Promoting Clinical Excellence: How to Strengthen Your Clerkship Program

(Batteries not included)

Education in Clinical Skills Task Force
Undergraduate Medical Education Committee
Association of Professors of Gynecology and Obstetrics
1230 Priest Bridge Drive, Suite 7
Crofton, MD 21114
Tel. (410) 451-9560
Fax (410) 451-9568

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Association of Professors of Gynecology and Obstetrics

Education in Clinical Skills Task Force

Sharon Phelan, MD, Chair
Lamar Ekbladh, MD
William P Metheny, PhD
Mark D. Nichols, MD
James J Sowash, MD
Louis A. Vontver, MD
William Young, MD

Undergraduate Medical Education Committee

Joanna M. Cain, MD, Chair
Dee E. Fenner, MD
Martin L. Gimovsky, MD
Lewis A. Hamilton, MD
Lee Lee Doyle, PhD
Gaylyn Li, MD
Diane M. Magrane, MD
Gary R. Thurnau, MD
Louis A. Vontver, MD
Donna D. Wachter, Executive Director

Association of Professors of Gynecology and Obstetrics
2130 Priest Bridge Drive, Suite 7
Crofton, MD 21114
Tel. (410) 451-9560
Fax (410) 451-9568

CONTENTS

I

To study the phenomena of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all."

Sir William Osler
1849-1919

Introduction

Louis Vontver, MD

This booklet on teaching and evaluating clinical skills in obstetrics and gynecology clerkships was developed by a subcommittee of APGO in response to popular requests for help.

A classic model of curriculum design was used in planning this booklet. It asks you, the instructor, to make an initial assessment of the knowledge, attitudes and skills of the learners. The model then asks you to develop objectives that the learners will be expected to achieve during the time allotted to the curriculum.

Utilizing your assessment of the learners' capabilities, and the objectives you wish them to achieve, you next design specific teaching strategies to help the learners achieve the desired objectives, whether they be clinical skills, knowledge, or attitudes. The model asks that you constantly evaluate the objectives, teaching strategies, and results, in order to give constructive feedback throughout the learning process, as well as at the end of the course.

Teachers will find that all the steps of this process—initial assessment of students' capabilities, development of clear objectives, individualized instruction, and continuous assessment of progress with ongoing encouragement and correction—have value for both the teacher and the learner. Personal involvement is essential.

Learning of any kind should be enjoyable, and the learning of skills particularly so. Adult learners acquire skills more readily when they feel confident, comfortable, and responsible. They also benefit from knowing why, when, and how the skills they are learning are to be used. Opportunities to observe are helpful, yet students also need practice and constructive feedback in order to reach their ultimate goal of highly competent hands-on performance.

As skills improve, positive attitudes evolve regarding their use in practice. When we, as clinicians, are not comfortable with a skill or procedure, we tend not to use it. A well-rounded repertoire of basic clinical competencies, including success in interpersonal communication, serves to increase confidence in the clinical history and examination and results in more personalized patient care.

Confidence in basic clinical skills also has a restraining effect on the excessive use of technology, making cost containment possible. The best clinicians have developed many different skills and are willing to use them wisely; only then is it possible to select and perform the most appropriate diagnostic and therapeutic procedures for each patient. Skills in the more technical procedures can enhance the quality of patient care when they are combined with knowledge of when and how best to use them; otherwise they may have no effect other than to increase cost and raise patient concern.

This booklet is designed to provide teachers with concepts, options and methodology

to actively teach and evaluate clinical skills, as well as offer encouragement and inspiration. We hope to excite you about your involvement in a pleasant and worthwhile process, and wish you success.

Chapter One
Getting Started
Sharon Phelan, MD

Congratulations! You are in the ranks of the clerkship directors and other student educators in obstetrics and gynecology. During your career you will have the privilege and responsibility of influencing and guiding the development of hundreds of students directly and indirectly. You will have an enormous impact on how they approach medicine in general and women's health care issues in particular.

As you begin the task, three fundamental questions need to be addressed:

1. What are the departmental and institutional goals and objectives for the ob\gyn clerkship, in particular the clinical education component?

2. What is your role in achieving the above (or, in other words, what is your job description)?

3. What resources are available for achieving the clerkship's educational goals and objectives?

Often, these basic questions are neither asked nor addressed by persons who are responsible for designing clerkship programs, but they are fundamental to achieving success.

With regard to the goals and objectives of the clerkship, bear in mind that the departmental goals may be in conflict with institutional goals. One example of such a conflict would be the goal of recruiting students into the specialty versus the overall teaching of preventive women's health care. Since your success as an academic educator may depent on your achieving or moving towards the established goals, these need to be defined and agreed upon.

Next, what is your specific role in attaining those goals? Are you to be an agent of change, or expected to maintain the status quo? Are you to "do it yourself" or help the faculty implement the educational program through consensus building?

Finally, what resources do you have or need to carry out the goals and objectives for clinical education? (See also Chapter Six.) It may be best to inventory the resources at your institution as a means of determining in advance whether the goals and objectives that you have selected are actually attainable.

The Typical Ob/Gyn Clerkship

Based on a national survey of clerkships, typical ob/gyn clerkship programs share the common elements described below.

- The length of most programs is between 6 weeks (42%) and 8 weeks (33%).
- There are an average of 14-18 students per rotation.
- Many programs have a single clerkship director with multiple sites in area hospitals and clinics.
- Most programs divide the clerkship pretty evenly between obstetrics and gynecology, with 60% offering a formal oncology program and 40% offering formal reproductive endocrine clinical training.
- Clinical outpatient care varies by institution and site, but generally comprises 20% to 30% of the clerkship time. Virtually all students (94%) participate in general ob/gyn clinics. Fewer do "specialty clinics," such as family planning (56%), sexually transmitted disease clinic (32%), untrasound (38%), and genetics (12%).
- The majority of students take part in an average of 4-8 vaginal deliveries (80%).
- Night call is typically all night call (87%), although some schools are trying a night float system for students similar to that used for residents.
- Evaluations are typically multi-faceted with varying combinations of the following components: clinical evaluation (95%); final written exam (95%); final oral exam (33%); oral presentation (14%); written history and physicals (15%).

Establishing Your Own Ob/Gyn Clerkship Objectives

Although there are typical patterns of clerkships, they may not address the unique strengths and weaknesses of your own program, nor your faculty objectives and institutional goals. Therefore you need to look closely and determine whether the broad national descriptors cited above are applicable to your individual program and to the educational needs of your students.

In general, the ob/gyn clerkship program needs to help develop within the student:

- Technical skills, especially those unique to the field, such as pelvic exams and delivery techniques;

- The core clinical knowledge base essential for delivering primary health care to women; and

- The attitudes and approach to patients necessary to establish rapport and trust.

Developing Faculty Consensus

A beginning step is to develop faculty consensus around the specific objectives of your clerkship program, particularly the clinical component.

- Ask yourself what is, in a few words, the end product desired (the goal), and how can in 10 vaginal deliveries. The use of a checksheet maintained by each student would serve it be measured? One example of such a goal might be to have all students participate as the measure. Another goal might be to have all students understand and appreciate that health screening for women is a constant activity. To measure this goal, you can require that female patient workups by fourth year students on the medicine service demonstrate documentation of last menstrual periods, contraceptive method, last pap smear, last mammography, etc.

- Make opportunities for faculty to discuss and have a dialogue about the goals of the program. This may best be done by a half-day or full-day retreat involving the entire faculty or more commonly key faculty and residents. The purpose of such a retreat is to create a series of goals and objectives for the third year clerkship educational experience. This process will encourage ownership of the curriculum by the faculty and residents.

"How to" considerations

- Have participants submit a ballot prior to the retreat where they have scored a series of objectives and procedures as crucial, important, or not important for the clinical education of a third-year clerk. The list (constructed by you or another designated person) may be based on APGO objectives (*Medical Student Educational Objectives, 8th ed)* as well as other areas of concern or confusion raised by students or staff in prior rotations. Tally the ballots prior to the retreat. At the retreat, share the ones around which there is consensus; then focus on building consensus where there is disagreement.

- Have a faculty member write educational objectives for clinical activities in a different or subspecialty specialty than his/her own. For example, an oncologist could write obstetric objectives, the reproductive endocrinologist could write oncology objectives;

and so forth. The purpose of this is to focus the discussion on very basic aspects of a program, which the entire group can then discuss.

Weighing Educational Techniques

Once objectives are established then decide how each objective should be taught. This determination should be based on each program's unique circumstances (eg, students' background and education, the patient population, staffing, physical plant, and time restrictions). Choices include lecture, computer simulation, inpatient contact, ambulatory clinics, and more (see Chapters Two and Three).

Evaluation: A Critical Step

Prior to implementing change, a method of evaluating the program must be developed. The purpose of this is to monitor the success of a strategy or intervention. Evaluation is a continual process, and should not end once the program is established. How does one use this information to constantly adjust and improve the educational environment? (See Chapter Four.)

Summary

This monograph is not to serve as an all-inclusive resource; instead it will help provide a structure around which you may design and implement your own clinical education program. Along the way, it may include some ideas that are useful for implementation. An annotated bibliography is included at the end of each chapter to allow more in-depth reading and research. Additionally, brief case studies appearing in Chapter Seven are meant to exemplify common clerkship problems and demonstrate attempts at solutions.

