

Framework for post-residency surgical education and training

Preamble. The Society of American Gastrointestinal Endoscopic Surgeons (SAGES) recognizes the discipline of surgery is dynamic and continues to evolve. Modifications of standard surgical procedures are usually introduced gradually into clinical practice—a process that seldom requires special training or privileges. Additional training, however, may be required to integrate techniques or procedures that are new to the individual surgeon. The purpose of this document is to provide unifying guidelines for post-residency surgical education.

The primary purpose of post-residency surgical education is to ensure safe, high-quality patient care.

Objective

This document is a framework upon which post-residency training program may be developed. It provides both policy and practical guidelines for designing such programs, including those in which residents participate outside of their formal curriculum. Individual societies or institutions may wish to develop more detailed documents relating to specific techniques or procedures.

These guidelines seek to further define avenues by which appropriate post-residency training may be achieved, supplementing existing criteria mandated by accrediting bodies. In addition, mechanisms are proposed to assist educators, trainees, and privileging bodies in assessing competence.

Definitions

Some of the terms used in this document were carefully selected to indicate the relative weight attached to each statement.

Must or shall

Indicates a mandatory or indispensable recommendation.

Should

Indicates a highly desirable recommendation.

May or Could

Indicates an optional recommendation; alternatives may be appropriate.

Competence

Competence is defined as the minimum level of skill, knowledge, and/or expertise, derived through training and experience, required to safely and proficiently perform a task or procedure.

Credentials

Documents provided following successful completion of a period of education or training.

Clinical Privileges

Authorization by a local institution (usually a hospital) to perform a particular procedure.

Pre-test

A quantifiable examination of a trainee's level of clinical knowledge, manual skills, or technical proficiency prior to commencing a training course.

Post-test

A quantifiable examination of a trainee's level of clinical knowledge, manual skills, or technical proficiency upon completion of a training course.

Policy Statements

Use of inanimate training models

Inanimate, ex vivo models, or simulators may be preferable to animate models. Animate models may be

necessary to simulate clinical situations when teaching certain surgical skills or techniques.

Educational grants

Educational grants provided by industry to support any educational program, course, skills laboratory, or preceptorship must be clearly noted in promotional and educational materials.

Investigational procedure

A procedure is considered investigational if it has not been accepted into clinical practice, has not been critically assessed in peer-reviewed medical literature, and has not been presented and discussed at suitable scientific meetings. Alternatively, a procedure is not investigational if sufficient prospective studies are available to prove its efficacy and safety.

Surgical progress would be impeded if every logical surgical innovation were required to be tested by randomized trials prior to clinical use. The surgeon should use his/her judgment to determine when such study is appropriate. Introduction of an investigational procedure may, however, require the approval of the appropriate institutional review board (IRB). Self-training in new procedures must take place on a background of basic surgical skills. The surgeon should recognize when and how much additional training in each new procedure is necessary.

Certification

Successful completion of any one or more training components or objectives does not necessarily signify an individual's clinical competence in a specific procedure or technique.

Components of post-residency surgical education

Basic training

Completion of an Accreditation Council for Graduate Medical Education (ACGME) accredited surgical residency training program in surgery is mandatory.

Courses

Definition

A course is a limited period of instruction with defined objectives designed to educate participants in clinical skills, techniques, or procedures. Course structure and duration may vary according to the course objectives.

Objectives

The course must have a stated set of objective(s). The objectives must be defined as tasks, successful completion of which can be quantitatively and qualitatively assessed.

Qualifications of faculty

The course director and the faculty members must have appropriate clinical and/or laboratory expertise to educate the participants in the stated objectives. When clinical procedures are taught, instructors must have clinical experience in those procedures. The course must have a written policy on disclosure of faculty/industry relationships.

Qualifications of participants

Participants should have appropriate fundamental knowledge, skills, and clinical experience relevant to course content in order to meet the stated objectives by the course's conclusion.

Site/Operations

A course site must be physically adequate to meet the stated objectives and to accommodate the course's enrollment. A course may be conducted at an industry facility, provided that it is operated in affiliation with a hospital, medical institution, university, or medical association that is qualified to grant continuing medical education (CME) credits.

Curriculum

A course must contain didactic instruction in the following areas as they may apply to the stated objectives: Patient selection; Indications and contraindications; Instrumentation; Techniques; Complications; Documentation; Pre- and post-operative care; Follow-up; Outcome; and Self-assessment, exercises. *Components that should be included are:* Printed materials (syllabus, reprints, bibliography); pre- and post-testing. *Components that may be included are:* Inanimate model practice; animate tissue/organ practice; animate laboratory instruction and practice; video instruction and practice; procedure observation; and simulator models.

