

# Bedside Teaching in the Emergency Department

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## Abstract

Bedside teaching is a valuable instructional method that facilitates the development of history and physical examination skills, the modeling of professional behaviors, and the direct observation of learners. The emergency department (ED) is an ideal environment for the practice of bedside teaching, because its high patient volume, increased acuity of illness, and variety of pathology provide plentiful patient-centered teaching opportunities. Unfortunately, the pressures of ED overcrowding at many institutions now limit the available time for formal bedside teaching per patient. This article will discuss the historical decline of bedside teaching on the wards, address obstacles to its use in the ED, and reestablish its specific benefits as a unique educational tool. The authors propose several practical strategies to increase bedside teaching by academic emergency physicians (EPs). These techniques emphasize careful preparation and a focused teaching approach to overcome the inherent challenges of a typically busy ED shift.

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The term *bedside teaching* refers to physician training that occurs in the presence of patients; literally, it is teaching at the bedside. Much of the existing literature on bedside teaching has been written by primary-care educators who identify ward rounds as their ideal opportunity for clinical teaching.<sup>1-8</sup> These talented generalist professors have developed a defined skills set for teaching on inpatient rounds. In their setting, stable and interactive patients are examined at a slower, more predictable pace. The inpatient wards represent the traditional laboratory for the uninterrupted practice of bedside-teaching skills.

In contrast, opportunities for bedside teaching in the emergency department (ED) are limited by inherent environmental challenges. The ED often is chaotic and unpredictable, with faculty members under constant pressure to care for a continually rising number of critically ill patients. Direct bedside care represents only a fraction of the total time spent managing any one patient, thus relocating much of the educational discourse outside the patient room. Effective bedside teaching can be challenging

in this busy setting, requiring that emergency medicine (EM) educators possess a skills set unique from that of their primary-care colleagues. Bedside teaching methodologies that address the dynamic pace and variable patient population of the ED have received little attention in the literature to date.<sup>4,5</sup>

This article will review the common impediments to effective bedside teaching in the ED, discuss the educational value of this instructional method, and offer practical strategies to overcome barriers to its implementation during a demanding shift.

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## DECLINE OF BEDSIDE TEACHING

Teaching medicine at the bedside has been an integral part of the education of young physicians since antiquity. Hippocrates, who is often called the father of bedside medicine, advocated teaching "The Science" by placing the patient, rather than the disease, at its physical and symbolic center.<sup>9</sup> Sir William Osler, one of the eminent clinical teachers of the modern era, promoted bedside rounds as the preferred alternative to lecture-based education: "Take [the student] from the lecture room, take him from the amphitheater... put him in the outpatient department, put him in the wards... no teaching [should be done] without a patient for a text, and the best is that taught by the patient himself."<sup>10</sup>

The overall culture of modern medical education has moved away from Osler's bedside model to a more didactic, lecture-based format.<sup>3,7,11-14</sup> Clinical teaching

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on the inpatient wards has retreated from the patient's bedside to the hospital corridor, to the nursing station, and finally, to the conference room.<sup>3-5,7,15</sup> Several studies have quantified this steady migration; they have reported that the incidence of bedside teaching on internal medicine rounds declined from roughly 75% in the 1960s<sup>11</sup> to just 15% a decade later.<sup>12</sup> Some investigators have estimated that less than 25% of all clinical teaching time is spent at the bedside.<sup>16,17</sup>

It is important for academic emergency physicians (EPs) to examine the reasons for the decline of bedside teaching on the wards. Lessons learned by generalist educators may aid in overcoming some of the impediments to the use of this educational tool in the ED. A survey of internal medicine faculty, chief residents, and residency directors cited several deterrents to bedside teaching: poor bedside-teaching skills, the unrealistic expectation that the teacher be omniscient, and the underappreciation of clinician-educators by academic medical centers.<sup>7</sup> Other studies have identified complacent residents and fearful faculty as the major obstacles to bedside teaching.<sup>3,5,8</sup> One investigator found that 80% of experienced attendings (defined as those more than 10 years out of residency) preferred bedside presentations, compared with only half of their junior faculty colleagues.<sup>8</sup> Physicians also use patients as an excuse for conducting hallway rounds, citing the assumption that patients may feel uncomfortable if confidential medical information is discussed in front of multiple learners.<sup>4</sup>

Several additional obstacles to effective bedside teaching exist in the busy ED setting. The pressure to evaluate and manage multiple patients in a limited amount of time can severely restrict bedside teaching opportunities by academic EPs.<sup>5,18</sup> Acutely ill patients require immediate stabilization, precluding the use of the controlled, inpatient style of bedside teaching. The ambulatory care environment provides a closer approximation of ED patient flow as it applies to bedside teaching. According to Kroenke et al., "The clinic setting demands real time teaching. The learner often has a number of patients to see and is thus on a tighter time schedule than on the wards."<sup>5</sup> In the ED, students and residents tend to learn new clinical skills by the "just-show-up-and-go" approach,<sup>19</sup> without the benefit of any structured educational technique such as formal teaching rounds.