The following chapters are designed to help you become an educational leader within your department and institution. Doing so may also require that you become an agent of change, when necessary. Having the ability and opportunity to design and run dynamic, successful educational programs, can make being an educator a truly fulfilling academic career option.

Chapter Two
Teaching and Evaluation of Student Clinical Skills Using Patients

William P. Metheny, PhD

Growth in technology and escalation of health care costs, combined with increasing limitations on financing, have had a major impact on the way medical care is delivered. This in turn has restricted medical students' opportunities for clinical experience. This chapter outlines several different strategies to address these often restrictive changes.

Use of Patients in the Clinical Setting

Direct contact with actual patients, both hospitalized and seen on an outpatient basis, provides students with clinical exposure to a variety of common and uncommon conditions and disease, and opportunities to develop interactive and clinical skills.

Strengths

- Exposure to actual patients and a variety of conditions over time provides realistic, temporal, and spontaneous learning opportunities.
- Anesthetized patients allow for repeat examinations and visualization without patient discomfort.
- Inpatients with serious conditions make short term continuity of care possible in a learning environment.

Limitations

- It provides uncontrolled exposure to specific patient problems.
- Disease distorts the anatomy and precludes learning the basics.
- Often the teaching environment is hurried and may lack consistency.
- Continuity of care is difficult to achieve with patients seen in ambulatory units or for same day surgery.

- There is limited opportunity for practice, feedback, and re-instruction.

- There are ethical concerns about the use of disadvantaged (clinic) patients and about performing multiple examinations on an anesthetized patient without written consent.

- The method employs an unreliable, non-standardized evaluation of competence, and written evaluations often do not reflect specific aspects of competence.

"Teachable"moments

With the use of patients in the clinical setting, opportunities for teaching are spontaneous but are potentially limited by time, availability of physicians, prevalence of the condition, patient access, and patient comfort. These clinical encounters provide excellent material to incorporate into rounds and small group discussions. This may allow a "sharing" of clinical encounters with other students and thus offset the problem of a given individual having limited exposure to the scope of diseases.

"How to" considerations

Ambulatory Care Patients

- Guidelines derived from objectives for student learning should be distributed to students, faculty, residents, and other clinic teaching staff.

- An instructor dedicated solely to student teaching in the clinic works best.

- Students benefit most by seeing only a few (and preferably preselected) patients, who are jointly examined by them and the instructor.

- The instructor should observe as the student interviews the patient, paying close attention to the student's professional demeanor.

- The student should present the results of the history and physical examination to the instructor and develop a differential diagnosis and management plan.

- After the patients have left, a final teaching sessions will add significantly to students' learning and retention.

  Note: Chapter Five gives more suggestions on how to utilize this teaching site.

Inpatient Care Patients

- Expectations for students and their responsibilities for patients on the service should be clearly delineated, written up, and distributed to faculty, residents, and nursing staff.

- Students respond well when they are treated as team members whose contributions to patient care are valued.

- Students should be observed interviewing the patient, and later questioned on their findings and management plans.

- Students should be allowed to examine selected patients under anesthesia with permission from the patient and guidance from the physician in charge of the case.

Use of Standardized Patients (SPs)

For teaching or evaluation purposes, non-physicians may be trained to simulate a patient encounter.

Strengths

- It is consistent, accurate, predictable, and reproducible.

- It allows for immediate feedback between patient and instructor.

- There are opportunities for practice and reinstruction.

- The patient can serve as both teacher and evaluator. (Specialized standardized patients, trained to both teach and evaluate, as known as gynecological teaching associates, or GTAs.)

- It permits objective evaluation of competence in medical interview and physical examination.

- The learning atmosphere can be relaxed.

Limitations

- Recruitment of SPs may be difficult; screening is essential.

- It can be expensive, and department chairmen often resent the cost.

- It requires training and may be time-consuming.

- The method is contrived, particularly with regard to SPs simulating "disease".

- There is reduced spontaneity in learning.

"Teachable" moments

Predictable teaching opportunities are limited by realism, spontaneity, and scope of simulation as regards the patient condition. It is potentially expensive to maximize opportunities.

"How to" considerations

Methods of Student Instruction/Evaluation

- Many programs use two SPs per student session; one as the examinee, the other as as the evaluator. Typically SPs alternate in these two roles.

- The number of gynecological examinations performed on an SPA should be limited to a maximum of three to four on any given day. At this rate, four SPs could provide instruction for 10—12 students in a two-day session.

- A faculty member could replace the evaluator SP, but this would increase the hidden costs of the program and possibly reduce the efficiency of processing students.

Recruitment, Selection, and Retention of GTAs

- Advertisements placed in hospitals, college newspapers, graduate schools, and organizations for women's health, as well as those circulated through informal networks, tend to attract highly intelligent, articulate women who are concerned about women's health care.

- An existing program of GTA recruitment may be available to you through the medical school.

- SPs must be able to work within the "system" and have thought through the implications of participation for themselves and for others.

- SPs must have the ability to both learn and teach communication and psychomotor skills associated with physical examination.

- SPs must have good communication skills and be open to discussing human sexuality within the context of the physical examination.

- SPs must have a normal medical history and physical examination, as well as the ability to undergo physical examination with relative ease.

- SPs will stay longer in a program that grants them clinical faculty status. They should be allowed to organize into a group that will help serve their interests and offers social support.

Budgetary Considerations

- SPs should be paid for their training time, and most programs cost between $3,000 to $10,000 per year. They can be paid by the hour, examination, or teaching session.

- Most SP programs depend on funding from the department or the medical school.

- Absences should be anticipated or planned. SP substitutes should be kept on retainer.

- SPs should be given a contract that includes a description of responsibilities along with wages, benefits, and employee status. A staff appointment is preferable to a temporary assignment.

Use of Artificial Patients (Mannequins/Models)

Artificial patients can be used to teach and evaluate performance of a defined procedure or technical skill.

Strengths

- It allows for the isolation of and subsequent teaching and evaluation of discrete skills.

- It is consistent, accurate, predictable, and reproducible.

- It contributes to a relaxed learning situation.

- It provides opportunity to practice.

- There is immediate feedback, and no harm to the patient.

- Mannequins and/or models are generally inexpensive to purchase.

- Mannequins and/or models are readily available and accessible, and capable of repeated examination and use.

Limitaitons

- The student remains isolated from patients; there is no feedback or direction.

- This method lacks realism, including time constraints.

- Students may not be able to generalize skills learned this way and apply them to actual patient conditions.

"Teachable" moments

Teaching opportunities that are specific to each skill are predictable and may be planned through the use of artificial patients.

"How to" considerations

- Mannequins can vary significantly in price depending on their intended use, realism, and quality. They are readily available through supply offices that specialize in health care education materials.

- Mannequins have to be well maintained, protected from abuse, and not exposed to extreme temperatures.

- Mannequins have to be replaced every few years, particularly if they have been used regularly and repeatedly.

Conclusion

It is possible to supplement actual patients with simulated patients and/or with and artificial models. The latter should be used when it is impractical to work with real patients or when students are totally inexperienced.

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A good overview of the rationale for using standardized patients.

Beckmann C. *How to develop a GTA/Simulated patient program for teaching and evaluation.* Presented at the Ninth Annual APGO-Syntex Faculty Development Seminar; January 1992 Scottsdale, Ariz.

An excellent resource for designing a GTA program. The "how to" section above draws heavily from this document, which is available from the author, c/o Department of Obstetrics and Gynecology, University of Wisconsin, Madison, WI.

Beckmann C, Lipscomb F, Williford L, Bryant E, Ling F. Gynecological teaching associates in the 1990s. *Med Educ* 1992; 2:105-9.

Hasle, Josie L. *Gynecological Teaching Associate Certification Handbook.* January 1992. Presented at the APGO Conference; March 1993; Phoenix Ariz.

An outstanding reference for designing a GTA program and for training GTAs, this notebook of materials is available from the author, c/o Department of Obstetrics and Gynecology, Tulane University, New Orleans, LA.

Norman G, Muzzin L, Williams R, Swanson D. Simulation in health sciences education. *J Instructional Dev* 1985;8:11-17.

An excellent reference for comparing the various approaches of simulation.

Stillman P, Regan M, Philbin, Haley H. Results of a survey on the use of standardized patients to teach and evaluate clinical skills. *Acad Med* 1990; 65:288-92.

Useful for reviewing the components that make a standardized patient examination, written by the foremost leader on SPs.

Stillman P, Regan M, Swanson D, et al. An assessment of the clinical skills of fourth-year students at four New England medical schools. *Acad Med* 1990; 65:320-6.

A large-scale comparative study that used SPs to detect deficiencies in student performance that were not discovered by other methods.

Chapter Three
Alternative Methods for Teaching and Evaluationg
William Young, MD

A faculty member's options for didactic instruction go beyond lectures and assigned reading. The methods covered in this chapter include textbooks, problem-based interactive learning, audiovisual media, computer-based instruction, and objective standard clinical examinations. Some of these methods are better than others for teaching and evaluating clinical skills.

A. Core Textbooks

Textbooks specifically designed for an ob/gyn clerkship make it possible for the student to acquire core knowledge needed to satisfactorily complete a basic core clerkship, to function effectively in the clinical setting, and to pass the standardized national examination in the subject area. In order to appreciate the unique aspects of each individual patient's clinical presentation, a student needs to understand classic aspects of the disease process and presentation.

