipment, instruments, or supplies that might be needed.

ADMINISTER AND SCORE SKILLS ASSESSMENTS

Conducting Direct Observations

Assessing skills is key to the process of facilitating skills development. Remember the job aid at the end of *Facilitate the Development of Healthcare Delivery Skills*? When using direct observation, whether for formative or summative assessment, apply some of the following tips. Below is a summary of Step 3, Assessment, and how to use an assessment tool to assess performance.

***Before the Skills Assessment*:**

- **Discuss previous practice sessions with the student.** Ask if the student has any questions about the skill and is ready to be assessed.

- **Review the assessment tool.** Briefly review the checklist, recording form, or rating scale with the student. Whether the student is being assessed with a model, a simulated patient, or an actual patient, provide an opportunity for reviewing the essential steps.

***During the Skills Assessment*:**

- **Observe and assess the student's performance**:
  - Stand to the side or somewhere else where you can see, without intruding and let the student perform the skill.
  - Do not interfere or interrupt the student unless the student is about to make a mistake that may endanger or hurt the patient.
  - Provide only essential feedback while the student is performing the skill.

***After the Skills Assessment*:**

- **Review the skill with the student.** Ask the student to share feelings about what she or he did well during the session and what could be improved.

- **Provide positive feedback and offer suggestions for improvement.** Tell the student what she or he did well and then offer specific tips or instructions on how to improve performance.

- **Determine if the student is competent or needs practice.** Based on the pre-determined criteria, decide if the student is competent in performing the skill or needs additional practice.

Scoring Direct Observations

Direct observations are appropriate for criterion-referenced assessment, ensuring that a standard is reached rather than assigning a grade or mark. It is difficult to determine how to score a direct observation, even with the use of a checklist or rating scale. If the skills assessment must be scored, a point value can be assigned to each step or each level on a rating scale. Most teaching institutions allow individual teachers to determine whether the student is competent or not; others may have rules that specify how many steps may be missed within a task.

Facilitating a Structured Practical Examination

Facilitating a structured practical examination requires much less effort than planning for the examination and preparing the stations and assessment tools. There are several considerations in facilitating this type of examination:

- **Location.** A skills development lab is the ideal place for a structured practical exam. If one is not available, an empty ward is another option. You need ample space to set up the different stations.

- **Logistics.** Arrange for adequate numbers of assessors and simulated patients. Clinical instructors, if available, may also be used as assessors. Because many students will be rotating through the stations, you may wish to set up two to run simultaneously so that you can assess many students at once. Otherwise, in order to avoid the sharing of answers, all students should wait together in a room before entering the exam. Students can use this waiting time to take a written examination or to prepare themselves for the practical exam.

- **Management.** One person should be responsible for coordinating student flow, answering questions, and providing overall supervision over the process. Decide which stations will require an assessor and assign appropriate individuals. Provide the students with information on the examination beforehand to help decrease their anxiety level.

A structured practical examination is a valid, reliable, and feasible approach to assessment that integrates knowledge, skills, and attitudes through a series of activities. The easiest way to prepare for this approach to assessment is to develop a "bank" of station possibilities. Creating a bank of possible station assignments allows teachers to pick and choose stations for different exams, and will make creating other examinations easier in the future.

Scoring a Structured Practical Examination

When the stations have been prepared, plan a scoring scheme. First, decide if each station will be pass/fail or if points will be assigned. If each station is pass/fail, decide how many fails are allowed, if any, and if retesting is an option. If points are to be assigned, decide how many points will be allotted for each part of each station. For example, a checklist may have a point assigned to each task, a written exercise may have one point or several points assigned to each answer, and a role play about counseling may have points assigned for each major content area to be covered and each major communication skill to be demonstrated. After each station has scores assigned, add them up to provide the overall scoring possibilities for the exam.

USE RESULTS TO IMPROVE PERFORMANCE

Skills are assessed to determine whether students are competent in the core learning objectives needed to become healthcare providers. Assessments also aim to improve the performance of students. Formative knowledge assessments such as structured feedback reports help students decide which skills they need to practice to prepare for summative assessments. The results of summative assessments determine if students are competent in the learning objectives.

To help students learn from the assessment of their skills:

- Give students an opportunity to ask you questions about steps they did not understand or they performed incorrectly.
- Instruct students to practice the steps that they performed incorrectly.
- If many students had trouble with the same tasks, either the teaching methods or materials did not adequately cover that learning objective, or the task needs to be redefined. Do not be afraid to revise problematic learning objectives, or adapt teaching methods and materials to better address the content.

When assessing both knowledge and skills, make every effort to help your students achieve competency for each core learning objective. If you determine that each student must achieve at least a certain percentage to pass, consider ways you can help students to achieve this goal. Consider allowing students to retake exams or providing them with additional exercises or test questions to prepare for formative skills assessments.

SUMMARY

Choosing valid, reliable, and feasible methods for assessing the skills of students requires careful thought, planning, and time. Direct observation is the most valid method for assessing skills, but can be influenced by the judgment of the observer. You can improve this method by using standardized tools such as checklists to guide assessment. Structured practical examinations require time for planning and preparing valid stations, but provide a highly structured and reliable method for assessing knowledge, skills, and attitudes that can be used from year to year. Assessing students' skills is one of the keys to improving students' performance.

Sample 11-2. Sample Feedback Report

Student's Name:_____ Student's Class/Level:_____

Name of Rotation: _____ Dates of Rotation:_____

Please circle the description that best represents the student's performance in each area.

Clinical knowledge	Lacking	Needs improvement	Demonstrates basic knowledge	Applies knowledge to cases	Applies knowledge consistently
History taking	Inaccurate	Inconsistent, misses major points	Complete and accurate	Complete, quickly asks for important information	Comprehensive, looks at related findings
Physical exam	Major mistakes	Inconsistent	Complete but slow	Thorough and efficient	Comprehensive, examines related areas
Data presentation (written and verbal)	Confusing and vague	Misses important data	Identifies problems and prioritizes them	Understands problem and demonstrates integration of data	Integrates data and includes additional data
Care plan	Poorly created and confusing	Appropriate but incomplete	Implements clinical instructor's instructions, partial understanding	Care plan is complete and clear	Care plan is comprehensive and is implemented efficiently and adapted appropriately
Patient education and counseling	Doesn't provide	Minimal or confusing	Provides basic education, minimal counseling	Provides education and counseling, checks patient understanding	Involves family in education and counseling, documents education provided
Interpersonal skills	Confrontational or judgmental	Polite	Communicates clearly, listens well	Communicates caring and concern, puts others at ease	Excellent, handles difficult situations calmly
Professionalism	Uncooperative	Inconsistent	Cooperative and responsible, not late or untidy	Takes initiative to be involved and presents self well	Demonstrates leadership, earns respect
Attitude toward learning	Negative	Disinterested	Interested	Asks good questions, demonstrates extra effort	Learns independently, contributes to improving learning experience for others

What are this student's strengths?

Were there any particular areas in which the student could improve? Please explain.

Other comments (feel free to use the back):

Did you review this assessment with the student? YES NO

Your name:_____ Signature:_____ Date:_____

Sample 11-3. Sample Feedback Report for General Clinical Practice

Dates:_____ **Clinical Site:**_____

Student: _____ **School:**_____

Staff: _____ **Clinical Instructor:** _____

Please rate this student in the following areas using the rating scale below. Add any additional comments you feel will contribute to the assessment of this student.