The development and growth of the specialty of EM occurred in concert with the decline in bedside teaching by generalists. Whereas history left internal medicine with a well-developed cultural legacy of clinical teaching, EM still is developing a teaching ethic of its own.<sup>18</sup> Primary-care educators have addressed the problem of devalued bedside teaching by establishing faculty teaching awards, formal training in teaching skills and educational research, and incentive plans.<sup>7,15,19</sup> Since 1989, the American College of Emergency Physicians Teaching Fellowship has trained up to 30 faculty members biannually, focusing on clinical teaching techniques (including bedside teaching).<sup>20</sup> However, to accommodate the recent growth of EM residencies (and learners) across the country, many more formal teacher-training programs will have to be established. It may be difficult to identify and reward EM faculty members who are particularly proficient at bedside teaching, because the specialty has

rarely differentiated this teaching method as a unique skills set. Last, there is a need for well-designed educational research that evaluates the effectiveness of such specific, time-consuming teaching techniques within the construct of EM.

## BENEFITS OF BEDSIDE TEACHING

Several studies have documented that excellent clinical teachers can help to improve learning as measured by standardized test scores of medical students.<sup>21-24</sup> Although most of these studies have not focused exclusively on bedside teaching as the primary technique, Roop and Pangaro demonstrated that students cited bedside teaching and evaluation as characteristic strategies of superior clinical teachers.<sup>21</sup> Although important clinical teaching commonly occurs during presentations outside the examination room, bedside instruction has conceptually distinct goals and methods, while simultaneously providing equivalent transfer of information.<sup>25</sup> Bedside teaching allows for the demonstration of efficient history-taking and physical findings, the modeling of professional behaviors and communication techniques, and a venue to directly observe learners interacting with their patients. Examples of bedside-teaching opportunities in the ED include the instruction of team leadership, procedural skills, and clinical decision making during medical and trauma resuscitations. Several important benefits of bedside teaching are summarized in Table 1.

### Opportunity to Demonstrate and Assess History and Physical Examination Skills

The development of appropriate interviewing and physical examination skills is best produced by seeing as many patients as possible.<sup>3,5,6,14,15,26,27</sup> Students and residents early in clinical training have difficulty distinguishing critical elements of a patient history from issues less relevant to the case at hand. A proficient bedside teacher can exhibit lines of questioning that achieve the most efficient transfer of clinical information. Similarly, inexperienced learners often overlook uncommon or subtle physical examination findings. Such findings can make for memorable teaching moments when talented clinical educators discuss the manifestations of illness in the presence of an obliging patient.<sup>28</sup> One study found that structured sessions in bedside teaching by expert faculty greatly improved resident interpretation of cardiac murmurs.<sup>29</sup> Appropriate patients provide a context in which to reinforce the understanding of disease processes first learned in the classroom.<sup>26</sup> A survey by Mandel et al.

Table 1  
Benefits of Bedside Teaching

Provides an opportunity to demonstrate and assess history and physical examination skills
Establishes a forum to develop and assess professionalism
Improves the therapeutic relationship
Improves patient education
Provides a setting for direct observation as a formal evaluative tool

indicated that internal medicine graduates felt underprepared in their clinical practice skills (including history taking and physical examination)<sup>30</sup> and demonstrates the need for more bedside experience.<sup>14</sup> In response to an increasing demand for evidence-based clinical teaching, the *Journal of the American Medical Association* has developed the “Rational Clinical Exam” series.<sup>31</sup> This set of articles helps medical educators to teach clinical diagnostic skills, often by using a bedside approach to facilitate learning. Bedside instruction thus represents the ideals of the patient-centered, Hippocratic approach to medical education.<sup>9,14</sup>

#### Forum to Develop and Assess Professionalism

Bedside teaching provides an excellent opportunity to model professional behaviors<sup>19</sup> and to discuss “the humanistic aspects of medicine.”<sup>7</sup> Professionalism and humanism cannot be learned without the participation of actual patients. A survey of 50 medical-school faculty members concluded that didactic seminars alone had failed to foster humanism amongst their students.<sup>32</sup> Directed patient interactions facilitate the understanding of a specific disease process, as well as the broader context in which a patient experiences illness.<sup>3</sup> Bedside teaching discourages the practice of denigrating patients with labels like “train wrecks, last night’s hits, [and] goomers.”<sup>3</sup> Even when the medical aspects of a case require no further explanation to the learner, faculty may demonstrate excellent interpersonal skills during the bedside encounter.<sup>13,14</sup>

#### Improvement of the Therapeutic Relationship

Bedside teaching contributes to an increase in the duration of the clinical encounter and positively affects the patient-physician relationship.<sup>3-5</sup> A randomized controlled trial of bedside teaching conducted on the inpatient medicine wards at Johns Hopkins University concluded that patients perceived greater physician contact time when rounds were held at the bedside (10 minutes vs. 6 minutes).<sup>33</sup> Another study demonstrated that 85% of patients preferred to be present when their cases were discussed.<sup>3</sup> Educators have found that the majority of patients enjoy participating in bedside-teaching rounds and would recommend the process to other patients.<sup>34</sup>

#### Improvement of Patient Education

The increase in physician contact attributable to bedside teaching also contributes to patient education.<sup>27</sup> Two thirds of inpatients who were surveyed in one study felt that bedside rounds increased their understanding of their respective illnesses.<sup>1</sup> The majority of patient respondents in another survey study not only felt that bedside teaching improved their knowledge about their disease but also believed that the teaching process maintained confidentiality.<sup>34</sup> In an era in which patients receive much of their medical information from popular press and the Internet, improved patient education represents an important secondary outcome of bedside teaching.