Strengths

- It provides the appropriate depth of subject matter for medical students.
- Students can go beyond reading assignments and read cover-to-cover.
- It makes it possible to attain a wide scope of knowledge of obstetrics and gynecology, with an emphasis on core knowledge.
- Books are the fastest way to transmit knowledge and are usually inexpensive.
- Texts may be targeted to APGO objectives.
- A self-evaluation component may be included.
- Core textbooks can comment on and give direction for performing clinical skills.

Limitations

- The knowledge acquired with books is not encyclopedic and is generally insufficient as background for providing patient care, particularly with regard to management issues.

- The content of most textbooks is too shallow to allow problem-based learning opportunities.

- The focus of reading tends to be on gaining minimal competence.

- Attention to references is limited when compared with other teaching methods that use them to greater advantage.

- Reading a textbook is a passive form of learning that does not promote self-directed education.

- Textbooks have a limited shelf life and require frequent updating.

B. Problem-based Learning Using Student-centered Educational Sessions

Problem-based learning essentially revolves around a case study in which students are expected to use their current knowledge, gather new information, analyze or synthesize the data, look for clues and patterns, develop hypotheses, and apply deductive reasoning. The student acquires the skills of information gathering and application, which are critical in clinical reasoning and management.

Strengths

- The method is familiar and exercises clinical reasoning processes involved in providing patient care (eg, problem identification, hypotheses, test, rank, etc.) without inconveniencing a patient or clinic.

- Critical thinking is required.

- The method stimulates active rather than passive learning.

- Retention is improved.

- Teachers become facilitators, and students become responsible for their own learning.

- Life-long learning habits are taught and, optimistically, captured.

- Team work is fostered, with its necessary components (ie, division of labor, communication skills, meeting deadlines and completing assignments).

- The method facilitates integration of basic science with clinical education.

- Realistic cases add fidelity and relevance.

- Case pre-selection allows for comprehensive coverage of basic curricula areas, as opposed to depending on which patients present to clinic.

Limitations

- It tends to be labor-intensive for faculty members. (The method works best when all participate in small groups, yet small groups require more faculty/facilitator time.)

- Case pre-selection and development are demanding tasks.

- Out of class independent problem solving time is needed.

- The method may require split sessions for 1) identifying the problem; and 2) reporting back.

- Important content areas may be skipped.

"Teachable" moments

The problem-based learning method is applicable to many settings (eg, classroom, simulations, rounds), and several formats (ie, individual write-ups, computer, clinical pathology correlation, etc.).

"How to" considerations

- Minimize lectures; use student case presentations instead.

- Use sequential cases, prepared in advance, on paper or via computer.

- Stop case presentations before diagnostic tests and results are obtained; ask students to identify problems they wish to discuss.

- Ask clarifying questions, such as "Would you explain that concept further?"

- Avoid premature narrowing of the hypotheses (there should be at least three items in a differential diagnosis).

- Poll the students during a session on differential diagnoses for the case under discussion; find out how they were reached, identify supporting/refuting information, and then rank the possible diagnoses.

- Bring basic science into the picture with discussions of anatomy, physiology, etc.

- Use mystery triggers (eg, photographs, x-rays, ultrasound pictures, video).

C. Use of Videotapes and Films

Educational videos can instruct learners independently through sound programs or supplement all other forms of teaching.

Strengths

- Real events can be viewed, with instruction about patients, procedures, and skills. Hard-to-produce events may be simulated. This then frees the student and the teacher from the restrictions that would normally occur in a clinical situation. For example, during an actual delivery, it is difficult to stop the activity to explain in detail about the placement of hands, timing of the episiotomy, etc. These can be readily done with a freeze frame on the video monitor.

- The technology is readily available (eg, video cassette recorders, tapes, cameras).

- The method is economical in terms of both time and expense (ie, decreased faculty time, inexpensive tapes).

- Producing educational programming can be simple using a laparoscope camera or network VCR.

- The focus can be educational (eg, instruction in anatomy, surgical knots, delivery technique, pelvic exam) or motivational (eg, grief, impaired physician, abortion).

- The method lends itself to both independent and group learning.

- There is versatility. Complete programs can be viewed, with or without group discussion. Selected short films can be used to trigger discussions for the remainder of the educational session. Interactive computer video programs offer participatory learning at the student's individual pace.

- It works for Sesame Street!

Limitations

- Watching television can be too passive and lack concomitant discussion.

- Producing educational videos can be expensive.

- Many programs are not educationally sound.

- The method usually requires emphasis and follow-up to be effective.

"How to" considerations

- Viewing a complete program should be followed by discussion, skill practice, or problem solving sessions. (Used in this manner, videos can add spice to bland offerings.)

- Videotapes can also be used to trigger discussion; for example, a film about conducting a patient history and physical can provoke discussion about inappropriate bedside manners or attitudes towards patients.

- Videos are a good way to introduce skills to large groups; for example, instruction in performing a pelvic exam prior to practicum, or in episiotomy repair before labor experience.

- Interactive computer video can be used for instruction in complex problem solving. Students can evaluate and solve the clinical problem without delaying an actual patient or slowing a clinic.

D. Computer-Assisted Instruction (CAI)

CAI and computer simulated patients are performance-based techniques used to teach or evaluate the student's diagnostic and patient management skills through an interactive process. By participating in this process, students can develop computer skills while also learning techniques of data inquiry for problem solving in the clinical arena.

Strengths

- It is easy to use, stimulating and readily available.

- There is less dependence on physician teachers/examiners, and the method reduces lecture hours.

- Can be used for self –instruction and self-assessment.

- "High-tech" simulations with video disc may appear very realistic.

- The cost has generally dropped over time.

- It is increasingly accepted as a valid testing method (ie, the National Board of Medical Examiner's Computer Base Exam).

- In the report, *Graduate Professional Education For Physicians,* CAI is encouraged.

Limitations

- It may lack fidelity (ie, actions taken may not correspond with real patients; cases may offer more cues and fewer options than real patients).

- The clinical reasoning skills it promotes may be very content specific.

- Correlations between simulations and other clinical competence measures have been mixed (modest to good).

- Reliability may be poor, especially when using only a few cases.

- The method may appear contrived and artificial.

- CAI programs are expensive and labor intensive to construct.

"Teachable"moments

A physician-supervised session with the student can stimulate problem solving; think aloud sessions can be insightful. Knowledge retention can be significantly enhance when a lecture or reading is followed by computer application of the material. Large screen projection can be used for group activities.

"How to" considerations

- Computer simulation cases are available from a variety of sources, including APGO and the American College of Obstetricians and Gynecologists.

- A dedicated computer would be a valuable resource for students wishing to practice the simulations during off-hours.

- Computers equipped with added features (ie, video or sound) enhance realism and are more engaging.

- Computer equipment and programs vary significantly in cost and will have to be justified as a major medical education expense.

- Computer hardware and software (or programming) must match. At this time, most programs are DOS-based (IBM compatible) or Macintosh-based.

- Multi-site networks would allow students and faculty in different locations to interact and share news and messages, problem solving (there can be a "case of the week"), and examinations.

E. Objective Structured Clinical Examinations (OSCE)

Students are observed performing varied clinical task and are evaluated using preselected measures. Standardized real or simulated patient problems can measure skills in physical examination; clinical data collection; interview style (ie bedside manner); diagnosis; management plan; patient education; and procedural technique.

Strengths

- Students are evaluated according to objective, pre-selected criteria that are summarized on a checklist. These criteria are communicated to them prior to the OCSE.

- It provides structured predictable experiences for each student and measures that student according to a yardstick common to all.

- There is a strong clinical focus. Complex activities key to functioning in a clinical setting can be tested (eg, technical and clinical skills, knowledge base, personal attitudes, and approach to patients).

- Short or long stations are possible employing this method. (This form of clinical evaluation is particularly reliable with a large enough number and variety of stations.)

- There is high content validity in areas measured.

- Immediate feedback is given by patients.

- The emphasis is on ambulatory medicine.

- This approach can be used for teaching as well as for evaluation of the student and the clinical education program.

Limitations

- It is time consuming and expensive to start up and continue, requiring extensive planning.

- "Biopsy" of students' abilities is limited by time and station numbers.

"How to" considerations

For the short station end of clerkship OSCE

- The OSCE usually should take place in an office setting and be scheduled when clinic is closed.

- Logisitics;
  a) The length of each station should be the same (10 to 15 minutes) to permit rotation of the students when the bell rings.
  b) Having one station per student will keep all students occupied (10 students = 10 stations). This will also set the exam length (ie, 10 stations x 10 minutes/station = 100 minutes).

- Patients can be real or simulated; sources include gynecologic teaching associates (see previous chapter), office staff, residents, senior students, nurses and certified nurse midwives, trained actresses simulating patients, or prenatal patient volunteers.

- Station development consists of emphasizing basic, important, common problems. Typical stations would cover pelvic examination; breast examination and self breast exam instruction; prenatal 30-plus week examination; vaginitis (diagnosis and prescription-writing when test results are unknown); surgical knot tying (a demonstration of tying and suturing skill); early pregnancy bleeding (data collection, explanation, and treatment); birth control pills (patient instruction); and menopause (history-taking and recommended treatment). Various paper stations would administer short answer, multiple choice, or essay questions to help fill in the schedule.

- Faculty must develop simple checklists for each station. Each task must be clearly stated and able to be done in the time permitted. The more realistic it is, the better.