Please circle the description that best represents the student's performance in each area.

Attendance	1. Zero attendance	2. Sporadic attendance	3. Occasional unexplained absence	4. Attends all sessions	- Not observed or applicable
Relationship with patients	1. Causes concern by being discourteous and/or not empathetic with patients.	1. Fair rapport. Occasionally discourteous if patient is hostile.	2. Generally good rapport with patients but may be erratic.	3. Widely recognized as being courteous and empathetic.	- Not observed or applicable
Interest and motivation	1. Poor self-motivation. Has to be prompted to participate in activities. Some-times refuses to participate.	2. Frequently needs prompting to participate. Demonstrates variable level of interest.	3. Always participates. Asks spontaneous questions.	4. Highly self-motivated. Mature approach to activities. Makes specific requests.	- Not observed or applicable
Reliability	1. Poor reliability. Work not well done or incomplete. Often absent/late for duties.	2. Occasionally forgetful.	2. Usually reliable. Work always done. Always present and prompt.	3. Always reliable. Takes initiative for routine matters.	- Not observed or applicable
Clinical skills	1. Unable to demonstrate basic procedures appropriate for this stage of study.	2. Minimal level of basic skill. Needs work on procedures. Little progress.	3. Satisfactory basic skill appropriate to stage of study. Steady improvement.	4. Demonstrate s competency in basic skills. Performs in advance of stage of study.	- Not observed or applicable
Dress code/ appearance	1. Appearance may cause offence to patients.	2. Dress/ appearance may be inappropriate, unkempt or immodest.	3. Generally conforms to standard but may be untidy.	4. Appearance appropriate. Conforms with professional image.	- Not observed or applicable

Sample 11-4. Checklist for Assessing Students' Performance of Integrated Management of Childhood Illness

IMCI *Observation Checklist for Child Aged 2 Months up to 5 Years*

Student: _____ Examiner: _____ Date: _____Child's Initials: _____ Age: ____ Weight: ___

1. ASSESS: Assessment tasks	***Score***	**2. CLASSIFY**	***Score***	***Notes***
CHECKS all danger signs Not able to drink or breastfeed Vomits everything Convulsions *during this illness* Lethargic or unconscious		***Danger signs:*** Present Absent		
Cough or difficult breathing ? YES NO Asks for how long Counts breathing rate Looks for chest indrawing Listens for stridor		Severe Pneumonia Pneumonia No pneumonia		
Diarrhea? YES NO Asks for how long and if blood in stool Looks at child's general condition Looks for sunken eyes Observes drinking/breastfeeding Pinches skin of abdomen		Severe dehydration Some dehydration No dehydration Severe persistent diarrhea Persistent diarrhea Dysentery		
Fever? YES NO Asks for how long; If more than 7 days, if present every day; Looks for stiff neck Looks for runny nose Looks for signs of measles ***Measles in the last 3 months?*** YES NO Looks for mouth ulcers Looks for pus draining from eye Looks for clouding of the cornea		Very severe febrile disease Malaria Fever—malaria unlikely Severe complicated measles M. with eye or mouth complications Measles		
Ear problem? YES NO Asks about pain, discharge, for how long Looks for pus draining from the ear Feels for tender swelling behind the ear		Mastoiditis Acute ear infection Chronic ear infection No ear infection		
CHECKS for malnutrition and anemia Looks for visible severe wasting Looks for palmar pallor Looks for edema of both feet Determines weight for age		Severe malnutrition/severe anemia Anemia / very low weight No anemia / not very low weight		
CHECKS immunization status		Needs immunization today Needs immunization later Immunization status is complete		

3. IDENTIFY ACTIONS and PREPARE		**Score**	**Notes**
Urgent referral? **YES** **NO**	Explains the need for referral to the child's caretaker Writes a referral note Organizes referral		
	Identifies and records the treatments needed Determines and records if/when to return for a followup visit Identify the need for non-urgent referral If the child has come for followup, identifies actions according to IMCI		

4. TREAT THE CHILD		**Score**	**Notes**
Pre-referral treatment/s IM antibiotics/anti-malaria Treat low blood sugar Fluids for severe rehydration (IV or oral sips)	**Other treatments** Antibiotic tablets/syrup Rehydration Plan A, B, or C Antimalarial tablets/syrup Paracetamol/aspirin Vitamin A Iron Tetracycline eye ointment Gentian violet Mebendazole		

5. COUNSEL THE MOTHER		**Score**	**Notes**
Key counseling tasks	Gives mother feeding counseling relevant to the child's age Explains when to return immediately Explains when to return for followup and for immunization Teaches mother to give oral drugs/to treat local infection Counsels her about her own health		
Communication skills	Uses good communication skills (ask and listen, praise, advise) Checks her understanding, asking open-ended questions		

Synthesis (student's strength and weaknesses) **TOTAL SCORE**

Sample 11-5. Checklist for Assessing Teaching about Drugs

Place an "**X**" in the box if the step/task is performed **satisfactorily.** Leave the box empty if the step/task is **not** performed **satisfactorily**, or is not performed.

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

TEACH THE CARETAKER TO GIVE ORAL DRUGS AT HOME			
STEP/TASK	**CASES OBSERVED**		
	1	**2**	**3**
1. **Determine the appropriate drugs and dosage for the child's age or weight.** Use the *TREAT THE CHILD* chart.			
2. **Tell the mother the reason for giving the drug to the child, including**: why you are giving the oral drug to her child, and what problem it is treating.			
3. **Demonstrate how to measure a dose.**			
4. **Watch the mother practice measuring a dose by herself.**			
5. **Ask the mother to give the first dose to her child.**			
6. **Explain carefully how to give the drug, then label and package the drug.** Tell the mother how much, how many times per day to give the dose, when to give it (such as early morning, lunch, dinner, before going to bed), and for how many days. Write the information on a drug label. Ask checking questions to make sure she understands how to treat her child.			
7. **If more than one drug will be given, collect, count, and package each drug separately.** Explain the purpose for each drug to the mother.			
8. **Explain that all the oral drug tablets or syrups must be used to finish the course of treatment, even if the child gets better.**			
9. **Check the mother's understanding before she leaves the clinic.** Ask the mother **checking** questions.			

Sample 11-6. Checklist for DMPA Clinical Skills Using Auto-Disable Syringe

Place a check (√) in the case box if step/task is performed **satisfactorily**, and x **(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 or skill not performed by participant during evaluation by clinical trainer

CHECKLIST FOR DMPA CLINICAL SKILLS USING AUTO-DISABLE SYRINGE					
STEP/TASK	**CASES**				
GETTING READY					
1. Gather the necessary equipment.					
2. Check expiry date on DMPA single-dose vial.					
3. If arm or buttocks are visibly dirty, have patient thoroughly wash the area with soap and water.					
4. Position patient appropriately.					
PREPARING THE INJECTION SITE					
1. Wash hands thorough with soap and water and dry them with a clean dry towel.					
2. Clean skin with clean cotton and rectified spirit (alcohol), wiping with a circular motion outward from the injection site.					
3. Allow skin to dry before giving the injection.					
PREPARING THE INJECTION					
1. Shake vial of DMPA thoroughly before withdrawing the dose.					
2. Remove plastic or metal cover from vial without touching the rubber stopper.					
3. Appropriately open the sterile pack containing the auto-disable needle and syringe.					
4. Attach and tighten the needle to syringe by holding the hub (base) of the needle and the barrel of the syringe.					
5. Carefully remove the needle shield.					
6. Insert needle through the rubber stopper and guide needle tip into the lowest corner of the vial, always holding the vial in an upright but slightly inclined position.					
7. Draw up complete contents of the DMPA vial with needle tip completely immersed in the DMPA suspension all of the time.					

