

Residency Education

Advanced Procedural Training in Family Medicine: A Group Consensus Statement

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Background and Objectives: Family medicine does not have a defined scope of procedures or universal standards for procedural training. This contributes to wide variation in family physician training and difficulties obtaining hospital privileges for advanced procedures. The Society of Teachers of Family Medicine (STFM) Group on Hospital Medicine and Procedural Training previously developed a list of core procedures to be taught in all family medicine residencies. The group reconvened to develop a consensus list of advanced procedures within the scope of family medicine. **Methods:** Working from a master list of procedures, the group, which consisted of 21 family medicine educators, used a multi-voting process to identify advanced procedures within the scope of family medicine. **Results:** The group generated a list of 36 advanced procedures and added nine procedures to the previously created list of core procedures. **Conclusions:** The STFM Group on Hospital Medicine and Procedural Training proposes a list of advanced procedures within the scope of family medicine and urges family medicine governing bodies to use this list to define and standardize the scope of procedural training and practice in family medicine.

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Many medical subspecialties identify a narrow scope of procedures that physicians in the specialty routinely perform. In contrast, because of the broad nature of family medicine and family medicine training, family physicians practice a wide variety of procedural skills.¹⁻⁸ These practice variations may stem from local needs and traditions, historical practice norms, medical staff privileging issues, diversity of faculty expertise, and emerging technologies.

No consensus exists on the optimal way to assess proficiency and competence to perform procedures independently.^{2,9-12} Family medicine educators and leaders have yet to define a set of core procedures or the range of procedures within the scope of family medicine.^{4-6,9,13-17} As a result, family physicians may find themselves in “turf battles” with other specialties that

claim certain procedures as their own and may have difficulty obtaining privileges to perform procedures despite adequate training.^{18,19}

In rural or urban areas where access to specialists is limited, family physicians are often the primary source of care. Patients in these areas may have difficulty obtaining needed services if capable family physicians do not have privileges to perform advanced procedures such as cesarean delivery or colonoscopy.^{16,20} Family physicians, through their leadership on both the Residency Review Committee (RRC) and the American Board of Family Medicine (ABFM), should formally define the scope of procedures in family medicine.

The Society of Teachers of Family Medicine (STFM) Group on Hospital Medicine and Procedural Training is made up of family medicine leaders and educators with a special interest in teaching and performing procedures. Seventeen members of this group met in January 2007 and developed a recommended list of core procedures that all family medicine residents should learn to perform.²¹ STFM approved this procedure list as a statement from their working group, and the American Academy of Family Physicians (AAFP) Commission on Education (COE) also approved the list and referred it to the RRC for consideration.

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After disseminating the core procedure list, members of the STFM Group on Hospital Medicine and Procedural Training turned their attention to advanced procedures. These are procedures beyond the core list that usually require focused training during residency or fellowship. They may be taught in procedurally focused residency programs (ie, those programs teaching procedures in addition to the required core procedures) or in post-residency fellowships.

The group met again in February 2008 to develop lists of these advanced procedures that are within the scope of family medicine. This paper reports on the process and outcomes of developing that list of advanced procedures.

Methods

The methods by which the group at the 2007 meeting defined categories for procedures within the scope of family medicine according to level of training necessary are described previously.²¹ The group also created a list of core procedures to be required in family medicine residencies ("Category A" procedures).²¹

All members of the STFM Group on Hospital Medicine and Procedural Training listserv were invited via multiple e-mail invitations to participate in the 2008 meeting. All listserv members are members of STFM and the STFM Group on Hospital Medicine and Procedural Training. The goals of the 2008 meeting were to (1) review/revise the categories defined in the 2007 meeting, (2) review/revise the list of required procedures for all family medicine residencies (Category A procedures), and (3) create lists of procedures that will usually require focused training in residency (Category B) and those that will usually require additional training beyond residency (Category C).

Twenty-one family medicine educators, members of the Group on Hospital Medicine and Procedural Training, attended and voted at the 2-day meeting. One e-mail voting opportunity was circulated to the 21 group members after the meeting for clarification about the inclusion of one procedure. The group first reviewed definitions for the procedure categories that were developed the prior year. A participant could make a motion to change a definition and then the group would discuss the proposed change and approve or reject it by majority vote.

Next, the group reviewed the procedures previously assigned to Category A. In the same manner as above, individuals could move to add or remove procedures from this list, and the group discussed and voted on the change.