- Feedback at each station or at the end by checklist review is appreciated by the students. In addition, room for comment by the simulated patients is helpful for evaluations.

For the comprehensive clinical competency OSCE

This full-day OSCE examination covers numerous clerkships and is commonly administered to provide a summation of clinical competency. Typically it incorporates long stations, each lasting 30 to 45 minutes.

Further Reference

Video/Film Sources

American College of Obstetricians and Gynecologists Audiovisual Library. Contact the ACOG Distribution Center, PO Box 4500 Kearneyville, WV 25430-4500; telephone (800) 762-2264.

Association of Professors of Gynecology and Obstetrics, 2130 Priest Bridge Drive, Suite 7, Crofton, MD 21114; telephone (410)451-9560.

Davis and Geck, Surgical Film and Videocassette Library, 1 Casper Street, Danbury, CT 06810.

Health Science Consortium, 201 Silver Cedar Court, Chapel Hill, NC 27514; telephone (919) 942-8731.

Textbooks

APGO Undergraduate Education Committee. *APGO Medical Student Educational Objectives.* 8th ed. Washington, DC: APGO, 2004

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Interactions—Computer Aids for Clinical Decision-Making. American College of Obstetricians and Gynecologists. Contact the ACOG Distribution Center, PO Box 4500, Kearneyville, WV 25430-4500; telephone (800) 762-2264.

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Chapter Four
Evaluating Clinical Skills and the Clerkship Program
James J. Sowash, MD

Evaluation serves many purposes in an ob/gyn clerkship program and can be accomplished using several different methods. The method of evaluation should be targeted specifically to the knowledge, skills and attitudes you want students to have. The type of testing will influence students' approach to learning. Their learning of knowledge and skills will vary according to the criteria of competence used at the end of the clerkship (eg, medical knowledge, data gathering skills, clinical reasoning skills, performance skills, clinical competence, or professional attitudes).

Purpose of Evaluation

In general, the clerkship evaluation system should assess students' realistic problem-solving and professional behavior. There are additional reasons why evaluation can prove useful, such as to provide feedback to students, and faculty, measure strengths and deficiencies of curriculum an faculty, and improve student performance in the clerkship program.

Programs should also include self-evaluation of professional performance. This can be encouraged through case discussions with attending staff, resident staff and fellow students, and is also available through the use of case books, video presentations, and electronic computer simulations.

Reasons for Providing Feedback

The opportunity to give and receive feedback and constructive criticism should figure into any evaluation method that is selected. Prompt and constructive feedback increases the value of evaluation. Feedback during a clerkship allows time for improvement before the final evaluation. Precise feedback allows for appropriate remediation. The following guidelines apply:

- Feedback should be given by someone who has a personal, constructive interaction with the student.

- A non-threatening approach should be used to encourage a constructive response.

- Feedback should include areas of competency as well as incompetency.

Psychometric Characteristics of Evaluation Methods

Validity

This describes the extent to which the evaluation method measures what it is supposed to measure. There are several types of validity to consider, although all of them could be considered under the category of "construct validity," that is, the extent to which the student's score on a test or evaluation instrument can be considered a measure of the attribute, or construct, being evaluated.

"Content validity" is the degree to which student scores contain a representative sample of the knowledge and skills to be learned. If, for example, an examination purported to assess the student's ability to take a complete history, and the sexual history were omitted, the content validity of the examination would be suspect.

"Criterion-referenced validity" refers to the relationship of the test with a criterion that is presumably a more direct measure of the attribute being assessed. There are variations of criterion-reference validity: concurrent and predictive. "Concurrent validity" refers to the relationship with another criterion on which the student is tested at the same time. For example, with regard to listing the steps in performing a pelvic exam, a student's performance on the test could be compared with observing a student actually doing the examination. "Predictive validity" describes the extent to which the test results correlate with future performance. The predictive validity of the National Board of Medical Examiners (NBME) subtest for students could be assessed by correlating students' scores with their scores on part II of the United States Licensing Exam (USMLE) that they take at the end of medical school.

Reliability

This is the expression of reproducibility, ie, the extent to which the test would be consistent in measuring the same event on different occasions. While reliability is not as important as validity, it is still a concern.

Since evaluation of a student's clinical skills involves the evaluation of the student interacting with a patient, it involves several sources that can affect the reliability of the assessment. A good evaluation program will strive to keep the evaluation methods and patient variables from interfering with getting a reliable measure of student performance. Reliability measures the attempt to remove all variables except the student.

One source of unreliability in both written and performance examination is not having enough questions to get a good measure of the student's knowledge of a given area. Another major source of unreliability is inconsistency in grading—where the scorer does not use a reproducible method of grading. In any observation of student performance, using different

patients with each student represents another potential threat to the reliability of assessing the student's skills.

Practicality

This refers to various requirements for administering the evaluation method, eg, staff, cost, time, and accommodations. For example, the "practicality" of a clinical examination refers to the number of students to which it may be administered at once, the number of staff required, requirements of space and time, its cost, and how its results will be used. In general, very expensive evaluations may be impractical for all but very serious evaluation decisions.

Types of Measurement

Criterion-referenced Measurement

This refers to an evaluation design in which each student's performance is compared to a criterion, rather than to the performance of the other students. A criterion could be something like "performing all the steps in a complete pelvic examination." The selection of items for a criterion-referenced examination should reflect the criterion. In criterion-referenced measurement, all of the students could conceivably get all of the items correct. Such a measure does not allow fine comparisons between or rank ordering of students, but the test could still serve its purpose of determining competency or incompetency.

Norm-referenced Measurement

This type of measurement not only evaluates students, but also permits the comparison of students with each other for purposes of rank ordering. Multiple choice tests achieve this very well. If the grading system requires ranking the student scores (such as by letter grades of "A", "B", "C", etc), then some type of norm-referenced assessment should be employed.

Methods of Evaluating the Clerk

Evaluation methods, as used in medical education, usually progress from the abstract to the concrete. The following listing more or less replicates that pattern, also discussing th purpose, strengths and limitations of each method.

A. Multiple Choice Questions

These can measure medical knowledge, which is a prerequisite for clinical competence. They do not measure other aspects of clinical competence, however.

Strengths

- It has the potential for high validity with respect to knowledge assessment, but has low validity with respect to other aspects of clinical competence.

- It possesses a high reliability for knowledge assessment because most variables can be removed.

- It is very practical, and can be used to test large numbers of students in a short period of time at reasonable cost.

Limitations

- Strictly factual questions may not test understanding or application of knowledge.

- It gives overt clues by displaying available answers.

- It lacks reliability for evaluating clinical skills.

B. Written Patient Management Problems

This method usually poses a higher order of questions than the multiple choice test in that it restricts questions to clinical situations.

Strengths

- It can offer high level of content validity when criterion referenced with standardized cases.

- It is practical and can be used to test large numbers of students in a short period of time at a reasonable cost.

- The student is asked to make a series of choices of actions and can receive feeback.

Limitations

- There is a low level of validity for aspects of professional attitude, history taking and physical examination.

- It neither, evaluates nor allows the student to perform clinical skills.

- Because it is a multiple choice examination, it gives overt cues.

C. Modified Essay Questions

This type of question usually presents a case scenario and requires students to write their answers rather than select them from a given list of answers.

Strengths

- When properly constructed, there is a high level of validity for measuring the nature and level of competence.

- Because scoring criteria are explicit, it is potentially highly reliable.

- It can test a variety of clinical competencies, including pattern recognition, hypothesis generation, data gathering, analysis, and planning, and can monitor management.

- It does not confound students' verbal skills with clinical competence.

Limitations

- It is not very practical, since scoring requires large amounts of physician time and that significantly elevates cost. This limitation may be alleviated with computerized testing.

- It does not test history taking, interpersonal skills, or professional attitudes.

D. Computer-based Simulation (CBX)

This tests clinical judgement and skills through uncued electronic simulation of clinical situations.

Strengths

- Simulations can display changes in the patient over time.

- The National Board of Medical Examiners is pilot testing CBX (or CBT) at 60 medical school locations. Intelligent Images, of San Diego Calif., has created an interactive videodisc called DxTER that uses no words, only images. TIME demonstrations (offered by the National Library of Medicine in Bethesda, Md) is a voice-directed system similar to DxTER.

Limitations

- It is still in the developmental stage, and validity and reliability are unknown. The number of cases currently available are extremely limited.

- Practical considerations include the need for space (it requires a designated area), equipment, and time.

- It is expensive to develop, but over time may lower costs and reduce the need for physician time.

E. Oral Patient Management Problems

This type of examination can test problem-solving skills and relevant medical knowledge. It may be constructed around established cases (with scoring criteria) or based on each individual student's case list.

Strengths

- It can have good validity n testing analytic ability, especially clinical reasoning.
- It can help to identify those students greatly above and below the norm.
- It allows candidate to explain answers in depth.
- The examiner can probe students' answers and examine in depth.

Limitations

- Personality of the examiner, student, or both, may interfere with assessment of clinical skills and thus reduce reliability.
- It assesses only limited aspects of clinical competence.
- Without clear criteria for correct responses, grading can be subjective.
- Time constraints usually prohibit broad sampling of questions, which can limit content validity.
- It requires large amounts of physician time.
- It can be very stressful for students.

F. Clinical Evaluations over Time by Faculty and Residents

Students are evaluated by direct observation in actual clinical situations over a period of time.