In the future, skills may also be developed using advanced simulators (e.g. virtual reality scenarios).

Endorsement

Course directors should provide Continuing Medical Education (CME) credits and/or obtain endorsement by appropriate medical organizations.

Documentation

The course director and/or instructor should provide written assessment (determined in part by the post-test) of the participant's mastery of course objectives. Documentation for certain courses consisting of only didactic instruction may consist of verification of attendance.

Skills Laboratories

Definition

A facility in which a practicing physician acquires, refines or improves his/her ability to perform specific medical/surgical tasks or procedures. Skills are the building blocks upon which procedures are constructed. A skills laboratory may teach one skill or the entire set of skills required to perform a procedure. A skills laboratory is usually a continuing resource that can be revisited.

Mission statement

Every skills laboratory must have a mission statement defining objectives, curriculum, eligibility for training, and an evaluation process.

Objectives

The skills laboratory must have a set(s) of objectives. The objectives must be defined as tasks which can be quantitatively and qualitatively assessed.

Qualifications of Faculty

Faculty must have comprehensive practical and teaching experience in the skills outlined in the curriculum.

The skills laboratory director has the overall responsibility for setting objectives, curriculum development, faculty and staff appointment, and development of evaluation criteria.

There must be an appropriate ratio of faculty to trainees in order to assure progress is made and to enable documentation of achievement of objectives.

Qualifications of trainees

The skills laboratory must define eligibility for participation. The trainee must have appropriate background knowledge, demonstrated basic skills, and clinical experience relevant to the tasks to be learned. The trainee should be pre-tested quantitatively and qualitatively to demonstrate eligibility.

Site/Operations

The skills laboratory may be at an industrial site provided that it is operated in affiliation with one of the previously listed organizations. The skills laboratory should be operated by a hospital, medical institution, university, or a medical association qualified to grant continuing medical education (CME) credits.

Curriculum

There must be a curriculum statement which should include a list of tasks, definitions of skill levels, and a defined method of progressing from one skill level to the next. The curriculum must also include the learning components and their requirements. The curriculum may also include use and maintenance of medical instruments and equipment.

Appropriate components of a skills laboratory may include, but are not limited to: Inanimate model practice; ex vivo/simulator models; video tapes; audio tapes; CD ROM; interactive computer program; and self-assessment exercises.

Clinical case observation or clinical tapes may be used to reinforce principles learned. In the future, skills may also be developed using advanced simulators such as virtual reality scenarios.

Duration of training

The duration of training is not fixed but should be determined by the participant's mastery of the requisite skills. The trainee may demonstrate these by passing the post-test(s).

Assessment

The pre-test should quantitatively and qualitatively assess the trainee's current skill level as related to the program's objectives. The post-test should quantitatively and qualitatively evaluate the participant's acquisition of skills as defined by the program's objectives.

The curriculum may be modified based on the pre-test and/or performance during participation in the skills laboratory curriculum. Such modifications may include a series of exercises, tasks, or maneuvers which can be learned and later practiced outside the laboratory.

Documentation

The instructor or laboratory director must document mastery of the defined objectives and provide both qualitative and quantitative descriptions of the trainee's experiences. Results of pre/post tests should be included in the documentation.

Preceptorship

Definitions

Preceptorship

An individual educational program in which the physician acquires additional skills and/or judgment to improve his/her performance of specific medical or surgical techniques and/or procedures. The preceptorship should define eligibility for participation.

Preceptor

An expert surgeon who undertakes to impart his/her clinical knowledge and skills in a defined setting to a preceptee. The preceptor must be appropriately privileged, skilled, and experienced in the procedure(s) and or technique(s) in question. In order to serve as a preceptor in a specific procedure or technique, the surgeon (preceptor) must be a recognized authority (e.g., publications, presentations, extensive clinical experience) in the particular field of expertise.

Preceptee/Trainee

A surgeon with appropriate basic knowledge and experience seeking individual training in skills and/or procedures not learned in prior formal training. The trainee must have appropriate background knowledge, demonstrated basic skills, and clinical experience relevant to the proposed curriculum. The trainee should be pre-tested to demonstrate adequate basic training. The trainee should be board eligible or certified in the appropriate specialty or possess equivalent board certification outside the United States.

Objectives

The preceptorship must have stated objectives. The objectives must include a program outline and a proposed list of tasks and skills to be addressed during the training period.

Role of Preceptor

The preceptor has the overall responsibility for setting objectives, developing curriculum, overseeing instruction and practice of skills, demonstrating technique and clinical procedures, and evaluating the trainee.