CHECKLIST FOR DMPA CLINICAL SKILLS USING AUTO-DISABLE SYRINGE					
STEP/TASK	**CASES**				
8. Remove the needle from the vial.					
9. Hold the syringe upright, and gently tap the barrel and expel any air bubbles by gently depressing the plunger.					
10. Carefully push the plunger to the dose mark 1.0 mL.					
GIVING THE INJECTION					
1. Insert the needle deep into the muscle (deltoid in arm or upper outer quadrant of gluteal area).					
2. Inject the full dose of DMPA slowly and remove the needle.					
POST-INJECTION TASK					
1. Apply pressure to injection site with cotton, but do not rub.					
2. Withdraw a small amount of 0.5% chlorine solution for decontaminating the needle.					
3. Discard assembled needle and syringe in a puncture-proof container without recapping or breaking or bending the needle.					
4. Wash hands thoroughly with soap and water and dry them on a clean towel.					
5. Dispose of puncture-proof container when full by burning or burying.					

MODULE ELEVEN JOB AID:
CHECKLIST TO PREPARE, ADMINISTER, AND SCORE SKILLS ASSESSMENTS

Use this checklist as a reminder of how to prepare, administer, and score skills assessments.

CHECKLIST TO PREPARE, ADMINISTER, AND SCORE SKILLS ASSESSMENTS	
PREPARE SKILLS ASSESSMENTS	Check (√) when completed
1. Review your course learning objectives, and select the ones that are skills-related.	
2. Review your syllabus and schedule. For each skills objective, are there opportunities for the students to practice the skill and receive feedback? If not, revise your schedule to allow time for this.	
3. Review the skills-related objectives again. Which ones are "core competency" objectives that will require summative assessment by direct observation or a structured practical examination? Select these.	
4. For each of the objectives selected, review how summative, or final, assessment will occur. If there is no summative assessment, revise your plan to include summative assessment of the core competency skills.	
5. For each summative skill assessment, ensure that there is a standardized means of assessment. Share this with clinical instructors or whoever will be observing the student.	
6. Ensure that the students are aware of when assessment will occur and what is expected of them.	
7. For formative assessments, decide if a numerical score or a rating scale (i.e., poor, fair, good, excellent) should be used.	
8. For summative assessments, determine if it will be "pass/fail" or if points will be assigned for each step.	
ADMINISTER SKILLS ASSESSMENTS	Check (√) when completed
1. Discuss previous practice sessions with the student.	
2. Review the assessment tool.	
3. Observe and assess the student's performance.	
4. Review the skill with the student and provide feedback.	
SCORE SKILLS ASSESSMENTS	Check (√) when completed
1. Use a checklist or other tool for assessment.	
2. Determine if the student will pass or fail, if using that scoring system.	
3. Assign a point for each step completed or task accomplished, if using that scoring system.	
4. Inform the student of the results.	
5. Provide opportunities for practice and re-assessment if possible.	

MODULE TWELVE

MONITOR AND REVISE TEACHING

INTRODUCTION

In education, monitoring is the ongoing process of collecting information about teaching so that the quality of students' learning can be improved. Monitoring ask the questions: "How well are we doing?" and "How can we do better?" Monitoring information can be collected about the content, context, process, and immediate outcomes of teaching, and should be gathered throughout a course to simplify the end-of-course review.

Course evaluations may be a part of the monitoring process. These evaluations of the course by students should not be confused with the broader evaluation of the outcome or effectiveness of an academic program. Broader evaluations of academic programs are designed to answer questions such as: "Did students achieve the competencies expected from the academic program?" and "Are students able to effectively apply their knowledge, skills, and attitudes to their work after graduation?" Spend time and resources on monitoring and evaluation only if you plan to use the information collected to improve teaching and students' learning. The overall aim of ongoing monitoring and occasional evaluation is to revise and improve teaching, particularly the learning objectives, methods, and materials used for teaching, learning, and student assessment.

Main Objective

After completing this module, you will be able to monitor and revise teaching.

Supporting Objectives

To meet this objective, you will:

- Describe how to monitor teaching
- List ways to contribute to broader evaluations
- Explain how to review and revise teaching

MONITOR TEACHING

Monitoring is a continual, cyclical process of teaching, collecting information about teaching, and reviewing the information to identify revisions needed. For monitoring to be effective, there must be an open organizational culture that encourages a commitment to students' learning, self-awareness, constructive

feedback, reflection, and professional development. In addition, monitoring requires a clear understanding of the course goals and objectives, and the responsibilities of different teachers and administrators. It also requires resources both to conduct monitoring activities (e.g., tools, time) and to implement necessary changes in teaching.

What Information to Collect

Monitoring information is usually collected about four aspects of teaching:

- **Content.** Does the content match the expected outcomes for the course? Does the content build on existing knowledge, attitudes, and abilities of students? Do students believe the new knowledge, skills, and attitudes are useful and applicable?

- **Context.** Are necessary facilities, resources, and equipment available for teaching? Is teaching consistent with what is being taught in other, related courses? Is there a clear link between the classroom and the practical or skills development components of the course? Do staff members at the clinical practice facility follow the same procedures as those taught in the course?

- **Process.** Was the course organized and taught in a logical way? Was the information presented clear and understandable? What methods and materials were used for teaching, learning, and student assessment? How did teachers and students react to them? How could the methods and materials be improved? Were students able to practice essential competencies and receive feedback on their performance? How much time was needed to complete the course? Was it enough? How many students enrolled for the course? How many students completed the course? How much time was spent in the classroom? How much time was spent in practical sessions? What was the ratio of clinical instructors or preceptors to students?

- **Immediate Outcomes.** What have students achieved as a result of the course? Were the learning objectives achieved? Do students demonstrate the expected levels of knowledge, skills, and attitudes?

In addition, you may choose to assess specific teaching, learning, or assessment methods or materials (e.g., Were your new case studies successful? How well did the new logbook work? Did the clinical instructors and clinic staff understand how to use the checklists for assessing students' skills?). These assessments are particularly useful if new methods or materials were introduced. You should ask two main questions when assessing a teaching method or material for learning or student assessment:

- **Do the methods and/or materials reflect learning objectives?** Are the course learning objectives reflected in the methods and materials used for teaching, learning, and student assessment? Are the learning objectives actually taught in classroom and practice sessions? For example, if an objective of your course is that "at the end of the course, students will be able to manage a normal labor and childbirth," information about the mechanics of labor and signs of common complications should be included in the teaching, learning, and assessment materials. Moreover, teaching should include opportunities for students to practice those skills with models and with patients.

- **Do students and teachers understand, accept, and use the methods and materials?** Do teachers and students feel that the method or materials present information in a clear and understandable way, are useful, can be applied in their teaching and learning, and were effective in helping students achieve the learning objectives? Are teachers or students confused by any of the methods or materials used?

