The Role of Premedical Shadow Students in the Future of Family Medicine and Primary Care

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For years, premedical students interested in becoming physicians have shadowed physicians to see exactly what medicine is about and what physicians do. Students want to find out if medicine is attractive enough to pursue as a career (1). The greatest gift parents give their children is an education; one of the greatest decisions children make is their career choice. Shadowing is a common way for students to learn more about a career in medicine (1). They are interested in the educational commitment, time involved, daily work hours, night, weekend, and holiday call, liability risks, job availability and salaries. Shadowing is also called “structured observership” or “observational experience” (1). Shadowing can be formal in a very structured environment or informal in which the student accompanies a physician, most often his family physician (1). Research shows that shadowing can increase one’s interest in a medical career (1). Shadowing usually occurs in a physician’s office but it can also take place be a hospital in surgery, labor and delivery, the emergency department or on patient floors.

Research on undergraduate shadowing is limited. Our review of the literature revealed only seven papers about medical student shadowing. A recent extensive review by Kitsis and Goldsammier produced only 11 papers on shadowing and educational endeavors and only two papers on shadowing (1).

The majority of shadow students are premedical. Other students may be interested in dentistry, nursing, physical therapy, nurse anesthesia, podiatry, veterinary medicine, or midwifery (2). Shadow students can be high school, college premedical, first or second year medical students or even residents (2, 3). In some medical education systems, shadowing may be a required exercise for medical students or residents (4, 5). Most shadowing work has been done with preclinical medical students following residents and attending physicians (3). Shadowing physicians may also be foreign medical graduates hoping to match in a U.S. residency program. Students from other schools are sometimes called “observers.” It is a teaching and learning opportunity no matter what the level of the learner. This editorial is limited to premedical student shadowing.

Students usually follow their family physician but may follow a physician of any specialty including family medicine, pediatrics, obstetrics and gynecology, surgery, internal medicine, community and rural medicine and psychiatry. Most physicians are excited about the prospect of having a student shadowing them. Most physicians are honored to have been chosen to be shadowed (6) and are anxious to participate in the selection of the next generation of physicians who will practice medicine. Shadowing a physician is a one-to-one teaching and learning opportunity (3). Shadowing helps students understand what practicing medicine really entails in order to minimize burnout and have reasonable expectations of the profession (1). Shadowing teaches students how to interact with patients, which can be difficult to learn (7).
Today, physician shadowing is an important aspect of the medical school application (6). Approximately 80% of medical school applicants have shadowed physicians (1). Shadowing in more than one specialty and setting allows students to learn about other specialties and different venues (8). Shadowing is an opportunity to “try on possible selves” and see what practicing different specialties would be like (9). Medical school admission committees usually inquire about shadowing and clinical experiences as part of the interview process to determine the student’s interest level in medicine (1). Admission committee members also want to know that a prospective student understands the role of a physician and want to hear the applicant speak credibly about their exposure to medicine. Understanding the role of the physician and preparation for the reality of medicine – the clinical practice of patient care – is an essential component to both premed observers and those shadowing while in the first few years of medical school(10).

Recommendations for shadowing are found in the literature (6):

1) Learn how to locate a physician to shadow—a family physician is a great first choice
2) Select the appropriate shadowing setting, such a hospital, clinic, emergency department
3) Make shadowing needs fit the physician’s schedule (11)
4) Complete application for shadowing
5) Student confirmation by his or her institution of higher education
6) Student must provide copy of his or her transcript
7) Complete privacy training and HIPPA course
8) Adhere to infection control standards such TB skin testing
9) Discuss goals with preceptor
10) Dress appropriately and be on time
11) Broaden the clinical exposure
12) Show enthusiasm but respect the patient
13) Ask questions and talk to patients with their permission (11)
14) Do exactly what the preceptor asks (8)
15) Send physicians a thank you note for their time (11)

There are some concerns about premedical shadowing involving patient confidentiality, privacy, infection control, acceptance by patients and patient comfort with confidential and personal issues, including such intimate procedures like breast and pelvic examinations (1). Problems can be minimized with a structured program for shadowing in which there are goals, requirements for participation, confirmation by the student’s educational institution, defined roles for both physicians and students, dress code, HIPPA training and infection control requirements such as TB skin tests (1). Sometimes patients do not want the presence of a shadowing student, even in a teaching institution.

The University of Alabama has a significant number of premedical students annually who wish to shadow healthcare professionals during their college education. The University’s College of Community Health Sciences and University Medical Center are common sources
of shadowing experience for many of these students and provide many different opportunities including shadowing in family medicine, internal medicine, surgery, obstetrics and gynecology, pediatrics, psychiatry and rural and community medicine. Unfortunately, the number of students wishing to gain experience shadowing a physician greatly surpasses the amount of spaces in the shadowing program.