Strengths

- If criterion-referenced, this method can have high validity.
- It is based on clinical interactions with patients, nursing staff, residents and faculty.
- It encompasses not only knowledge and problem solving, but also the professional traits of honesty, responsibility, team concept, reliability, initiative, etc.

Limitations

- Reliability can be low for two reasons: 1) exposure to patients is extremely varied among a group of students, and 2) faculty members and residents differ on what

constitutes clinical competence and professional behavior. Use of a standardized form can help (see Appendix 1).

- Most faculty may not actually observe the students' actual performance.
- Responsibility for this type of evaluation is frequently delegated to residents.
- Most evaluations by faculty are based on verbal skills in presenting cases, which may hide shortcomings of technique or lack of accuracy. Evaluation by residents tends to reflect the student's personality, as well as clinical ability.
- It is a method that frequently results in a collection of "superlatives" if evaluators are not well educated in the evaluation process.
- Students may perform differently in the presence of different evaluators.
- Achieving practicality is difficult because of the large amount of time necessary to carry out observation.

G. Peer Evaluation

This method consists of students' evaluation of one another's skills.

Strengths

- If limited to determination of competency or incompetency, it may identify "outliers" not found using other means.
- It frequently identifies those students who do not work as hard as their peers or who are not respected by their peers.
- It introduces students to the concept of professional responsibility for and evaluation of fellow physicians.

Limitations

- It can be a popularity vote.
- Reliability may be poor due to too much variability and inexperienced raters.
- It is difficult to administer from a practical standpoint.
- It runs the risk of destroying cooperative spirit of students.

H. Objective Structured Clinical Exam (OSCE) Without Standardized Patients

This examination tests data interaction, hypothesis generation, analysis, and patient management. Usually it involves interpretation of a clinically generative piece of data (eg, an electrocardiogram, fetal monitor strip, x-ray, labor curve, etc.)

Stengths

- This method achieves high validity in areas measured, but does not cover all components of clinical ability (eg, history taking, physical examination, professional attitude).

- There is a high reliability if a sufficient number and adequate breadth of cases are employed.

- It is much easier to administer and grade than an OSCE with standardized patients.

- It may be used by a department as a transition step from traditional testing to OSCE with patients.

Limitations

- Scoring by individual examiners does introduce variability.

- Practicality is limited; this method requires more space and preparation than a standard written examination.

I. Objective Structured Clinical Examination (OSCE) with Standardized Patients

This examination evaluates the student's interpersonal skills, communication skills, data gathering skills, clinical reasoning, clinical judgment, and professional attributes in a simulated patient encounter. It involves observation of students examining several patients. Usually a student will not do a complete examination on each patient, but might interview one, perform a part of the physical on another, or provide patient education, etc. Standardized patients are individuals trained to portray particular histories or physical data. Their training ensures reproducibility across students. Grading is usually done by an observer or the standardized patient filling out a checklist describing each student's performance.

Strengths

- If there are an adequate number of patients, high content validity may be present.

- There is high reliability, provided the patients are well trained and the observers use the appropriate criteria.

Limitations

- It is less practical, requiring more space, preparation and time than other methods (although the smaller the group, the less time needed).

- Planning and start-up costs are expensive.

Methods of Grading

Grading has many purposes including those of motivating the student, ranking him or her relative to others in the class, determining competence or incompetence, evaluating the effectiveness of the clerkship experience, providing a learning experience in and of itself, and directing remediation of clerkship and student. It is the purpose behind the evaluation that will determine both the method of testing and the method of grading to use. In general, criterion-referenced evaluation methods will be effective in determining a student's competence or incompetence, while norm-referenced methods discriminate between students and enable them to be rank ordered.

Students should be informed of the type of grading system employed in the clerkship program. The most accurate assessment of a student's competence will be obtained by combining results of cognitive and clinical skills evaluation methods. The eventual components and relative weight should be determined by each institution to reflect their respective faculties' objectives. Methods of determining a final grade have a wide range. Appendix 2 illustrates a sampling of six different approaches to calculating a student's final evaluation.

Rank Grading

This consists of a letter grade ("A", "B", "C", etc), a number grade ("79%", "85%", etc, or a descriptive grade ("Honors", "High Pass", "Pass", "Low Pass", "Fail"). Its advantages are that it makes rank ordering possible, which can be to a student's benefit when applying for competitive residencies. Also, it may motivate the student to make a greater effort. Disadvantages are that it may excessively increase competitiveness among students and decrease team concept.

Pass/Fail Grading

The primary concern of this type of grading system is determining competence. It can increase cooperative spirit among students, but is of no help in rank ordering students, and therefore may prove disadvantageous to applicants for competitive residencies.

Reporting Evaluations

This type of system usually includes a grade and comments about cognitive and clinical skills. Summative comments typically consist of a descriptive summary of a student's abilitites and usually are the basis for the dean's letter, while formative comments generally serve as a feedback method for student development and should contain enough detail to help the student remediate deficiencies (see Appendix 1).

Remediation of poor performance

In order to achieve remediation, incompetence must first be identified in one or more of the areas of clinical competence: data base, history taking, physical examination,

hypothesis generation, technical skills, professional attitudes. Remediation should be tailored to the area(s) of incompetence identified, and may consist of one or more of the following methods:

- Personal study using texts, casebooks, journal articles, videos, etc.
- Observing others already competent in area where a deficiency has been identified.
- Practice using other students as tutors.
- Professional counseling.
- Working at another site, or with another physician especially skilled in evaluating and teaching medical students.
- Tailoring a clerkship to a student's special needs.

Evaluating the Clerkship Program

Evaluation of the clerkship serves the same purposes as student evaluation. It may serve to determine the success or failure of a department's teaching mission in cognitive and clinical areas, rank the department relative to other departments and to previous years, measure the motivation of faculty, and reinforce or remediate that as appropriate, influence faculty's approach to teaching, insure that the clinical experience meets APGO clinical objectives, and insure that the clinical experience meets institutional objectives with respect to the ob/gyn curriculum. In general the use of multiple sources of evaluation data will help to ensure a broad-based evaluation of the clerkship program. Creation and maintenance of a data base facilitates and preserves previous successes and failures and serves as basis for planning the future direction of clerkship program. A computer can be used to store and analyze all information on an annual basis. Development of charts and graphs will show trends.

Methods

- Examination of student evaluation can serve to determine strengths and weaknesses of teaching and evaluation methods.
- Comparing results of each class to previous classes, other departments, and national board exams, enables a department to compare itself to standards beyond itself. (This requires maintaining an appropriate data base.) Unfortunately this method may be dependent on written exams (ie, shelf exams or United States Medical Licensure Exam "USMLE") which do not evaluate clinical skills.
- Evaluation of resident and attending faculty by students can measure students' perceptions of their effectiveness as clinical instructors.

- Peer review provides another perspective on teaching ability and can enable faculty to help one another.

- The number of students selecting ob/gyn as a specialty and their success in residency can be probed with a follow-up questionnaire to residency programs. These data can be used to measure the success of the clerkship in motivating and preparing students for careers in ob/gyn.

Remediation of Faculty Skills and Motivation

For this vital task, any or all of the following tactics may be helpful. The first three approaches are under the direct control of the clerkship director.

- Change lecture topics vis-à-vis lecturers to maintain current knowledge and enthusiasm.

- Include all faculty in clerkship decisions.

- Lie in wait to observe faculty doing a good teaching job and immediately give positive feedback.

- Plan an annual "education day",and an annual report on clerkship program.

- Provide opportunities for faculty to learn about teaching, evaluation, and other areas in education.

- Reward teaching excellence with positive feedback (including salary increases and other awards).

- Require all members of the department to participate in continuing education of some sort (eg, APGO attendance, academic journal club membership, participation in Toastmasters Club, etc).

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Chapter Five
Generating Faculty Support
Mark Nichols, MD

The process of solving the problem generates ownership of the solution. Therefore, successful solutions to teaching evaluating clinical skills in ob/gyn clerkships depend on faculty involvement in designing the clerkship program and with teaching issues in general.

Developing and Maintaining the Clerkship Program

Several factors are key to development of a successful clerkship program:

- There should be enthusiastic support from the department chairperson and senior faculty members.

- Teaching and other educational endeavors should be identified as critical factors for promotion within the department and the institution.

- Department resources must be assessed, including financial resources, physical restrictions in clinics, and, probably most important, clinical faculty and staff.

- It is necessary to tap into the strengths of your own department. (For example, if there are an abundance of patients but few teachers available, faculty may need to have their commitment to teaching emphasized. When there are abundant teachers but few patients, the focus should be on maximizing "teachable moments".)

The requirements for maintaining a successful program, in addition to the above, consist of the following:

- There must be a designated clerkship director and that individual must be able to commit adequate time to supervising the clinical education and have the power base to negotiate for clinical staffing support.

- To evaluate teaching skills, an active process should be developed that includes self-evaluation by teaching faculty, peer evaluation, and student evaluation. All of these evaluations should be used to develop teaching skills.

- The program should enjoy the active support of the clinic and nursing staff, who may prove instrumental in giving a positive impression to patients of the student's role.

- Regular frequent meetings and communication should take place between the clerkship director and the clinical teaching faculty for the purpose of reviewing curricular design, clinical assignments, and exchanging feedback on specific student (both good and not-so-good).