When you are assessing teaching materials, consider both their technical and educational value. **Technical assessment** confirms that the content is technically correct, up-to-date, written in appropriate technical terms, and comprehensive enough to meet learning objectives. In addition, it ensures that the content does not include irrelevant information that decreases the clarity and usefulness of the materials. **Educational assessment** confirms that materials are properly structured, easy to use, and clear, facilitate learning, and enable students to attain the specified objectives for which the materials were selected or prepared.

How to Collect Monitoring Information

When deciding how to collect information, remember that monitoring should be:

- **Useful**—informs teachers and administrators about what works well and what should be changed.

- **Efficient**—produces helpful information using minimal time and resources.

- **Continual**—information is collected during a course as well as after the course is completed.

See the job aid at the end of this module for a list of methods you can use to monitor teaching. Information can be collected from teachers, students, and former students. The most common methods for collecting information are self-assessment, feedback from students, peer review, and review of examination results. These methods often use tools such as questionnaires, guidelines

for interviews, and observation checklists. Apply a number of different methods to help identify strengths and areas for improvement to guide planning for future courses.

Self-Assessment

One way to monitor your course is through reflection and an honest evaluation of your own performance as a teacher. Although this sounds easy to do, it is very subjective—use it along with other monitoring methods.

Below are some simple questions that you may ask yourself about your course:

- How successful were the teaching and assessment methods used? Did they hold the students' interest? Did a variety of students participate?
- Did you follow the syllabus and course schedule that guide the sessions? Did you revise activities as needed? Do you need to change your syllabus to better reflect the core competencies for the academic program? Did your session outlines help to focus and organize your teaching?
- Did students have the necessary experiences during simulated and clinical practice sessions? What do you know about students' performance during practical sessions? Did you or somebody else observe their performance? What can you do to better prepare for and conduct learning experiences?

Feedback from Students

Feedback from students can be used to appraise teaching methods and materials as well as the content, relevance, facilities, and organization of the course. Feedback from students will allow you to assess course elements such as the:

- Extent to which the course met the students' expectations
- Appropriateness of the teaching and assessment methods used
- Appropriateness of the materials used
- Aspects of the course that students found the most or least helpful
- Links between theoretical and practical sessions

Some methods for collecting feedback from students are evaluation questionnaires, one-on-one interviews, informal discussions, and focus group interviews. Students should be asked for feedback—including what was difficult and what was useful—as well as for constructive suggestions about how the course might be improved.

The most common method of collecting students' perceptions about a course is through an anonymous **evaluation** or **feedback questionnaire**. Written questionnaires tend to be more objective and easier to administer than interviews. However, they provide little opportunity to probe for more information or to complete partial answers.

When developing and administering questionnaires:

- Use a rating scale. If the majority of students rate an item very high or very low, assess the situation further.

- Include some short-answer questions to allow students an opportunity to share their feelings.

- Ensure anonymity to encourage honest responses.

Sample 12-1 is an example of a feedback questionnaire. The form can be revised to assess additional areas or to include more short-answer questions.

Sample 12-1. Example of a Student Feedback Questionnaire

QUESTION	Very Good		Neutral		Very Poor	Don't Know
1. All things considered, how would you rate this person's effectiveness as a teacher?	5	4	3	2	1	
The Teacher	**Strongly Agree**		**Neutral**		**Strongly Disagree**	**Don't Know**
2. Clearly summarized the learning objectives and activities planned for the course	5	4	3	2	1	
3. Was well organized	5	4	3	2	1	
4. Showed concern for students	5	4	3	2	1	
5. Had enthusiasm for teaching	5	4	3	2	1	
6. Encouraged students to participate in classes	5	4	3	2	1	
7. Stimulated my interest in the subject	5	4	3	2	1	
8. Gave clear explanations	5	4	3	2	1	
9. Spoke clearly	5	4	3	2	1	
10. Showed how the course topics were related to one another	5	4	3	2	1	
11. Successfully related to students	5	4	3	2	1	
12. Was accessible to students seeking advice	5	4	3	2	1	
The Subject	**Strongly Agree**		**Neutral**		**Strongly Disagree**	**Don't Know**
13. Overall, the workload was reasonable	5	4	3	2	1	
14. The pace at which the subject matter was covered was reasonable	5	4	3	2	1	
15. The preparation required for each session was reasonable	5	4	3	2	1	
16. The subject was challenging	5	4	3	2	1	
17. The aims of the course were achieved	5	4	3	2	1	
18. The teaching methods used helped me to understand the subject	5	4	3	2	1	
19. The examinations covered the learning objectives for the course	5	4	3	2	1	
20. The examinations accurately reflected my abilities	5	4	3	2	1	
21. Feedback on my work was provided promptly	5	4	3	2	1	
22. Feedback on my work was helpful	5	4	3	2	1	
23. The recommended reading was valuable for my understanding of the subject	5	4	3	2	1	
24. The recommended practice activities were valuable for my mastery of the subject	5	4	3	2	1	
25. What were the best aspects of the course, and why?						
26. In what ways could the teaching of this course be improved?						
27. If you have any additional comments or suggestions, please write them here.						

Other methods for obtaining students' feedback are **one-on-one interviews, informal discussions,** and **focus group interviews**. These approaches are useful for in-depth exploration of ideas or issues. To reduce bias and increase the objectivity of the results, carefully select your interviewers. For example, students may feel intimidated and less inclined to provide candid responses if their own teachers interview them. For this reason, it may be more effective to recruit and train a student, or someone else who is not a teacher, to conduct the interviews.

Select several aspects of the course that you want to assess, such as course content, teaching methods, materials, clinical rotation, and administrative arrangements. Give the interviewer a list of open-ended questions for discussion. The facilitator should read each question and ask students to respond verbally or in writing, either individually or in groups. If responding in groups, students can write their comments on flipchart sheets or on a writing board under respective category headings. The facilitator can then review the comments alone or lead a discussion with the students about their comments.

Some examples of questions for discussions or interviews are:

- What were your expectations for the course? To what degree were they met?

- Based on the stated course objectives, did you learn what you were expected to learn?

Whether collecting student feedback through anonymous questionnaires, discussions, or interviews, review the comments provided by students and note the areas that they feel need improvement. Pay particular attention to common themes.

Peer Assessment

Another way to monitor teaching is to ask a student, other teacher, administrator, or outside consultant to observe your teaching and provide you with feedback. Ideally, ask someone who is not a close friend or in a position that would interfere with the ability to be objective, and is familiar with effective teaching approaches. It is important for observers to decide, in advance, what questions about your teaching they wish to answer. The results of observations of the content, context, and process of teaching can be recorded on videotape or on an observation questionnaire.

Observation of teaching sessions can provide feedback in areas such as:

- Overall session outline, learning objectives, and clarity of the session. Was the session structured clearly? Did students understand what was required, and when?

- The degree to which you clearly stated and then covered the learning objectives for the session.
- Your presentation skills. Did you present information clearly, in an organized manner, and in a way students found interesting?
- Demonstration skills. Did you demonstrate tasks step-by-step in an understandable way so that all students could see?
- Questioning skills. Did you ask relevant questions? Did you use students' names?
- Feedback skills. Did you provide timely and constructive feedback to students?

