For the Office-based Teacher of Family Medicine

William Huang, MD
Feature Editor

Editor’s Note: In this month’s column, Michael Grover, DO, assistant professor in the Department of Family Medicine at Loma Linda University in Loma Linda, Calif, expands on one of the principles of the “One Minute Preceptor.”

I welcome your comments about this feature, which is also published on the STFM Web site at www.stfm.org. I also encourage all predoctoral directors to make copies of this feature and distribute it to their preceptors (with the appropriate Family Medicine citation). Send your submissions to williamh@bcm.tmc.edu. William Huang, MD, Baylor College of Medicine, Department of Family and Community Medicine, 5510 Greenbriar, Houston, TX 77005-2638. 713-798-6271. Fax: 713-798-8472. Submissions should be no longer than 3–4 double-spaced pages. References can be used but are not required. Count each table or figure as one page of text.

Teaching General Rules During Ambulatory Education

Michael Grover, DO

Family physicians are challenged to be effective teachers of students while maintaining clinical efficiency. The “One Minute Preceptor” method (Table 1) has been proposed as a way to structure ambulatory education to help meet these challenges.1,2 One step in the process in particular, “teaching a general rule,” may benefit the student as well as develop the teaching expertise of the physician.

Clinical preceptors may feel they have too much material to cover during their limited interactions with students and want to share all of their wisdom at once. Attempting to teach everything one knows about a subject, especially in a short period of time, will only lead to confusion and frustration. It has been suggested that focusing on a limited number of teaching points per interaction, based on the needs evaluated from the learner’s presentation, can be particularly powerful, leading to the axiom that “less teaching can lead to more learning.”3

Let the Learner Guide Your Teaching

Traditionally, the physician’s degree of content knowledge about medicine was assumed to be the primary predictor of teaching expertise. In this view, all that would be required to be an excellent teacher was mastery of the material. While knowledge of the subject matter is a necessary ingredient, effective clinical teachers are also required to have knowledge about their learner.4,5 Effective teachers must find ways to make connections for students to patients’ clinical problems. This process must be tied to the student’s level of knowledge and experience. Veteran teachers develop an understanding of the common errors that a student might make or the misconceptions that a student might have. Educational psychologist David Ausubel stated:

If I had to reduce all of educational psychology to just one principle, I would say this: the single most important thing influencing learning is what the learner already knows. Ascertain this, and then teach her/him accordingly.6

Thus, teaching becomes a reflective process based on the student’s demonstration of his or her understanding. Clinical teaching becomes a process of “uncovering” the material rather than trying to “cover it all.”

Formulating a General Rule

Instruction becomes more memorable and transferable for application to other situations when students learn a general rule.7 To develop clinical reasoning skills, one must have the collective ex-
periences of many patient encounters as well as learn the analytic rules associated with prototype recognition. Teaching general rules helps students recognize prototypical features about individual patient cases. Students will draw on these rules again in the future as they develop competency. While care must be taken not to overgeneralize clinical situations, students must be able to take principles learned from one case and effectively use them again for patients with similar problems.

Teaching physicians have an obligation to not only diagnose the patient’s medical needs but to also “diagnose” the learner’s educational needs and subsequently teach based on that assessment. McGee and Irby suggest that the general rules should be brief and address both the patient’s concern and the learner’s needs, as discerned from the presentation. Teaching a general rule is not an opportunity for a prolonged testimonial about the physician’s clinical experiences but rather an opportunity to deliver a “clinical pearl” for frequent future use. Two examples:

(1) While our patient with a sore throat did report having a fever, I am not convinced that she has strep pharyngitis. Patients with strep throat frequently have tender cervical lymphadenitis, pharyngeal exudate, and lack a cough. For our patient, let’s do a rapid strep test to help us make some decisions.

(2) It is a good idea to think of unstable angina in all patients who complain of chest pain. Angina is usually described as a precordial sensation of heaviness that may radiate to the neck or arm. It is often precipitated with exertion and relieved with rest. Our patient is young and has no cardiac risk factors. Also, the fact that his pain occurs at rest and is sharp in character makes angina less probable. Gastroesophageal reflux or chest wall pain would be more likely. Let’s go talk with him together.

The above examples of general rules relate primarily to concepts of disease frequency and differential diagnosis appropriate for beginning students. Those teaching points may not be appropriate for a more-senior student or a resident physician. More-specific rules based on more-complex issues around diagnosis, management, or treatment would emerge with a presentation by a more-experienced and knowledgeable learner. Good clinical teachers, particularly with increased teaching experience, develop the ability to formulate multiple general rules surrounding specific disease processes.

Effect of Teaching General Rules on the Preceptor

With experience, teaching physicians develop the ability to anticipate the common learner errors seen frequently in clinical situations. Teaching scripts begin to emerge from the teacher’s memory for use with learners. These internalized scripts contain details about specific learners, the goals of instruction, and the specific teaching points about a subject that are focused at different learner levels. These scripts become activated automatically in response to the stimulus of a learner’s presentation. This ability to cognitively process instruction helps to differentiate expert from novice teachers. Learning to teach general rules may help physicians develop their own scripts and in turn allow application of them more effectively to the appropriate learner. This process of developing content-specific instruction may be the way that we as teachers know what to teach and to whom to teach it. Expert teachers become able, therefore, to meet the learning needs of most individual learners.

A Role for Students in the Development of Their Preceptors

Because of the necessity for students to learn by experience and to develop clinical reasoning skills by way of prototype development, students should be asked to take an active role in their clinical education. The probability of students being taught a general rule may be enhanced if they ask a generalizing question. Students could ask their preceptors how a particular management decision was made or the rationale behind obtaining specific historical information. An example:

I noticed with our last patient that you started him on an anti-hypertensive medicine, but with our prior one you recommended lifestyle interventions alone. Can you review with me some of the general indications for using
medications to treat patients with high blood pressure?

Using this process may allow both the student and the teacher to consciously discover the conceptual scaffolding of decision making used in the care of patients. In this manner, preceptors can be cued to model for students the steps of clinical reasoning that expert clinicians often do unconsciously. This would help build the clinical skills of students more rapidly. Through teaching with generalization and prototypes, clinical preceptors might also develop into expert educators more quickly.

Acknowledgments: Thanks and appreciation to Wilbur Alexander, PhD, and Kelly Morton, PhD, Department of Family Medicine, Loma Linda University, for their supportive comments and editorial efforts.

Correspondence: Address correspondence to Dr Grover, Loma Linda University, Department of Family Medicine, 25455 Barton Road, Suite 209B, Loma Linda, CA 92354. 909-558-6688. Fax: 909.558.6656. mgrover@som.luu.edu.

References