The preceptor has primary patient care responsibility and is obliged to supervise not only procedures in which the trainee participates but also the appropriate perioperative care. This relationship must be reflected in the informed consent documentation.

Role of Trainee/Preceptee

The trainee must be involved in learning the skills and knowledge required to perform a technique or procedure, and the patient's complete care, with graded responsibilities ranging from observer to primary surgeon.

Completion of a preceptorship denotes adequate training in the patient's complete pre-operative, operative, and post-operative care.

Site/Operations

The preceptorship site must have sufficient clinical material and facilities to adequately educate the trainee. The preceptorship may be operated by or in affiliation with an accredited hospital, medical institution, university, or a medical association qualified to grant continuing medical education (CME) credits.

Curriculum

The preceptor-trainee relationship should be analogous to residency training and include factual, technical, and judgmental components. This training is based on clinical experience. However, the experience may be supplemented with teaching tools at the preceptor's discretion. Teaching aids utilized by the preceptor may include: inanimate models/simulators; ex vivo models; video tapes; audio/video tools; CD ROM; interactive computer program; self-assessment exercises; removed organs; and animate laboratories.

In the future, skills may also be developed using advanced simulators (e.g. virtual reality scenarios).

A preceptorship should include an appropriate number of opportunities for the trainee to both assist and serve as primary operator in the designated procedure and/or technique(s).

Documentation

The preceptor must document in writing both qualitative and quantitative descriptions of the trainee's experiences. This should include skills acquired and the number of procedures in which the trainee assisted or served as primary operator. Documentation stating that the procedures were satisfactorily performed must be provided to the preceptee. A certificate of training should be provided by the preceptor.

Indemnity

It is the dual responsibility of the preceptor and the trainee to secure appropriate authorization and indemnity through their own institution(s) or through independent sources in order to protect the patient.

Program assessment

Each program must regularly evaluate the degree to which its goals are being met through a formal assessment process. Such evaluation should be ongoing and systematically documented. The goal of each program should be to prepare qualified surgeons. The assessment process should include faculty evaluation by trainees.

Privileging

Credentialing/Privileging Committee

The trainee's local hospital or institutional body is charged with granting of privileges as defined by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). In conjunction with standard JCAHO guidelines for granting hospital privileges, the structure and process remain the individual responsibility of each institution. Having completed formal residency and post-residency training, privileging guidelines may include consideration of clinical experience and post-residency training/education, privileging in comparable alternative procedures, and appropriate ability and experience to manage common complications.

Appeals Mechanisms

As part of its responsibility, the privileging committee must establish appropriate mechanisms of appeal for individuals denied privileges.

Renewal of Privileges

Surgeons' experience and competence vary. Therefore, clinical privileges must be granted and periodically re-evaluated. The hospital privileging committee must have a written policy concerning renewal of privileges. The written policy should indicate if renewal of privileges is a part of, or separate from, hospital re-appointment. It is suggested that privileges be renewed every two years. Renewal should be contingent upon a stated level of clinical activity in specific procedures, in addition to satisfactory performance as assessed by quality assurance monitoring.

Documentation of Continuing Education

Continuing medical education related to the field should be required as part of the periodic renewal of privileges. Attendance at appropriate local or national meetings and courses should be encouraged and documented.

Proctoring

Definition

Traditionally, a proctor is a person who supervises or monitors students. As defined here, a proctor differs from a consultant or a preceptor in that s(he) functions as an observer and evaluator, does not directly participate in patient care, and receives no fees from the patient. Proctoring may be an element of the privileging process.

Qualifications of the Proctor

A proctor must be a physician/surgeon who has recognized proficiency or documented expertise in the specialty area being proctored. The proctor should be free of perceived or actual conflicts of interest, which might create a bias against, or in favor of, the applicant. A proctor may work at the same or at another institution.

When a proctor may be required

A proctor should be available to the privileging committee when a surgeon requests initial or extended privileges, during the review process, or for special quality assurance situations.

Proctoring process

The proctor should always be appointed by, and serve as an agent of, the medical staff's privileging committee. The privileging committee should determine the extent of proctoring. It is the hospital's responsibility to indemnify the proctor and so advise in writing.

It may be necessary to have more than one proctor evaluate the candidate at different times. The proctor must certify the trainee's competence in the procedure's performance. The proctor's(s') evaluation(s) must be documented in writing and submitted directly to the privileging committee. The evaluation should include the type and number of procedures observed and whether these were sufficient to enable the proctor to render an opinion concerning the applicant's performance. The committee should develop a formal written protocol and maintain detailed records. The proctoring document must be kept confidential.