For more details on these areas, refer to the modules *Prepare and Deliver Interactive Presentations* and *Facilitate the Development of Healthcare Delivery Skills*.

Consulting with clinical instructors or preceptors either in person or through an anonymous questionnaire is another way to use peer assessment to monitor your course. Ask clinical instructors questions such as:

- Did students have the theoretical background necessary for the rotation? Were there any common areas needing improvement?
- Did students demonstrate competency in basic, practical skills? Were there any skills that were problematic?
- Were the clinical practice sessions coordinated well? Was the clinical instructor informed of the related objectives and provided with any essential tools for assessment, such as checklists or logbooks?

Measure Immediate Outcomes

You can measure the immediate outcomes of a session, rotation, course, or term. The purpose is to determine if the students understood what was taught and if they demonstrated the expected knowledge, skills, and attitudes. This measurement should answer the questions: "Did student assessments show that students achieved the expected outcomes in the knowledge, skill, and attitude domains?" "Were there any areas in which students had a great deal of trouble?" "If so, what can be done do to improve the teaching, learning, and assessment activities and materials related to those areas?"

Immediate outcomes can be measured in the following ways:

- **Review the results of previous assessments.** Reviewing the results of written and practical examinations as well as national licensing examinations will help you determine to what extent a course or academic program achieved its expected outcomes. You, or a qualified person from outside the school, should review the results of both formative and summative assessments of students. Then decide if the results meet your expectations, identify where performance is weak, and suggest how teaching methods and materials might be modified to improve students' performance.

- **Assess a sample of current students.** If you need more information to make decisions about future teaching, you or other qualified persons should assess the knowledge and skills of a sample of current or previous students. The methods and materials used to assess knowledge, skills, and attitudes must reflect the learning objectives for the course.

CONTRIBUTE TO BROADER EVALUATIONS

Monitoring is defined as a **continual** process of gathering information about teaching for practical judgment and decision-making. Evaluation is the **periodic** assessment of the overall process and final results of a course or academic program. The results of evaluations should be used to demonstrate to teaching institutions, funding agencies, and national authorities to what extent the resources invested in teaching produced the expected effect. In addition, the results should be used to identify areas in which teaching could be strengthened. Many of the same indicators, techniques, and tools that are used for monitoring of courses also can be used for the evaluation of a course or academic program. Therefore, if monitoring is done well, evaluation is simplified and, in many cases, may not be needed.

There are four main types of evaluations. These are the evaluation of the process, final outcomes, effectiveness, and impact (see **Table 12-1**).

- **Process** refers to the changes made in the way a course or academic program is taught, the methods and materials used, and how teachers and students respond to those methods and materials.

- **Outcomes** refer to the final results of a course or academic program, particularly with regard to students' knowledge, skills, and attitudes (i.e., competence). You can evaluate outcomes by testing students at the end of a course or academic

program. The examination, however, must be relevant and based on defined learning objectives that reflect the job that the students are being trained to do.

- **Effectiveness** assesses the ability of students to apply knowledge, skills, and attitudes to their work after graduation (i.e., performance). It can be evaluated by finding out how well students are doing after they have left the teaching institution and started work.

- **Impact** concentrates on improvements in the health status of a population that may, or may not, be related to changes in the quality of care provided by graduates.

Table 12-1. Evaluating the Results of Academic Programs: Process, Outcomes, Effectiveness, and Impact

	PROCESS	OUTCOMES (COMPETENCE)	EFFECTIVENESS (PERFORMANCE)	IMPACT (QUALITY)
Basic question	How did they learn it?	Can they do it?	Do they do it?	How well do they do it?
Process of evaluation	Describing changes made to the teaching and learning process	Assessing if learning objectives were achieved	Observing service delivery by new graduates	Applying a continual, cyclical audit
Responsibility for formal evaluation	Teaching institutions, national academic associations	Teaching institutions, national academic associations	Licensing authorities, professional associations, societies, employers	Health systems, organizations, hospitals, services, clinics
Responsibility for routine or informal evaluation	Teachers and instructors	Teachers and instructors	Self (professional), patients, peers (co-workers)	Groupings of service providers: colleagues, teams, managers, planners

See the job aid at the end of this module for methods that can be used to evaluate teaching. Periodic evaluations of academic programs usually involve the teaching institution as a whole. A funding agency, ministry, regulating body, or professional association may initiate these evaluations. They can help teaching institutions participate in an accreditation process or apply for increased funding. Evaluations of an academic program often involve external parties, such as auditing teams or observers. Although you may not be involved in designing the evaluation, you may be asked to participate in it.

These are some ways that you can contribute:

- Provide honest, unbiased information.

- Document the teaching methods used. You may be required to provide your course syllabus, any associated planning notes,

documentation of clinical instructors' preparation, and the like. Provide any requested information or documentation.

- Assist in using evaluation results to improve teaching and learning.

Process and Outcomes

Most teaching institutions have experience in monitoring and evaluating the process and outcomes of teaching, particularly in relation to students' competence at the end of an academic program. If monitoring did not collect enough information about teaching to make important decisions, your teaching institution might consider evaluating the process and outcomes of an academic program. This type of evaluation should answer the question: "When students are taught in a particular way, do they possess the expected competencies at the end of the academic program?"

As with the monitoring of process, the **evaluation of process** is not concerned with precise measurements of success or failure. The purpose is to describe how teaching and learning were implemented in order to identify ways to increase students' competency at the end of the academic program. A process evaluation should describe:

- How the academic program was implemented
- The methods and materials used for teaching, learning, and student assessment
- How teachers and students reacted to the program, methods, and materials

An evaluation of **outcomes** can be used to identify gaps between what was expected and what was achieved. It looks at the ability of students to apply knowledge, skills, and attitudes in an ideal setting upon completion of an academic program. The evaluation should assess:

- A group of students who have completed the full academic program
- The competence of students in an **ideal environment** with no constraints in equipment, supplies, and other support
- Key indicators (e.g., key knowledge, skills, and attitudes) that are carefully selected based on the expected outcomes of the academic program

Effectiveness

Teaching is effective if students are able to apply the competencies they developed during their education to their work after graduation. Effectiveness considers the knowledge, skills, and

attitudes of graduates within a real service setting, which may facilitate or hinder their application.

Before an evaluation of the effectiveness of an academic program can be conducted:

- Key changes must be made to the program that would lead to changes in outcomes.

- Outcomes must be measured to demonstrate that students actually possess expected knowledge, skills, and attitudes before graduation.

An evaluation of the effectiveness of an academic program typically measures change in comparison to something (e.g., graduates before and after changes are made in an academic program, graduates from a school that made changes compared to those from a school that did not make changes). Because professional performance is much more difficult, complicated, and costly to measure than students' competence, an effectiveness evaluation is typically beyond the capacity and resources of a single teaching institution. National or state coordinating groups such as licensing authorities, professional associations, or other societies should lead the evaluation with the cooperation and assistance of teaching institutions. Moreover, it is recognized that not all countries have the need or the resources to conduct this type of evaluation.

Impact Impact assesses changes in the quality of care delivered. It assesses many factors such as improved case management, improved availability of drugs, more rational use of drugs, better referral, better care seeking, increased service utilization, and increased patient satisfaction. Because impact measures many factors in addition to the performance of healthcare professionals, it is not possible to establish a direct cause-and-effect relationship between changes in an academic program and changes in quality of care. An impact evaluation can only suggest a probability that revised teaching contributed to the effect of improved quality of services. In addition, it is difficult and expensive to measure impact accurately. Impact evaluation is therefore not recommended.