Finally, the group assigned procedures to Category B (Focused Training, usually within residency) and Category C (Additional Training, usually beyond residency). The group reviewed the comprehensive list of advanced procedures generated at the previous

year's meeting. Participants were invited to suggest additional procedures for inclusion. The group discussed each procedure and then held a majority vote to assign each one to Category B or C. In case of a tie vote, the procedure was assigned to the list requiring the higher level of training (eg, in case of a tie between the B and C categories, the procedure was assigned to category C).

Results

Participants

The group of 21 family physician educators included 14 men and seven women. Thirteen had attended the first meeting in 2007. Eighteen were faculty in a family medicine residency, and one of these was also in private practice. Three were faculty at fellowship programs. Fourteen worked in urban areas, one in a rural setting, three in suburbs, and three in multiple settings. Fifteen delivered babies, and an additional four provided prenatal care only. Eleven states were represented: Alaska, Arizona, California, Colorado, Illinois, Indiana, Michigan, New York, Oregon, Texas, and Washington.

Mean number of years in practice was 15.3 (range 7–31). Participants had been involved in medical education an average of 10.8 years (range of 0–31 years). Four participants were residency directors, three were fellowship directors, and one was a department head.

Definition of a Procedure

The group revisited the previously used definition of a procedure as "the mental and motor activities required to execute a manual task involving patient care."⁶ Participants noted that since credentialing applications often include primarily cognitive tasks such as interpreting an EKG, fetal monitoring strip, or chest radiograph, family physicians would benefit by asserting that these are within their scope of practice. Further, many of these clinical skills have a Current Procedural Terminology (CPT) code, so performance and interpretation could each be considered a "procedure." Therefore, the group agreed to include some of the aforementioned skills on the lists of procedures.

Definitions of Categories

The group reviewed the previous year's definitions for each category of procedures (Table 1) and agreed by consensus to change the definition of Category B to the following: "These procedures are within the scope of family medicine and require focused training for residents to be able to perform independently by graduation."

Required Core Procedures List (Category A)

The group voted on new procedures to add to Category A. These are listed in bold text in Table 2. The

Table 1

Procedure Categories, Revised²¹

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- A: All family medicine residency programs must provide training in each of these procedures.
- A0: Residents will have the ability to perform these basic procedures either upon graduation from medical school or through normal residency experience. These procedures do not require specific documentation of training or numbers performed.
- A1: All residents must be able to perform these procedures independently by graduation.
- A2: All residents must have exposure to these procedures and be given the opportunity to be trained to perform them independently by graduation.
- B: These procedures are within the scope of family medicine and require focused training for residents to be able to perform independently by graduation.
- C: These procedures are within the scope of family medicine and may require additional training beyond the usual 3-year training for family physicians to perform independently.
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group debated the prior year's decision to include clinical courses such as Advanced Cardiac Life Support (ACLS) as core procedures, since they don't naturally fit with the previously mentioned definition of a procedure. However, the group decided to keep these courses in Category A, since they encompass core procedural skills and because various regulatory bodies, hospitals, and employers recognize them for credentialing purposes. To allow residencies some flexibility in covering the procedural skills included in these courses and because new courses are in the process of being developed and evaluated, the qualifier "or equivalent training" was added.

Advanced Procedures Lists (Categories B and C)

Table 3 shows procedures assigned to Categories B and C. During 2 days of discussion, each procedure in the master list was debated and voted on by the group members. Discussion points included historical norms, local and regional needs and cultures, patient access, risks and benefits, training resources, and institutional norms particularly around abortion-related and maternity care procedures. Most Category B procedures could be taught in a procedurally focused residency program, and the procedures in Category C would typically require additional training beyond what most residencies can provide during a 3-year program. It is the consensus of the group that all procedures listed here are within the current scope of the practice of family medicine.

Uniform Training Standards

After completing the lists, the group endorsed the establishment of uniform training standards for family physicians who wish to perform these advanced

procedures. The pathways to developing competency in some of these procedures will vary and could include fellowship training or workshops with proctoring.

Discussion

In this report, the STFM Group on Hospital Medicine and Procedural Training defines the scope of advanced procedures that can be performed by family physicians in the United States. In addition to the process by which these lists were developed, the diversity of the participants' practice settings and their cumulative years of educational experience lend credibility and strength to the results.

