

Education



WHAT'S THE EVIDENCE: A REVIEW OF THE ONE-MINUTE PRECEPTOR MODEL OF CLINICAL TEACHING AND IMPLICATIONS FOR TEACHING IN THE EMERGENCY DEPARTMENT

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Abstract—Background: The 2012 Academic Emergency Medicine Consensus Conference, “Education Research in Emergency Medicine: Opportunities, Challenges, and Strategies for Success” noted that emergency medicine (EM) educators often rely on theory and tradition in molding their approaches to teaching and learning, and called on the EM education community to advance the teaching of our specialty through the performance and application of research in teaching and assessment methods, cognitive function, and the effects of education interventions. **Objective:** The purpose of this article is to review the research-based evidence for the effectiveness of the one-minute preceptor (OMP) teaching method, and to provide suggestions for its use in clinical teaching and learning in EM. **Discussion:** This article reviews hypothesis-testing education research related to the use of the OMP as a pedagogical method applicable to clinical teaching. Evidence indicates that the OMP prompts the teaching of higher level concepts, facilitates the assessment of students’ knowledge, and prompts the provision of feedback. Students indicate satisfaction with this method of clinical case-based discussion teaching. **Conclusion:** Advancing EM education will require that high quality education research results be translated into actual curricular, pedagogical, assessment,

and professional development changes. The OMP is a pedagogical method that is applicable to teaching in the emergency department. © 2016 Elsevier Inc. All rights reserved.

Keywords—clinical teaching; education research; emergency medicine; one-minute preceptor

CONSIDER THE FOLLOWING CASE PRESENTATION

Medical Student Case Presentation to Preceptor

Hi, Dr. F, I have a new patient I’d like to present, OK?

This is a 27-year-old woman who fell off her bicycle 2 days ago. She’s here complaining of neck pain and numbness and weakness in her right hand. She landed on her right arm and her ribs when she fell, and I think she hit her head. Now she says she can’t lift her shoulder or pick up a pencil in her right hand and she feels numb and “cold” in her hand. She says everything hurts her: head, neck, and arm.

On examination, her vital signs are normal. She has a bruise on the back of her head and it hurts everywhere I touch from her head to her fingers, except that she says she can’t feel me as well when I touch her right palm. I think her fingertips feel cold. She has weakness in her right shoulder and her biceps reflex is 3+.

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I'm not sure what's going on, but I put her in a long arm splint.

INTRODUCTION

Teaching in a busy ambulatory clinical setting can be challenging. Physicians must juggle the tasks of assessing and addressing trainees' learning needs while simultaneously providing efficient, minimally disrupted patient care.

Although the above case may be an extreme example in which the preceptor will need to develop an organized teaching response to a somewhat disorganized and highly incomplete case presentation, methods do exist for efficient clinical teaching. The one-minute preceptor (OMP) or 5 microskills model of learner-centered clinical teaching was initially described in the family medicine literature as an efficient method of successfully performing the dual tasks of clinical teaching and patient care. It consists of 5 steps that a preceptor can use to frame a teaching discussion after a learner's case presentation:

- 1) Get a commitment from the learner about what she or he thinks is going on with the patient—in other words, ask the learner to state the probable diagnoses
- 2) Probe the learner for her or his underlying reasoning—in other words, encourage the learner to state why and how she or he has reached the conclusions regarding the differential diagnosis
- 3) Based on the answers to steps 1 and 2, teach general principles about the clinical case—deliver a teaching pearl
- 4) Provide positive feedback to the learner
- 5) Correct errors for future performance

The OMP provides a framework for structuring a teaching conversation around learners' clinical case presentations. Despite its name, it does not imply teaching "in only 1 minute," but rather is named for the teaching efficiency that it engenders. Since its description in the family practice literature in 1992, the OMP has been described as the basis for a number of professional development courses for both faculty and residents (1–4). Its use as a teaching method has been described in numerous settings, including basic science laboratories, nursing education, and a variety of medical specialties (5–12).

Despite its widespread use in professional development courses, what is the evidence to support the supposition that the OMP facilitates "diagnosing" both the learner and the patient, while providing teaching to one and facilitating the care of the other? What research supports the use of the OMP as both effective and efficient? This brief article reviews the existing research evidence and provides tips for teaching with the OMP in the emergency department (ED).

Search Strategy and Evidence Selection

A PubMed search for English language articles was performed using the following search terms: "one minute preceptor" and "five micro-skills AND teaching." Thirty-four articles related to or mentioning the OMP were identified. Seventeen articles that describe the use of the OMP for teaching in the health professions were reviewed (Table 1). Articles that describe the content or use of the OMP in laboratory science teaching contexts or professional development activities were not considered for this review of the pertinent education research. Four articles met the criteria as hypothesis-testing educational research studies and are discussed below.

Aagaard E, Teherani A, Irby DM. Effectiveness of the one-minute preceptor model for diagnosing the patient and learner: proof of concept. Acad Med 2004;79:42–49

This is the first study to use an experimental design to assess the effectiveness of the OMP in facilitating both teaching and patient diagnosis. The authors developed and recorded 2 scripted, standardized, simulated third-year student-preceptor encounters. Each encounter began with the same student presentation and was precepted by the same preceptor. Two versions of each case were recorded, and the preceptor used 1 of 2 different clinical teaching approaches (i.e., the OMP or a "traditional" teaching method consisting of questions to clarify clinical data and patient care issues). Study subjects were 116 teaching faculty participating in faculty development programs at 7 United States (US) medical schools. Each subject watched the 4 video-recorded (2 versions of each encounter), and rated the observed teaching encounter on the following: students' abilities, subject's confidence in rating students' abilities, and the effectiveness and efficiency of the teaching encounters. Subjects rated their ability to correctly diagnose the patient problem equal or better (92% vs. 76%; $p = 0.02$) when observing the OMP teaching encounter. Controlling for years of teaching/rating experience, subjects rated students' demonstration of clinical reasoning skills and fund of knowledge more highly after observing the OMP encounter ($p = 0.00$), and were more confident of their ratings of these skills after observing the OMP encounter ($p = 0.00$). Subjects rated the OMP method significantly more effective and efficient as a clinical teaching method ($p = 0.00$).

Irby DM, Aagaard E, Teherani A. Teaching points identified by preceptors observing one-minute preceptor and traditional preceptor encounters. Acad Med 2004;79:50–55

In a companion to their previous study, the same 116 subjects identified 843 total teaching points during their observations of the 2 case recordings. The authors compared the characteristics of the teaching points identified in each of the 2 precepting models. The traditional

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