HOW TO REVIEW AND REVISE TEACHING

Monitoring and evaluation reflect and demonstrate a commitment to achieving specific learning outcomes. Monitoring and evaluation should show to what extent expected results were achieved and give clear indications about the elements of a course or academic program that need to be strengthened or changed to better achieve the expected results. The aim of monitoring and evaluation is not to

produce a report, but to obtain information that can be used to identify strengths and weaknesses in a course or academic program and plan for future action. In addition to direct application to planning for future teaching, evaluation results can also help justify the use of resources and technical support, and demonstrate a need for additional resources and support.

You may monitor and adjust your own teaching as an individual teacher, or work in a team with others to share achievements and difficulties, and brainstorm about actions needed to overcome difficulties. Serious issues may require involvement with your institution's administration, associated regulating bodies, or the ministry of education or health.

Once information has been collected, review the results and identify needed actions. The review should assess the appropriateness, relevance, and outcome of teaching and be used to develop suggestions for modifying teaching, learning, and student assessment. Determine if methods and materials for teaching, learning, and student assessment are sufficient, relevant, and useful for both teachers and students. Identify what modifications are needed. Modifications might include:

- Reorganizing the course
- Revising learning objectives
- Identifying new methods for teaching and assessment or refining existing methods
- Choosing new materials or revising existing materials
- Selecting new practice facilities or upgrading existing ones
- Improving the coordination with other teaching units or courses

The following activities are suggested for reviewing and revising teaching:

- **Interpret the results of monitoring and evaluation.** Teaching staff should review monitoring information and the results of evaluations and compare the expected results of a course or academic program with the actual results. They should then identify the gaps between what was expected and what was actually achieved, and try to determine the causes of those gaps. Finally, they should decide what actions might be needed to reduce those gaps. When identifying what actions are needed, answer the following questions: "What were the successes or strengths?" "How could they be extended?" "What

were the problems or limitations?" "How could they be addressed?"

- **Plan for future changes in teaching.** The actions identified to reduce gaps should be incorporated into a plan of action for strengthening teaching. This could happen during review and replanning when a teaching institution revises its plan of action, or it could happen as part of the process of monitoring and refining activities. It is important to recognize that action needs to be taken and to formalize that action as an addition or revision to an overall plan of action. When planning for future changes, answer the following questions: "What action should be taken?" "What changes should be implemented?" "What is needed to make those changes? When? By whom?" "What is needed in terms of resources and further information?"

SUMMARY

You can monitor your courses by continually gathering information and adjusting your teaching. Try to collect information about the content, context, process, and outcomes of your teaching. Use multiple methods and multiple sources to obtain valid and useful information about your courses. In addition, you may be asked to participate in the periodic evaluation of the outcome or effectiveness of a course or academic program. You can contribute to these evaluations by assisting the evaluation team to compile information. Monitoring and evaluation provide an important mechanism for reviewing and revising courses and academic programs. The results of monitoring and evaluation should be used to identify whether any changes are needed in the objectives, content, methods, and materials used for teaching, learning, and student assessment. These changes should result in better outcomes for individual courses or entire academic programs.

MODULE TWELVE JOB AID: MONITOR AND REVISE TEACHING

Use the following table to identify possible monitoring and evaluation methods for different areas of appraisal.

AREA OF APPRAISAL	CAN BE USED TO	POSSIBLE METHODS	CHECK IF USED (✓)
Content: What information was presented in the course?	• Monitor a course	Assess yourself	
		Interview or survey other teachers	
		Review course materials	
Context: How did the physical, social, and political environment affect learning? What facilities were used? Were they appropriate?	• Monitor a course	Assess yourself	
		Interview or survey other teachers	
		Interview or survey students	
		Interview or survey clinical staff and administrators	
Process: How was teaching organized and conducted? What methods and materials were used? How did teachers and students react to them?	• Monitor a course • Evaluate a course • Evaluate an academic program	Assess yourself	
		Interview or survey students	
		Have teaching observed by peers or other objective persons	
Outcome: Were the learning objectives achieved? Are students able to apply the expected knowledge, skills, and attitudes in an ideal environment?	• Monitor a course • Evaluate a course • Evaluate an academic program	Review results of previous assessments	
		Assess, in an ideal environment, the knowledge, skills, and attitudes of a sample of students who completed the course or academic program	
Effectiveness: Was there a change in the ability of graduates to apply expected knowledge, skills, and attitudes to their jobs?	• Evaluate an academic program	Observe and assess graduates as they perform their work	
		Interview graduates	
		Interview the supervisors of graduates	
Impact: Was there a change in the quantity and/or quality of health services associated with changes in the academic program?	• Evaluate a package of interventions	Review service delivery statistics	
		Interview or survey patients	
		Review patient records	
		Observe service delivery	

Teachers can identify needs for strengthening teaching either on their own, or together with other teachers. To do this they should:

- Review the results of monitoring and/or evaluation and decide:
  - What worked well? What was a success?
  - What were the problems or limitations?
  - What needs to be changed or improved?
  - What action needs to be taken?
- Plan for future changes in teaching.

GLOSSARY

Academic program — A series of courses that have both theoretical and practical components and are designed to prepare students as a specific category of healthcare provider. Academic programs typically involve several years of study, allowing time and opportunities for students to develop essential competencies that encompass essential knowledge, skills, values, and behaviors.

Active listening — A communication technique that helps stimulate open and frank exploration of ideas and feelings and establish trust and rapport with students.

Anatomic model — A learning aid that closely resembles a part (or all) of the human body. Initially working with anatomic models rather than with patients allows students to learn and practice new skills in a simulated setting, thereby reducing stress for the student and risk of injury and discomfort to the patient.

Assessment — A process to determine whether students have achieved the learning objectives.

Attitude — A state of mind or feeling. For example, when counseling a patient, the counselor's attitude toward the patient is important.

Brainstorming — A teaching method in which a list of ideas, thoughts, or alternative solutions that focus on a specific topic or problem is generated. Brainstorming stimulates thought and creativity and is often used along with group discussions.

Care plan — A documentation of a patient's problems, care required, and expected outcomes. Students often use care plans to demonstrate their understanding of and ability to explain management of a patient's problems, and teachers use them to assess students' ability to select appropriate interventions and expected outcomes for the problems presented.

Casebook — A list of skills or tasks that students should be able to perform. Also called a **logbook**.

Case study — A learning method that uses realistic scenarios focusing on a specific issue, topic, or problem. Students typically read, study, and react to the case study individually or in small groups. (See also **Clinical scenario** and **Patient management problem**.)

Checklist — A list of the steps, given in the correct sequence, that are needed to perform a skill correctly.

Clinical care skills — Skills that involve the abilities to assess a patient's situation, decide what action is needed, and design and implement a care strategy.