Premedical students are allowed to shadow physicians in our specialty clinics at University Medical Center. Students apply for shadowing opportunities with our Medical Student Affairs office by completing an application, provide a transcript and complete HIPPA training. They see patients with attending physicians, fellows, residents and medical students. They are introduced as shadow students, usually premed, who want to pursue a medical career. Permission for premedical shadow observation must be obtained from patient. Just like medical students and residents, patients often become invested in shadow students and the student’s pursuit of medicine. Patients inquire about where they are from, what they are interested in, and if they will return to the hometown. Shadowing students work with medical students, residents, fellows, nursing students as well as attending physicians which allows them to see how interdisciplinary collaboration works in rendering care.

One of our graduating residents has wanted to be a physician for as long as he can remember. He was raised in a rural town of about 5,000 people. His goal was to go to medical school, become a family doctor and return to practice in his hometown. His grades were outstanding including everything back to kindergarten. He entered college, and located at the college was a regional campus of a medical school. He registered to shadow at the specialty clinics operated by the regional campus and really never left. He worked and shadowed at the clinics for three years while attending college as a full time premed student. I would often see him cleaning dirty examination rooms and carrying dirty linen to the laundry room in addition to shadowing attending physicians, residents and medical students. He also tutored underprivileged elementary school children at a local school.

Despite his involvement at the regional medical school campus, his grades never suffered. He matriculated into our medical school system and selected our regional campus as his clinical training site. At the conclusion of medical school, he did what medical students call a “suicide match.” That is, he applied only to one program--our program and was selected as a family medicine resident. He recently completed his residency training and has returned to his hometown to practice family medicine.

Observations about premedical shadowing in our institution are listed below. These areas need research and investigation:

1) There are a large number of college students who are interested in becoming physicians
2) Many premedical students would like to shadow physicians
3) Our medical school campus is a prime location for shadowing because it is on the University of Alabama campus
Many shadowing students come from rural areas
Some of these students are interested in returning to their home town in rural areas to practice
Some of these students are interested in family medicine and primary care
Students often qualify for and participate in our Rural Medical Scholars Program
Many of these students matriculate into our medical education system
Many students select our regional campus because they are familiar with it
Many of these students who are interested in primary care select our regional campus for their clinical years of medical school
Many of these medical students select family medicine and primary care careers
Many of these students select our family medicine residency
Many of these students will eventually practice primary care in Alabama

Of 50 students who shadow in obstetrics and gynecology at our institution, 49 will have a wonderful experience and one will decide that he or she does not like the sight of blood, the smell of vomitus, the pain of a procedure or crying of infants. Even though that one student has a negative experience, it is positive in that he or she determines that medicine is not a good fit. Instead of wasting time and money, the student can explore other career opportunities.

Premed experiences influence choice of career (12). Early clinical contact is an important concept in medical education (13). Students are influenced by what they see and often by what specialty they shadow. This concept has been confirmed by The University of Alabama Rural Medical Scholars Program and the Rural Health Leaders Pipeline Programs (14). These programs have produced more family physicians for rural Alabama than most other programs (12, 14). Experiences with a family medicine mentor influence the choice of family medicine as a career (12). Physicians often make their specialty fun, lucrative and appealing. Shadowing has an impact on the choice of specialty and career (15). Shadowing or even observing in an urban hospital often has a negative impact on choosing family medicine and primary care specialties (15).

Shadowing also has advantages for our institution:

1) Provides an opportunity for prospective physicians to fulfill the mission of our regional campus, residency and areas of practice
2) Attracts good students, who we already know to this campus and who know our faculty and staff
3) Attracts students who are from rural and underserved health care needs as students are influenced early in the process
4) Teaches about rural and underserved needs early in the process as students are influenced early in the process
5) Attracts students who are interested in primary care and our mission
6) If the shadow experience is good, students often choose our institution because of their experience
There is a need to take advantage of the fact that medical students from rural areas are more likely to return to rural areas to practice, where the majority of physicians are more likely to be family physicians (15). Shadowing experiences are an opportunity to introduce students to primary care, family medicine, rural tract education and longitudinal care which may be attractive to them. There are also smaller numbers of students on regional medical campuses, which allows for one-on-one teaching by the attending staff.

The discovery that we have made is that many of these shadowing students will pursue medicine, will apply to College of Community Health Sciences programs, such as the Rural Medical Scholars Program (14), and will spend their clinical years of medical school at our institution. Our observation is that premedical shadowing students are often overlooked as a great opportunity of prospective family medicine and primary care physicians for the future. These students also provide an opportunity for our institution to fulfill its mission and to provide health care for the rural and underserved patients of Alabama. Still, more research is needed on this topic.
References


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