- There should be similar interaction (eg, regular meetings and communication) between the clerkship director and nursing staff as a means of promoting two-way interaction and exchange of ideas.

- The importance of student clinical evaluations must be emphasized to teaching faculty as a means of grading students, providing them with *constructive* criticism, and identifying strong and weak students for future residency placement. Clinical evaluations have the potential for evaluating the non-cognitive skills critical to a physician, unlike written standardized exams (see Chapter Four).

Promoting Excellence in Teaching

It has been said that "to teach is to learn twice". The following section identifies various teaching staff and their potential strengths and limitations, and shows how to underscore a department commitment to teaching.

Residents as Teachers

Strengths

- The understanding that they will be expected to teach stimulates residents to gain a thorough knowledge of subject matter.

- Residents can gain educational experience and skills for potential future roles as academicians, patient advocates, community health educators, etc.

Limitations

- The time commitment required for teaching slows the patient care system and educational process.

- Institutional pressure to be profitable can undermine both the commitment and effort to teaching (ie, in favor of admitting/seeing more patients). Residents are particularly sensitive to the time pressures in clinical care at an academic site—the longer they take in clinic, the less time they will have at home.

"How to" considerations

- Emphasize residents' teaching roles during recruitment.
- Include teaching performance as part of residency's educational objectives and regularly evaluate it.
- Encourage or require residency staff to participate in medical student lectures or development of clinical skills curriculum. In addition, ask residents to explain clinical teaching points to medical students on rounds.
- Involve residents in "sign-off" system for documenting student skills; however, do not rely primarily on resident evaluations of medical students for determination of their grades.
- Hold an annual resident workshop to a) provide feedback from medical students and faculty on the residents' teaching performance, b) discuss teaching and learning techniques, and c) elicit residents' perceptions of the quality and weakness of the clinical curriculum.

Junior Faculty as Teachers

Strengths

- Different forms of faculty-student contact are possible (ie, one-on-one teaching, ward rounds, and small group discussions).
- It provides data for the teaching dossiers of faculty members.
- It plays a role in recruitment of potential residents from student body.
- It allows for closer evaluation of students by the faculty.

Limitations

- Teaching takes time from other faculty pursuits, such as those activities that may play a more active role in promotion (ie, research or generating service dollars).
- This additional role may decrease faculty's efficiency in the clinical setting.
- A few patients may be uncomfortable with student involvement.

"How to" considerations

- Senior faculty who teach well should serve as mentors and assist junior faculty in lecture development; observe their clinical teaching sessions; and participate by conducting joint teaching rounds.

- A system for documenting teaching performance should be created. In addition, both positive and critical feedback should be encouraged on an informal basis.

- Faculty should be assisted in developing a dossier of teaching performance for future promotion and considerations. (See section on "Rewarding Excellence in Teaching," below.)

- Awards should recognize excellence in clinical teaching.

Certified Nurse Midwives (CNM) and Nurse Practitioners (NP) as Teachers

Strengths

- It complements the instruction of the residents and physician faculty members.

- It orients patients to an alternative to the traditional physician model.

- CNMs and NPs may have more structured schedules that permit more time for clinical teaching.

- The clinical responsibilities assumed by mid-level providers are often the exact ones in which students need to demonstrate competence, eg, normal obstetrics, family planning, well women's care, etc.

Limitations

- If a program does not have an established CNM service, it is time-consuming and often stressful to establish one and integrate it with a residential service, especially for intrapartum care.

"How to" considerations

- Teaching of basic skills can consist of a) didactic methods to instruct about normal processes, b) students' attendance at and participation in low-risk deliveries, and c) student staffing at family planning clinics, well women clinics, etc.

The Department Commitment to Teaching

Excellence in teaching depends on a department-wide commitment to teaching in addition to individual performance.

"How to" considerations

- Retreats should be organized to focus on teaching aspects of the clerkship program. These should review educational objectives; clinical teaching situations; testing and evaluation processes; long term planning; and the commitment of senior faculty and chair to clinical teaching.

- There should be regular review of the teaching system at faculty meetings.

- Medical education should be used as a topic for Grand Rounds; the purpose of this will be to energize teachers and inform them of new developments, and to demonstrate the department's commitment to excellence in teaching.

- A library of videotapes can demonstrate teaching methods.

- The department chairperson should be committed to the premise that all faculty are required to participate in teaching issues.

"Teachable" moments

The following methods encourage faculty to interact with students, which may lead to additional opportunities for teaching and learning.

- Assign faculty to provide "solo preceptorships" for students in private clinics; advantages include one-on-one contact and closer evaluation of student performance.

- Have faculty instruct groups of students in labor and delivery for efficient use of teaching time.

- Requiring faculty to participate in a "sign-off" system for documenting student clinical competency in various areas (eg, performance of technical procedures, history-taking, and physical exam).

Building Commitment and Ownership at Clerkship Teaching Site

"How to" considerations

A commitment to student involvement among nursing staff and clinic personnel is critical to the success of the clerkship program. In both clinic and hospital settings, this can be achieved in the following ways:

- Schedule student with resident who has continuity with a group of clinic patients.

- Plan on student involvement in figuring average times for clinic visits.

- Help orient students to the rotation with a presentation such as "Labor and Delivery Survival Skills", "Ward Survival Skills", or "Clinical Survival Skills" (eg, a review of pelvic exam skills), where the expectations of nurses, residents and faculty are explained, and students are told how they can be most helpful to the patient care team.

- Use students as labor support persons in Labor and Delivery; this provides exposure to course of normal labor and allows the student to assume a purposeful role.

- Integrate students into the patient care team through various mechanisms: Have a policy of students being first in to see new patients; have new patients presented to senior residents by students; institute "pre-rounds" allowing students to present patients and write notes on work rounds; and allow students to present patients at attending rounds.

  Note: The tone of introductions by clinic and nursing staff is of tremendous importance. Compare the following introductions (1) and (2):

  1. "The first person in our team to see you will be our medical student. The information that he/she obtains will be important for the doctors who will be seeing you immediately after the student is finished."
     This introduction builds patient confidence by validating the medical student's involvement in his/her care.

  2. "You don't really want a medical student to see you, do you?"
     This introduction provides no encouragement for the patient-student interaction.

- If students are not allowed to write notes in the chart, then have them complete mock write-ups for later review by faculty or have students write notes on different color paper which is later purged from the chart.

- Encourage involvement of nurses in optimizing learning opportunities. One benefit is their close knowledge of patients. If a nurse realizes that one patient has an interesting history and is able to give a good verbal report of her symptoms, the student can be strongly encouraged to take more time with her. Conversely, if a patient is known to be a difficult or poor historian, the nurse may be able to direct the students into an interactive style that will make them utilize their time most efficiently.

- Nursing staff are also in a good position to provide useful feedback (formal and informal) on student performance, thanks to their close observation of patient-student interaction.

Rewarding Excellence in Teaching

Building a successful clerkship program (or for that matter any educational program) requires that the department chair recognize the energy devoted to teaching and assign teaching faculty salaries and department stature that reflect their relative worth. The following elements are essential:

- The department must have a system to track teaching performance, especially clinical teaching, which is often difficult to track.

- The relative worth assigned to teaching must be comparable to that for research or service activities.

Evaluation of Teaching Performance

This can occur through self-evaluation, peer evaluation, or resident and student evaluation. Evaluation methods specifically designed to measure teaching effectiveness can be supplemented by other material (eg, evaluation forms from courses, lectures, and rotations, and quantitative comparisons with peers, ie, student grades or examination performance done anonymously). Ideally, evaluation methods should remain useful as a measure of increasing skill and ability to teach.

Peer evaluation

- Constructive criticism from peers is powerful and can provide valuable data for promotion consideration.

- This method requires a commitment from faculty to observe each others' teaching.

Resident and student evaluation

- Medical student and resident feedback may differ, and can be compared and contrasted.

- Course content, lecture style, clinical experience, and interpersonal interactions should all be monitored.

- Try to extract both positive and negative comments. (Consistent positive feedback can be useful data for promotion considerations, while consistent negative feedback provides important ammunition for the clerkship director in trying to change faculty behavior.)

- It may be useful to establish a "resident teaching award".

Promotion and Tenure

While the role of clinically active faculty is increasingly important, there still may be a tendency on promotion and tenure committees to view "clinical tracks" as second class. It must be reemphasized that teaching should be viewed equivalent to research and service activities in terms of its relative contribution to departmental success. Several medical schools have incorporated a "teacher-clinician" track (eg, Harvard Medical School, the University of Washington Medical School, Dartmouth Medical School, and the University of California at Los Angeles Medical School).

- A dossier on teaching performance should be developed for promotion consideration. A consistent way to document clinical teaching responsibilities, effectiveness, and expertise needs to be developed. (See Appendix C.)

- Peer and student evaluations should be used to document excellence.

- Other elements to evaluate teaching effectiveness, ie, what to put in the teaching dossier, must be determined.

Measuring Teaching Contributions

Assignment and evaluation of a "normal" teaching load should take note of various types of interactions (eg, lectures, seminars, clinics, or inpatient encounters). In addition, examples of "teaching effort" should include all of the following: preparing course outlines, syllabi, and lecture handouts; preparing a videotape or audiotape of presentations; and observing presentations by colleagues for peer review purposes.