Clinical practice	A learning method, essential for developing healthcare delivery skills, that allows students to practice skills in the clinic. Clinical practice helps prepare students for the roles and responsibilities they will hold in their profession. It provides opportunities to integrate knowledge, skills, and attitudes. (See also **Clinical practice site**.)
Clinical practice site	The site(s) where students practice clinical skills. (See also **Clinical practice**.)
Clinical scenario	A scenario that typically begins with a variable amount of clinical information and data, followed by a series of questions to which the student should respond. (See also **Case study** and **Patient management problem**.)
Clinical simulation	A simulation that presents the learner with a carefully planned, real or hypothetical patient management situation. Clinical simulations are an excellent method for developing cognitive or clinical decision-making skills. The learner interacts with persons and things in the environment, applies previous knowledge and skills to respond to a problem, and receives feedback about those responses without having to be concerned about real-life consequences.
Closed question	Questions that have a small range of answers (often *yes* or *no*) and are used to assess students' knowledge and develop their problem-solving skills.
Communication skills	The abilities to listen, ask questions, educate, inform, advise, counsel, and check understanding.
Competency	The ability to perform a skill correctly and according to a specific standard (often presented in the form of a performance checklist).
Computer presentation	Use of computer software to create presentations that may include text, graphics, audio, video, and other features. The presentation is then shown to individuals or small groups of students on a computer screen or may be projected on to a large screen using a projection unit.
Constructive feedback	Feedback that is used to tell students how to improve their performance. Constructive feedback must make clear how students can correct inappropriate or incorrect behaviors.
Core competencies	Aspects of a subject or discipline that are common to all students, essential to practice, and essential to master in order to graduate from an academic program and enter into practice. Each core competency for an academic program will encompass cognitive (knowledge), psychomotor (skills) and affective (values and behaviors) domains that are observable and can be appraised.
Core curriculum	Courses and other learning experiences in an academic program or curriculum that are required of all students. There may also be elective courses or courses in specialty areas, but these are not required of all students so are not considered part of the core curriculum.

Course	The basic unit or component of a curriculum within an academic program. It consists of a series of learning sessions on a particular topic. In some institutions, it may be known a subject area, block, or unit. A course may include both classroom and clinical learning experiences.
Course objective	An objective—also known as a main objective, primary objective, or course aim—that describes in clear, measurable terms what students should know and be able to do after completing the entire course. A course may have one or several course objectives. Course objectives often encompass knowledge, skill, and attitude areas or domains, and should relate to one or more of the core competencies for the overall academic program.
Course schedule	A session-by-session summary of learning activities and topics for a course. The course schedule is typically given to students on the first day of a course.
Criterion	A standard on which a judgment or decision is based.
Criterion-referenced test	An assessment that is based on clear criteria that are found in the learning objectives of a course.
Critical thinking skills	The abilities to draw on past experience and seek out new information in order to analyze, reason, reflect, create ideas, and clarify information. Critical thinking is essential for solving problems and making sound decisions.
Curriculum	All of the courses of study offered by an educational institution (e.g., all of the courses offered by a school of nursing).
Direct observation	Watching students as they perform skills. This may take place in a simulated situation or with patients. It is the most valid way to assess students' skills and can be used for both formative and summative assessments.
Discussion	An interactive process in which students share their ideas, thoughts, questions, and answers in a group setting with a facilitator. A discussion that relates to the topic and stays focused on the learning objectives can be a very effective teaching method.
Distractor	An incorrect response in a multiple-choice question. (See also **Multiple-choice question**, **Response** and **Stem**.)
Drill	A verbal question-and-answer period during a classroom or practical session that helps the teacher get a general impression of students' understanding of the subject.
Education	See **Preservice education**.
Educational institution	School or university (e.g., medical, nursing, midwifery school) that grants certificates or degrees.

Essay examination	A common type of written examination in which students are asked to write down what they know about a subject or question. Essay questions are easy to develop and can test students' ability to organize and express ideas. However, the scoring of essay questions is subjective and very time-consuming.
Evaluation	The periodic assessment of the overall process and final results of an academic program. Evaluations of academic programs are designed to answer questions such as; "Did students achieve the competencies expected from the academic program?" and "Are students able to effectively apply their knowledge, skills and attitudes to their work after graduation?"
Feasibility	Capability of being accomplished. An assessment method is considered to be feasible when it can be easily implemented to measure student learning.
Feedback	Information given to students about the quality of their performance. It is essential throughout learning, particularly during and after practice sessions and after students' skills are assessed.
Field notebook	A record of external learning experiences completed by the student in the field (e.g., community or home visit) that can be reviewed by the teacher or clinical instructor.
Flipchart	A large tablet or pad of paper on a tripod or stand, used for presenting information (e.g., agenda, announcements, drawings) to students.
Formative assessment	An informal assessment of students' progress throughout a course. Formative assessment not only helps students improve their performance, it may be used to reinforce important content areas and supplement summative assessments.
Illustrated lecture	See **Interactive presentation**.
Imperfect matching exercise	A type of matching exercise in which the responses given for a question may be used repeatedly or not at all. (See also **Matching question** and **Perfect matching exercise**.)
Inpatient ward	Settings where patients are generally seriously ill, and have already started a care plan and specific treatments. Inpatient wards are a good setting to teach patient management, practice healthcare delivery skills, and demonstrate rarely seen conditions.
Interactive presentation	Verbal presentation of information by the teacher in which presentation of content is supplemented with a variety of questions, interactions, visual aids, and instructional materials. Also known as an **illustrated lecture**.
Knowledge	What is known about a topic or subject. For example, as a student learns the information presented in a course and begins to study and apply this information, the student begins to develop knowledge about the topic or subject.

Knowledge assessment	Formative and summative measures of the information acquired during a course (e.g., quizzes, objective written examination, drills, practice tests, written exercises, case studies, clinical scenarios, patient management problems, project reports, essay examinations).
Learning	Life-long process of acquiring new knowledge, skills, and attitudes. It may occur formally during a learning event or informally during personal reading or study.
Learning journal	A record of a student's learning experiences, which usually includes a brief description of the problem encountered, management of the problem, and education received. It is especially useful for situations in which the student has minimal or no supervision, such as home visits, community-based experiences, or rotations to distant clinical sites.
Learning materials	Materials (e.g., books, articles, reference manuals, performance checklists) used to conduct a course.
Learning objective	A statement indicating what the learner or student will know or be able to do after completing a learning experience or course.
License	A permission granted by a competent authority to engage in a business or occupation, or in an activity otherwise unlawful. For example, to practice medicine, a doctor must have a license, usually granted by a national licensing body.
Logbook	A list of skills or tasks that students should be able to perform. Also called a **casebook**.
Management skills	The abilities to organize, regulate, or be in charge of things such as assigning tasks to staff, maintaining patient records, ensuring the availability of essential supplies and equipment, or designing a system of patient referral.
Mastery learning	Approach to learning that is based on the premise that all learners can master (learn) the required knowledge, skills, and attitudes, provided sufficient time is allowed and appropriate training methods are used. The goal of mastery learning is that 100 percent of learners will master (learn) the knowledge, skills, and attitudes on which the training is based.
Matching question	A test item that in its simplest form consists of two lists of words and phrases that are to be matched. The first list is known as a list of premises; the second is called the list of responses. (See also **Perfect matching exercise** and **Imperfect matching exercise**.)