We undertook this work to help our governing organizations establish and defend the scope of procedures that family physicians perform. The AAFP policy on procedural scope of training states that "Family medicine residencies should strive to teach residents all procedures within the scope of family medicine."²² The RRC in family medicine revised program requirements in 2006 for procedure skills to include "a list of procedural competencies required for completion by all residents."²³ However, neither organization defined the scope of practice in family medicine clearly or universally. Residency directors, patients, legislators, insurers, specialty organizations, and credentialing bodies need guidance from family medicine leaders to recognize the breadth of procedural skills that family physicians can provide competently.

Several authors have attempted to define which procedures should be taught in family medicine residency.^{1-6,8,11,13,17} Rural needs have been promoted as reasons to teach a broad scope of procedures.^{8,24} Other reasons to perform office procedures include increased access to preventive services such as cervical and colon cancer screening,²⁵ economic advantages for physicians,²⁵ rapid diagnosis for both treatment and referral,²⁶ and cost effectiveness for patients and payors.²⁷ Large studies have demonstrated that family physicians provide quality procedural care, including cesarean delivery^{28,29} esophagogastroduodenoscopy,^{30,31} and colonoscopy^{32,33} with excellent patient outcomes. Given the myriad of reasons for family physicians to provide procedural care and the documented high quality of such care, family medicine organizations should defend and promote procedural care by family physicians with further definition of the scope of family medicine procedures.

The STFM Group on Hospital Medicine and Procedural Training is proposing the listed procedures as a starting point for defining the scope of procedural skills in family medicine. These recommendations were developed using previously described comprehensive master lists of procedures²¹ and refined using a careful process that leveraged the diversity, experience, and expertise in our group. Anticipating changes in

Table 2

Category A: Core Procedures in Family Medicine²¹ With New Additions in BOLD

	A0: All residents must be able to perform, but documentation not required	A1: All residents must be able to perform independently by graduation	A2: All residents must be exposed to and have the opportunity to train to independent performance
Skin	Remove corn/callous Drain subungual hematoma Skin staples Fungal studies (KOH) Laceration repair with tissue glues	Biopsies —Punch, excisional, incisional Cryosurgery Remove warts, fingernail, toenail, foreign body Incision and drainage of abscess Simple laceration repair with sutures	Electrosurgery
Maternity care		Spontaneous vaginal delivery, including: —Fetal monitoring —Fetal scalp electrode —IUPC and amnioinfusion —Amniotomy —Labor induction/augmentation —First- and second-degree laceration repair Vacuum-assisted vaginal delivery	Third- and fourth-degree laceration repair Manual extraction of placenta
Women's health	Wet mount, KOH Diaphragm fitting	Pap smear Vulvar biopsy Bartholin's cyst management Remove cervical polyp Endometrial biopsy IUD insertion/removal FNA breast	Pessary fitting Paracervical block Cervical dilation Colposcopy Cervical cryotherapy Uterine aspiration/D&C
Life support courses	EKG performance and interpretation	ACLS, NRP, PALS, ALSO, ATLS (or equivalent training)	
Musculoskeletal		Initial management of simple fractures —Closed reduction —Upper and lower extremity splints Injection/aspiration —Large joint, bursa, ganglion cyst, trigger point Reduction of nursemaid's elbow	Upper and lower extremity casts Reduction of shoulder dislocation
Pulmonary	Handheld spirometry		
Ultrasound		Basic OB ultrasound —AFI, fetal presentation, placental location Ultrasound guidance for central vascular access, paracentesis, thoracentesis	Advanced OB ultrasound —Dating —Anatomic survey
Urgent Care and Hospital	Foreign body removal —Ear, nose Ring removal Fish hook removal Phlebotomy Peripheral venous access	Eye procedures —Fluorescein exam —Foreign body removal Anterior nasal packing for epistaxis Lumbar puncture FNA of mass or cyst	Frenulotomy Slit lamp exam Endotracheal intubation Ventilator management Thoracentesis Paracentesis Arterial line Central venous catheter Venous cutdown Pediatric vascular access —Peripheral, intraosseous, umbilical vein
Gastrointestinal & Colorectal	Nasogastric tube, enteral feeding tube Fecal disimpaction Digital rectal exam	Anoscopy Excision of thrombosed hemorrhoid Incision and drainage of perirectal abscess Remove perianal skin tags	Flexible sigmoidoscopy or colonoscopy
Genitourinary	Urine microscopy Bladder catheterization	Newborn circumcision	Vasectomy Suprapubic aspiration
Anesthesia		Topical anesthesia Local anesthesia/field block Digital block	Peripheral nerve block Conscious sedation