Criteria of competency should be established in advance. These should include: patient selection; familiarity with instrumentation; surgical skills/judgment; and safe, expeditious completion of the procedure.

Proctor's responsibility

The proctor's sole responsibility is to the medical staff's privileging committee. There must be no finan-

cial obligation to the proctor from the surgeon or the patient.

Intervention

The issue of whether and to what extent a proctor should intervene in a procedure is complex and unsettled. Certain clinical situations, or simple humanitarian concerns, may dictate that the proctor become a consultant to the applicant or actually intervene to assist in a procedure gone awry. The proctor must realize that if s(he) goes beyond merely observing the procedure, s(he) has undertaken a duty to the patient which can result in liability arising from sequelae of the procedure. The proctor's involvement should be disclosed on the patient's chart and in the proctor's confidential report to the privileging committee. In situations where an applicant has an associate who holds privileges in the procedure being proctored, some hospitals have encouraged the associate to be present to assist (if necessary) in the procedure and to avoid the necessity for the proctor to become involved. The proctor may or may not be included in the patient's informed consent, recognizing that such inclusion may expose the proctor to risk beyond that of mere proctoring.

Summary Statement

The practicing surgeon may recognize, or a privileging committee mandate, when additional formal training is required. Examples include, but are not limited to a procedure new to the surgical community at large, or a procedure or technique that is not part of the surgeon's current repertoire. Regardless of the impetus, the components of training must result in a surgeon who is comfortable performing a new procedure. In addition, training must be uniformly structured to provide sufficient information to objectively document the results of training.

This document outlines a framework for post-residency surgical training, provides consistent definitions of key terms and roles, and suggests educational programs appropriate to JCAHO guidelines.

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References

1. American Society of Gastrointestinal Endoscopy (1991) Proctoring and hospital endoscopy privileges. *Gastrointest Endosc* 37: 666-667
2. Azziz R (1992) Operative endoscopy: the pressing need for a structured training and credentialing process [editorial]. *Fertil Steril* 58: 1100-1102
3. Barnes RW, Lang NP, Whiteside MF (1989) Halstedian technique revisited: innovations in teaching surgical skills. *Ann Surg* 210: 118-121
4. Dent TL (1991) Training, credentialing, and granting of clinical privileges for laparoscopic general surgery. *Am J Surg* 161: 399-403
5. Dent TL (1992) Training, credentialing, and evaluation in laparoscopic surgery. *Surg Clin North Am* 72: 1003-1011
6. Society of American Gastrointestinal Endoscopic Surgeons (1993) Guidelines for submission of continuing medical education seeking SAGES endorsement for courses in laparoscopic surgery. *Surg Endosc* 7: 372-373
7. Joint Commission on Accreditation of Health Care Organizations (1992) The 1993 Joint Commission Accreditation Manual for Hospitals. Joint Commission On Accreditation of Health Care Organizations, Oakbrook Terrace, IL
8. Lewis BS, Pace WD (1990) Qualitative and quantitative methods for the assessment of clinical preceptors. *Fam Med* 22: 356-59
9. Pennsylvania Medical Society, Hospital Medical Staff Section (1994) New procedure credentialing protocol. Publisher, Place of publication [AUTHOR, PLEASE SUPPLY]
10. Pickleman J, Schueneman AL (1987) The use and abuse of neuropsychological tests to predict operative performance. *Bull Am Coll Surg* 72: 8-11
11. Society of American Gastrointestinal Endoscopic Surgeons (1993) Guidelines for granting of privileges for laparoscopic (peritoneoscopic) general surgery. *Surg Endosc* 7: 67-68
12. Society of American Gastrointestinal Endoscopic Surgeons (1992) Guidelines for granting of privileges for gastrointestinal endoscopy by surgeons. Los Angeles, California
13. Schueneman AL, Pickleman J, Freeark RJ (1985) Age, gender, lateral dominance, and prediction of operative skill among general surgery residents. *Surgery* 98: 506-515
14. Zucker KA, Bailey RW, Graham SM, Scovil W, Imbembo AL (1993) Training for laparoscopic surgery. *World J Surg* 17: 3-7

Note. The following is an excerpt from an educational opinion written by H.B. Slotnick, Ph.D., who is a Professor of Neurosciences and Director of the Office of Medical Education and Research Services, School of Medicine, University of North Dakota, Grand Forks, North Dakota. Dr. Slotnick concluded the following: "The educational framework on which *The Framework* is based reflects sound notions of what teaching and learning are like. Post-graduate education and training following these notions should allow both societal expectations for gastrointestinal surgeons and these surgeons' needs to be addressed."

For a complete copy of the educational opinion by Dr. Slotnick, please contact the SAGES office.