Monitoring	The process of continually checking the status of a program by observing whether activities have been conducted and completed as planned and whether they are generating anticipated results. In education, monitoring is the ongoing process of collecting information about teaching in order to improve the quality of student learning. Monitoring asks the questions: "How well are we doing?" and "How can we do better?"
Multiple-choice question	A knowledge assessment question in which one or more correct answers can be selected among a variety (commonly four or five) of suggested answers. Multiple-choice questions are the most widely used type of objective test item. (See also **Distractor**, **Response** and **Stem**.)
Norm-referenced test	A test in which students are compared with one another in order to develop a ranking of students.
Objective assessment method	A test in which equally competent scorers will obtain the same score for a given test. It is a method that is free of teacher bias. Objective assessments include multiple-choice, true-false, and short-answer questions. A multiple-choice test is an objective assessment method because two different teachers can score the same test and the results will be the same.
Objective written examination	See **Objective assessment method**.
Open question	A question that allows a wide range of responses, and permits students to describe in their own words the answer to the problem or question. It is used to assess students' knowledge and develop students' problem-solving skills.
Oral examination	A measure of the student's knowledge through an interactive dialogue with one or more teachers. Oral examinations have serious limitations and should only be used to test competencies that cannot be tested by other methods of assessment.
Outpatient department	The point of healthcare providers' first contact with most patients. It provides many opportunities for students to develop healthcare delivery skills and is the most appropriate place to practice interviewing, interpersonal, and counseling skills. It is also an excellent interim step between simulated practice and working with very sick patients in the inpatient ward.
Patient management problem	A problem that typically begins with a variable amount of information and data followed by a series of questions to which the student should respond. (See also **Case study** and **Clinical scenario**.)
Perfect matching exercise	An exercise in which the number of premises and the number of responses are the same, and each response can be used only once. (See also **Matching question** and **Imperfect matching exercise**.)

Performance	The way in which someone functions. Good performance is the ability to do something according to the standard in the real world (on the job).
Positive feedback	Feedback that gives students a clear idea of which correct behaviors they are demonstrating, so that they can repeat those behaviors.
Practice test	A short version of a written examination designed to help prepare students for a summative assessment. Also called a **quiz**.
Preservice education	Learning that takes place in preparation for taking on a future role, for example as a doctor or nurse. This education provides a broad array of knowledge, skills, and attitudes needed to fulfill that future role and from which the student can later select what is needed according to a given situation. Preservice education most frequently takes place in schools and universities (e.g., medical, nursing, and midwifery schools) that grant certificates or degrees.
Procedure	All of the individual steps or tasks required to perform a medical intervention.
Project report	A report prepared and presented by a student describing a project or task, such as conducting a survey in the community or working in a healthcare team.
Question bank	Lists of questions available to create a variety of tests. Question banks can be recorded on paper or stored on a computer.
Quiz	A short version of a written examination designed to help prepare students for a summative assessment. Also called a **practice test**.
Rating scale	Scale that describes a quality or frequency of judgment. It is usually associated with a number and descriptive text, and can be incorporated into checklists or feedback reports or used independently.
Reliability	The ability of an assessment method to consistently measure what it is designed to measure.
Response	One of the four or five alternative answers in a multiple-choice question. (See also **Multiple-choice question** and **Distractor**.)
Role play	A learning activity in which students play out roles in a simulated situation that relates to one or more learning objectives. Role plays promote learning through imitation, observation, feedback, analysis, and conceptualization.
Short-answer question	Question requiring the student to provide one or several short responses (one or two sentences) to a question or situation. No predefined possible answers are given to students.
Skill	A group of steps or tasks, often using motor functions, which are completed to accomplish an end. A skill can be either a physical activity or an intellectual activity.

Skill acquisition	The initial phase in learning a new skill or activity, in which students are aware of the skill and know how it should be performed, but do not always perform it correctly.
Skill assessment	Determining the ability of students to perform essential skills.
Skill competency	An intermediate phase in learning a new skill or activity, in which students perform the skill correctly, but may not always progress from step to step efficiently. This is the level typically reached in the preservice education of healthcare providers, because the final level requires practice over time.
Skill proficiency	The last stage of skill development, which usually occurs after students graduate from an academic program and have practiced the skill over time at their workplace. Proficient healthcare providers consistently perform skills correctly and efficiently.
Skills development lab	A classroom, a room dedicated to simulated practice (sometimes called a Clinical Skills Center), or a room in a clinical practice site set up for clinical or skills practice sessions.
Slide	Information (e.g., text, tables, charts, diagrams, photographs) projected onto a screen. Slides include traditional 35 mm slides shown using a slide projector and computer slides shown using a computer and a projection unit.
Standard	A measure of comparison established by authority, custom, or general consent as a model.
Stem	The part of the multiple-choice item that poses a question or a problem situation and is followed by alternative answers. (See also **Distractor** and **Multiple-choice question**.)
Step	Specific action needed to accomplish a skill or activity. (**Task** often used synonymously.)
Structured feedback report	A standardized way to give feedback to students on their performance. Because a feedback report covers a specific period of time, it assesses sustained performance.
Structured practical examination	An examination that can assess knowledge, skills, and attitudes by having students rotate through a series of stations where they answer questions (orally or written), or perform tasks under observation.
Subjective assessment method	An assessment method in which the score can be affected by the opinion or judgment of the person doing the scoring.
Summative assessment	A formal assessment of the student's achievement at scheduled times throughout the course. Summative assessments assign a grade or mark to the students' level of competence for key learning objectives.

Supporting objective	An objective (also known as a secondary, specific, instructional, or enabling objective) that supports the main objective by describing the specific knowledge, skills, and attitudes that students must master to achieve the main objective.
Syllabus	The design document for a course, providing a summary of all the basic information about a course (e.g., course objectives, student assessment methods).
Task	Skill or activity broken down into specific actions, assignments, or duties. (**Step** often used synonymously.)
Task analysis	A description of the essential steps of a task or skill, including exactly how the steps are performed, and in what order.
Teacher	Person who has knowledge and skills in a specified subject area and the ability and training to transfer them to others. Teachers are usually found in preservice education programs.
Teaching	Transferring or conveying knowledge, skills, and attitudes. Teaching usually refers to instruction provided through classroom activities and is often associated with preservice education programs.
Teaching method	Methods or approaches used by a teacher for presenting information (e.g., classroom presentation, brainstorming, discussions) and helping students develop skills (e.g., demonstrating a skill, giving feedback as students practice a skill).
Test	See **Assessment**.
Transparency	Plastic sheet with information to be presented to students. The transparency is placed on an overhead projector and shown on a screen in the front of the classroom.
True-false question	A question that asks the student to respond with either the answer "True," meaning the statement is true, or the answer "False," meaning the statement is false.
Validity	The ability of an assessment method to measure what it is intended to measure. A test is considered valid when it adequately measures whether the knowledge, skill, and attitude objectives of the course have been met.
Video	Visual images and audio shown on a monitor or computer screen, or projected from a computer and a projection unit onto a screen.

Visual aid	A type of learning aid or teaching tool that supplements learning activities by highlighting important points or key steps or tasks. Common visual aids such as writing boards, flipcharts, overhead transparencies, slides, videotapes, and computer presentations help to communicate information clearly and maintain student interest.
Writing board	Board on the wall of a classroom used for writing and displaying information. This board may be a chalkboard or a white writing board.
Written exercises	Exercises that ask students to read (or view, watch, listen) something and then answer questions in writing to check their understanding of the information. Exercises, which are typically completed as "homework," are useful for formative assessment.