Programs should differentiate between medical student and resident teaching responsibilities. Teaching "contributions" comprise all of the following types of activity:

- Tutoring and supervision

- Teaching-related administrative duties, whether they consist of administering a clerkship program, directing a residency program, or running a basic science course

- Participation on committees at the departmental, institutional, and national level

- Time devoted to teaching related innovations and publications

- Continuing medical education (with the number and type of presentations, audience, and sponsorship documented)

- Faculty or resident workshops

- Community teaching

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Chapter Six
Administration of a Clerkship Program
Lamar Ekbladh, MD

To effectively direct any educational program, one needs committed resources. A financial plan and support personnel lend credibility and stability to the educational efforts of a department or institution. The need for clerkship administrative support is similar whether teaching skills, knowledge, or attitudes.

Administrative Support Staff

Role Considerations

- An individual should be designated as the administrative person responsible for all aspects of the student clerkship program. This lends continuity and recognition of the importance of the students.

- The greater the visibility of this individual among the students, the better. It is especially important that he/she be perceived as the student's advocate.

- The greater the visibility of this individual to the faculty and staff involved in teaching, the better also. This is especially important for the clinical personnel. Scheduling of clinical activities can be complex, and tends to run more smoothly if there is open communication between clinical staff and the clerkship office. Also, if clinical staff see the clerkship office as being supportive and receptive, they are more likely to take the extra effort to teach and evaluate. Evaluation on non-cognitive traits is almost totally dependent upon the clinical education program.

- Administrative duties will include scheduling; producing prompt, clear and accurate reports (these, too, indicate a commitment to students); coordinating preparation, scheduling, administration, and grading of examinations; creating a "network" with other administrative personnel; and maintaining an educational folder for each student (with the information maintained accurately, easily accessible, but with confidentiality preserved.)

A Division of Education

Creation of a division of education demonstrates departmental support for education and helps to define teaching as an appropriate academic pursuit. Resources can be used for all levels of educational development, including clerkship, resident, fellow, and faculty education, and education of other paramedical staff. This, in turn, may give the clerkship director more ability to implement changes in the clinical education program.

Role Considerations

- Set up an undergraduate education committee within the department and assign to it the following tasks: 1) assess educational resources; 2) monitor success of student program and develop strategies for improvement; 3) develop and monitor curriculum; 4) develop and monitor evaluation process; and 5) promote resident and faculty teaching skills through continual feedback, workshops, and career development.

- Provide career counseling to students at all levels through one-on-one counseling; establish student ob/gyn interest groups or clubs for students; assist with all aspects of residency application and interview, including providing a program description; and assist with both the curriculum vitae and personal statement requirement.

- Develop a committee of course directors as part of demonstrating institutional support both to faculty and students. The third year curriculum should be seen as a continuum where ob/gyn is but one link in the chain. Important tasks to pursue on the committee include: a review of curriculum - 'Who is teaching the breast exam,' for example, and, 'Are students on other services getting basic screening data (eg, last menstrual period, last pap test, etc) on female patients; student representation; exchange of ideas and collaboration on programs; and sharing of information necessary to assist problem students (ie, both students coming onto your service and those finishing it).

- Have and/or share with other departments a professional (PhD) educator for the input and exposure to graduate medical education, and a medical education consultant service under the department or medical school. These resources can aid in troubleshooting problems in clinical education and help develop curricular innovations. This is a skill that will become more important as clinical education programs need to respond to new health care delivery programs.

Allocation of Resources

A. Faculty Scheduling

Time is probably the most precious commodity in a clerkship program. The day cannot be lengthened and demands for financial productivity compete with educational needs. Departments and institutions must respect the time needed to have a quality educational program. Individuals must be dedicated to teaching and have sufficient protected time to accomplish the following instructional objectives:

- Time for rounds and bedside teaching within the inpatient setting

- Time to proctor and educate students in the outpatient department. (This is perhaps the most costly venture in the clerkship program, as both the room and the faculty used for teaching tend to slow patient turnover.)

- Evaluation of students using methods described in the last chapter, eg, oral exams and OSCE.

- Student counseling and admissions interviewing.

B. Staff Support

The budget should be sufficient to hire someone with the appropriate qualifications and experience to perform as an administrator at the required level (see beginning of chapter) and interact appropriately with other staff and departments.

C. Space Requirements

Space also is a precious commodity. Allocation of space for the following uses demonstrates support for the educational program:

- Conference area. This should be comfortable, have adequate audiovisual support, and be consistently available for use, with the highest priority given to student education.

- Study/educational area. This space should be accessible, comfortable, and inviting to use. There should be room for books and other educational materials. Consideration should be given to renting or loaning books to students.

- Call room/locker space. This, too, should be comfortable and "near the action."

- Clinical teaching area. This might include mock outpatient department for instruction using gynecological teaching associates, models, etc, as will as dedicated outpatient rooms for use during outpatient sessions.

- Food area. Students function best on a full stomach.

- Parking for students and clinical faculty

D. Educational Materials

All of the following should be taken into consideration in the allocation of educational resources:

- Books. These should reflect the scope of obstetrics and gynecology, yet also include general texts of all specialties. They should probably assist the student in functioning in the various clinical areas (see Chapter Three).

- APGO Instructional Objectives. This is an excellent core curriculum guide for students.

- Computers. Appropriate computer support should be available for learning (by using the ACOG *Interactions* series, APGO QUIZ, or another program, for example), as well as for report preparation, research, literature searches (see Chapter Three), and e-mail.

- Audiovisual materials, especially videotapes demonstrating procedures (see Chapter Three).

- Professional patients for pelvic exams (see Chapter Two).

- Course syllabi and guides. Especially useful are institutionally specific guides to writing of hospital notes, clinic special procedures, etc.

- Student logs or patient encounter book.

- Availability of photocopying facilities/equipment.

- Teaching models (pelvis, breast, and infant)

E. Evaluation

Resources must be allocated for the following activities:

- Examinations (for example, the Board shelf exam; departmental exams such as the APGO quiz bank; oral exam, taking into account the fact that faculty time devoted to this is expensive; OSCE; and student presentations). (See Chapter Six)

- Clinical evaluation forms

F. Research

Great teaching programs can be distinguished from those that are simply good by the extent to which they encourage curiosity and the inquisitive mind. Therefore, it may be useful to:

- Find sources of seed money (departmental, institutional, hospital, commercial)

- Develop a departmental patient data base using computer support. (This becomes a resource for research projects, and for teaching, allowing students to make useful connections between current patients and previous patients.)

G. Continuing Medical Education

- Key faculty and residents should be sent to meetings that emphasize educational topics, such as the APGO Faculty Development Workshop, APGO/CREOG Meeting,

or the American Association of Medical Colleges meeting with workshops for clerkship directors given by the Alliance of Clinical Educators (ACE).

- Membership in APGO should be strongly encouraged.

H. Teaching Awards

- Awards recognizing of excellence in teaching should be developed for full-time clinical faculty and residents. This provides a visible "pat on the back." Determinations of merit can be made using clerkship student evaluations of teaching faculty and/or be direct votes of residents. Plaques, money, books, gift certificates, etc, can serve as prize materials.

- An APGO Award is supplied yearly without charge from APGO to any department requesting it.

- Sponsorship can be sought for special awards from departments, schools, and/or commercial entities (such as pharmaceutical sponsors).

Chapter Seven
Trouble-shooting A Clerkship Program with Ideas that Work

(The following cases briefly illustrate one or more points from the previous chapters.)

1. Flow Problems in Ambulatory Clinics

Problem

Students disrupt the work flow in the clinic. Students working in the ambulatory setting can be problematic. They slow down the pace, and their patients have to wait longer in the examination rooms than other patients. This both frustrates patients and ties up the rooms. In addition, residents often cannot afford to take the time to teach them, and students become bored when they simply follow the attending physician around.

Solution

Dedicate faculty and space to the clinic. Clinical faculty members should take turns serving in the clinic for the sole purpose of teaching the two or three medical students assigned there. In addition to this, students should see their patients in examination rooms that are designated for student education. This approach relieves the pressure on the regular clinic for maintaining patient flow, and gives the students one-on-one contact with the preceptor. It also affords the student more time to take a history, to do an examination, and to think about and discuss their patients. A cadre of physicians dedicated to this purpose (and selected for their interest, reliability, and expertise) will maximize student education and minimize physician burnout in the clinic.

2. Standardizing Clinical Experiences

Problem

Students' educational exposure may vary. Because of the variability of their experience in clinic, it is difficult to know exactly what students have seen and accomplished. It is important that they are exposed to basic clinical problems and acquire certain technical and communication skills.

Solution

Implement of checklist for recording exposure and skills. The faculty should determine what they feel are critical skills and activities that all students need to experience or master. A compromise between a comprehensive list and a useable tool may be necessary.

The checklist for students assigned to the clinic is kept by the supervising physician or nurse practitioner. That individual records the patient issues observed by the student and the student's demonstration of particular skills related to that clinical process. For example, a student might see a patient for a prenatal visit and the supervisor would record if the student measured the fundal height, located fetal heart tones, and counseled on signs of labor. The supervisor should review student checklists for gaps in their experiences and steer the students toward completion of their lists before they rotate off the service. Another approach is to make the student responsible for documentation of encounters and directing activities to areas not yet completed.

3. Preparing for Labor and Delivery

Problem

Students need experience to get experience. Most students look forward to delivering their first baby; however, residents often are reluctant to give them this responsibility (especially solo) if they have had no prior experience. Residents particularly want some assurance that a student knows the stages of labor and the proper hand maneuvers for delivering a baby.