KOH—potassium hydroxide, ACLS—Advanced Cardiac Life Support, NRP—Neonatal Resuscitation Program, ALSO—Advanced Life Support in Obstetrics, ATLS—Advanced Trauma Life Support, D&C—dilation and curettage, OB—obstetrical; FNA—fine needle aspiration

Table 3
Advanced Procedures Within the Scope of Family Medicine

	<i>B: Require focused training in residency</i>	<i>C: May require additional training beyond residency or fellowship</i>
Skin	Allergy testing Botulinum toxin injection Non-surgical cosmetic aesthetics Skin flap advanced closures	
Maternity care	Amniocentesis Cesarean delivery External cephalic version Forceps-assisted delivery	Cervical cerclage Vaginal twin delivery
Women's health	Contraceptive implant insertion and removal Dilation and evacuation Loop electrical excision procedure (LEEP) Non FNA breast biopsy Tubal ligation	Hysteroscopy Laparoscopy
Musculoskeletal		Acupuncture
Urgent care and hospital	Bone marrow biopsy Cardioversion Chest tube insertion, management, and removal Exercise stress test Nasorhinolaryngoscopy Peritonsillar abscess incision and drainage Swan-Ganz catheter insertion and management Tooth extraction	Bronchoscopy Myringotomy (PE) tubes Sleep study—perform and interpret Tonsillectomy
Gastrointestinal and colorectal	Endoscopic gastroduodenoscopy (EGD)	Appendectomy Anal fissure surgical management
Genitourinary	Emergency dorsal slit procedure	Non-neonatal circumcision
Anesthesia	Intrathecal anesthesia	Epidural anesthesia

PE—pressure equalizing tubes (tympanostomy)

technology and the needs of patients and communities, we envision these lists as dynamic. Family physicians will incorporate new technologies into their scope of practice. These may replace older procedures as standard of care, and obsolete procedures will need to be deleted. Family medicine leaders will need to define our scope of practice in procedural care as well as create an ongoing system for periodic updates as change occurs. The STFM Group on Hospital Medicine and Procedural Training is currently reviewing these lists yearly. The list could also be updated using trends identified by AAFP membership surveys and surveys of current procedural training in residencies. The AAFP Commission on Education is a well-placed potential vehicle for vetting procedural training and scope of practice educational recommendations due to its broad representation (family medicine organizations, students, residents, and community practicing physicians) and its interface with the RRC.

In addition, the STFM Group on Hospital Medicine and Procedural Training advocates for uniform training standards and criteria to determine competency. Many privileging committees currently use specialty

certification and/or a minimum number of procedures performed (which may be more or less arbitrarily chosen) to award privileges to perform procedures independently. However, performing a minimum number of procedures may not be necessary or sufficient to ensure competency. Further, many procedures involve overlapping skills, allowing physicians to apply their existing surgical and procedural skills to rapidly attain proficiency at new procedures. In addition, some are quick learners while others need more practice to achieve the same level of performance. The STFM Group on Hospital Medicine and Procedural Training is actively working to develop valid measures to assess competence in procedural care; such tools will ensure that credentialing for procedures is based on competence, rather than numbers of procedures. Family medicine organizations such as the RRC and ABFM should establish uniform curricular and proctoring requirements to ensure adequate training and optimal patient care quality.

We anticipate that procedurally focused residencies, which often prepare family physicians for rural or international practice, will continue to offer training

in these advanced procedures. Additional fellowship training beyond residency may be required for some procedures (especially those in Category C). Procedure skills training can be resource intensive, but several new resources are available, including on-line curricula and procedure courses for faculty.^{34,35}

Access to advanced procedures is particularly important to the health of rural and underserved communities. Family physicians play a significant role in providing this care, since they comprise the majority of physicians practicing in rural areas.^{16,36} Rural access to care has been identified as one of the “greatest challenges facing those who craft health care policy,” especially due to difficulties in recruiting and retaining rural physicians.^{36,37} Many residency programs incorporate rural training experiences that provide training in advanced procedures and help recruit graduates to rural communities.³⁸⁻⁴⁰

Provision of procedural care in a local setting by a family physician can add value in continuity of care, accessibility, convenience, and cost-effectiveness without sacrificing quality.^{24,41} Procedure skills are essential to the definition of a family physician, and the Future of Family Medicine Project calls for “patient-centered, evidence-based, whole-person care,” which includes the competent delivery of diagnostic and therapeutic procedures.⁴² Family medicine can improve access to and delivery of procedural care for all patients by promoting comprehensive procedural training and ensuring that family physicians can obtain privileges to perform the procedures in which they demonstrate competence.

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