Solution

Give students experience in delivering babies with a mannequin. Students can easily be taught the stages of labor and the hand maneuvers of delivering a baby with the use of a pelvic model, a doll baby, and a uterus model. These teaching tools help students visualize the process and give them hands-on experience in an unhurried and non-threatening situation. An audiotape of an actual delivery playing in the background adds a nice touch of realism. After this training session, residents at least can be assured that the student who joins them on labor and delivery has had classroom experience. This can be further supplemented by practicing episiotomy repairs on placentas. The student can gain experience in handling a needle driver, tying knots, and re-approximating tissue. The skill of self gowning is best learned in an unrushed environment. (There are few things more frustrating than to miss a delivery because you were not able to get your gloves on fast enough.) Also, childbirth education instructors are generally eager to provide crash courses in labor coaching for medical students. This advanced instruction helps them to know at least as much as the prepared patient and her partner.

4. Practical Examination of Clinical Skills

Problem

There are too few faculty-student observations. In the evaluation of students it becomes apparent that very few faculty members actually observe and provide feedback to the students performing clinical skills.

Solution

Employ standardized patients in objective structured clinical examinations (OSCE), but use the experience for teaching as well as testing. (The OSCE's use as a testing method has the effect of encouraging faculty, residents, and students to place more importance on the same activities during clinical encounters.) OSCEs as a solution have been recommended in the literature, and can be implemented in several steps (below). Stations and a checklist of important clinical skills to evaluate can be developed by a core faculty group. The development process itself is valuable also in that it focuses attention on the curriculum, defines learning objectives, and motivates faculty. Ambulatory care problems are emphasized. The APGO Instructional Objectives serve as a guide.

A. Identify core clinical skills to be evaluated. The following are commonly used examples using regular patients, simulated patients, or laboratory situations.

- Examination skill, such as performing pelvic and Pap exams; prenatal visits; and breast exams (with instruction to patient on breast self-examination).
- Interviewing skills using presenting complaint of first trimester bleeding, sexual dysfunction, or menstrual problems.
- Patient counseling about contraception or menopause.
- Technical skills, such as tying knots, vaginal wet mounts, writing a prescription, and evaluating a fetal monitor strip or labor curve.
- Triaging complaints by telephone, such as patients calling with symptoms consistent with ectopic pregnancy, preterm labor, and fetal compromise.

B. Identify resources available to carry out the OSCE. Remember, you need to consider location, stations, time, and staffing (see Chapter Three).

C. Establish a small committee to develop OSCE stations. Be sure these reflect the critical skills or knowledge that a student needs to have mastered.

Insights and Pitfalls

- Be sure the station task is "doable" in the allotted time.

- Distribute sample station list at the clerkship orientation.
- Station instructions must be clear.
- Allow for set-up time. All stations must be ready to go simultaneously.
- Start on time. Paper stations (essays, short answers, or drawings) should be available in emergencies to fill in for no-show patients or extra students.
- Stay on time.
- Have a rest stop available with refreshments for faculty, students, and patients.
- Consider adding extra time for direct patient-student feedback at each station (especially if the OSCE doubles as a teaching activity), plus a wrap-up to review checklist at the end.

D. Be sure to survey faculty, residents and students about the experience. Compile the evaluation results for analysis and then develop recommendations for future implementation.

5. Faculty Member "Burnout"

Problem

Dr. Smith says he no longer has enough time to give his assigned conference or attend the OB clinic.

Solution

Uncover the reason why Dr. Smith no longer has time. This problem may result either from some lessening of his desire to perform these functions or the fact that he has too many assigned duties. You have the difficult task of finding out which is the real issue; be careful and firm. If there seems to be loss of interest, you can either try to rekindle the interest and dedication or consider reducing the person's teaching commitments. If scarcity of time is the problem (and the interest is there), you should be prepared to support the individual in retrieving the necessary time required for the activity. Also realize that concerns regarding promotion may play a role. This may be hard to address if there is no way to have education promoted as a valuable activity within your institution.

6. Financial Support

Problem

The chair denies your request for computer support (or other equipment).

Solution

Review and document. Review your request and be sure you have carefully documented your need, including who would use the computer for what purposes (eg, data storage, reports, schedules, word processing, graphics, slide production, e-mail, literature searches, etc). Do your homework, including a budget proposal and different bids, or price quotes. Be prepared to give a specific demonstration of use, especially in teaching. Emphasize personnel time saved. Also create a careful, unemotional, and impartial picture of the consequences of *not* getting the computer. Remember, prayers are *always* answered—but sometimes the answer is no!

7. Promotion of Junior Faculty

Problem

An assistant professor would like promotion to associate professor. An assistant professor whose strength is teaching is joining the department. How does he/she collect data for his/her eventual application for promotion to associate professor?

Solution

Create and collect documents. The following documents and/or comments would be useful:

- Evaluation forms and/or feedback from all students and residents with whom the person works. Written comments should be encouraged. The forms should identify the faculty member specifically.

- Feedback on all courses taught from the continuing medical education division of the medical school.

- An accurate log of teaching hours. This should include lectures (noting topics and audiences), clinics staffed, etc.

- Evaluation by faculty peers of teaching effort.

- A dossier of examples of teaching effort (see Chapter Five and Appendix 3).

- Encourage involvement with national organizations, such as APGO's Annual Meeting or education workshops.

8. Energizing a Faculty

Problem

Faculty aren't putting enough effort into teaching. The commitment and effort the faculty devotes to teaching third year clerks seems to have been diminished at your medical school. How can the group be energized?

Solution

Make teaching a visible priority. The following steps should be considered:

- A faculty retreat devoted to education can be sponsored by the department chair or the dean. The agenda should include a review of formal feedback from the recent rotations; topics of lectures (to identify gaps in the curriculum); and presentation of new ideas and teaching/evaluation approaches, such as OSCE exams, computer-based learning, etc.

- Grand Rounds may be devoted to education and used to present topics such as an explanation of problem-based learning, OSCE exams, changes in promotion and tenure processes, etc.

- Discussion of education can be incorporated into the agendas of regular faculty meetings.

- Awards (of value) may be given for teaching, including promotion.

9. Computer-Assisted Instruction

Problem

Computer literacy is becoming more critical to the practice of medicine. How can we encourage their use in a clinical and interactive way by students, residents, and faculty, all of whom have varying degrees of computer comfort and not much time?

Solution

Integrate computers into a dynamic learning experience. Computers have been used for teaching at several institutions for a number of years. All students and faculty at all sites may be linked to each other and to the teaching center by direct or modem computer connections.

The system is used for mail/messages for individuals (ie, "Mary, remember advisor appointment tomorrow"); electronic bulletin board announcements for all (ie, "Grand Rounds—8 AM—Wind Surfing and Reproduction"); and Dynamic Interactive Patient Simulations (DIPS). DIPS are cases presented in sequential steps (complaint, history, examination, laboratory work, course, etc). Students are required to participate, but may do so when convenient. All participants interact, with the faculty case author providing feedback

to the individual and group. Mistakes are allowed, consequences are noted, and hints are provided when necessary. Several cases (each lasting a few weeks) are solved during a clerkship rotation.

To encourage active participation by students, DIPS must have an established place in the curriculum and there must be easy access to a computer work station for both students and faculty. Ideally cases should be structured around a list of important clinical problems, each addressing a different set of clinical learning objectives. Real patient cases are intrinsically more interesting than fabricated cases. By rotating faculty case authors you can get a variety of cases as well as involve (and educate) more faculty members in computer-assisted instruction. An example of a DIPS in progress, exhibiting both student and faculty interaction, appears below.

Sample

Dynamic Interactive Patient Simulation #79

You are leaving the hospital late in the afternoon through the ER when the RN stops you saying you are the only MD available (all the others are at the annual golf outing). She needs help with a patient.

The patient is a 30ish comatose person whose husband says she was fine until 45 minutes ago, when she complained of acute lower abdominal pain. She collapsed 30 minutes ago and became comatose 15 minutes ago as he was driving her to the hospital. He left to care for the children and has no telephone. What do you do?

_____

Student: Given the above situation, it would be appropriate to quickly establish an airway and evaluate the patient's hemohynamic status. Vital signs, resp, status, etc, will be a decent indication of the patient's stability and immediate condition. Lab studies after blood draw would include electrolytes (Ca+), blood cultures x 2, type and screen cross, CBC with differential, blood glucose, and any other test that I could think of under such a stressful situation.

_____

Faculty: The lab is partially shut down. You can get a CBC, which is 28%, 3.9, 9500. Pregnancy test is equivocal. What next?

_____

Student: Is the 3.9 a hemoglobin level and which other lab values can we get? I am unclear about how one determines bleeding in the abdominal cavity by physical exam.

_____

Faculty: Her abdomen is rigid and distended. Pelvic exam reveals a full cul de sac. Both indicate blood. How do you prove this?

_____

Student: I would perform culdocentesis. If blood is aspirated it should be evaluated for clot formation.

Faculty: Given the fact that this woman has acute abdomen, decreased hemoglobin, decreased hematocrit, and no apparent infectious process, I'm not sure that a culdocentesis is necessary. This woman is clearly bleeding somewhere, the most likely site being the peritoneal cavity, and the best way to prove it is by taking her to the OR and performing an exploratory laparotomy, and fix the source of bleeding as well.