#### Setting for Direct Observation as a Formal Evaluative Tool

The direct observation and evaluation of residents by attending staff can be a positive element of any bedside

teaching encounter. Residents who were queried about their experiences with bedside assessments felt that such sessions were valuable to their education, that areas requiring improvement were appropriately identified, and that the presence of faculty evaluators was not overly intimidating.<sup>35</sup> Unfortunately, misperceptions of learner discomfort during such evaluations have devalued the use of bedside assessments by some faculty. In a study of 21 EM residency programs, half of the more than 500 resident respondents recalled fewer than three observed histories or physical examinations during their training.<sup>36</sup> Torre et al. demonstrated that bedside teaching with medical students improves their access to feedback from faculty, which was regarded by learners as an important aspect of high-quality clinical teaching.<sup>24</sup> The Outcome Project of the Accreditation Council for Graduate Medical Education has encouraged the implementation of bedside assessments as a means of ensuring clinical competency.<sup>37</sup> EM educators have responded to this issue, most recently with the development and validation of the Standardized Direct Observation Tool.<sup>38</sup>

#### Advantages Specific to the ED Setting

The ED provides distinct opportunities for bedside teaching that are not available elsewhere in the hospital. The variety of pathology, both medical and surgical, allows faculty to demonstrate and assess a diverse breadth of acute care knowledge. Untreated and acutely ill patients will likely exhibit more abnormal physical examination findings that are conducive to bedside teaching techniques than will those patients who have been stabilized and admitted to the inpatient wards. The management of ED patients often requires performance of different procedural interventions that can provide a forum for faculty to interact with learners at the bedside. A study by Gerson and Van Dam demonstrated that bedside teaching of sigmoidoscopy to internal medicine residents resulted in better procedural proficiency than did using a virtual reality simulator.<sup>39</sup> The volume of patients seen in a typical ED shift is larger than in other clinical settings, offering more teaching opportunities.<sup>40</sup> Berger et al. demonstrated that medical students perceived no inverse relationship between quality of teaching and clinical productivity in an academic ED.<sup>41</sup> Although 96% of the faculty felt that time demands for productivity reduced the opportunity for clinical teaching, a subset of exemplary faculty possessed both excellent teaching skills and meticulous attention to patient flow. With structured-clinical and bedside-teaching training programs, it may be possible to improve the efficiency of teaching without sacrificing productivity for the average academic EP. Senior EM residents benefit from the bedside modeling of efficient examinations, professionalism, and conflict-resolution skills that help faculty augment the flow of timely ED care.<sup>28</sup> The advantages and challenges to bedside teaching in the ED are compared in Table 2.

#### STRATEGIES FOR EFFECTIVE BEDSIDE TEACHING IN THE ED

Principles of bedside teaching practiced by generalists on the inpatient wards provide a basic framework for

Table 2  
Advantages and Challenges to Bedside Teaching in the ED

Advantages	Challenges
Variety of medical and surgical pathology	Overcrowding limits teaching time per patient
Acutely ill patients with abnormal examination findings	Resuscitations interfere with planned teaching time
Ample opportunity to teach procedural skills	Lack of training for EM faculty in bedside teaching
Greater volume of patients than on other units	Lack of reward for successful clinical teachers
Allows for modeling of efficient, timely care	Need for research to prove effective techniques
Practice professionalism	
Practice conflict resolution skills	

EM faculty interested in developing similar skills.<sup>6,7</sup> Direction of pertinent questions on history, demonstration of physical examination findings, modeling of professionalism, and educating patients may cross disciplines easily. Several studies have described specific methods for internists to increase the frequency and efficiency of bedside teaching sessions on the wards.<sup>5-7,13,14,19</sup> These teaching techniques should be modified with an understanding of the clinical demands and opportunities inherent to high-volume academic EDs. We offer ten strategies for implementing effective bedside teaching in the ED; these are summarized in Table 3.

#### Plan the Teaching Session Before the Next Shift

Effective bedside teaching requires adequate planning well before the teachable moment.<sup>3,6,7</sup> Faculty should review key learning points for specific topics that commonly are seen during a typical ED shift.<sup>28</sup> Ideally, one should focus on practical management issues surrounding uncommon but important diseases that present with common chief complaints. Such teaching points are rarely reinforced outside the lecture hall. For example, the evaluation of a potential myocardial infarction is routinely reviewed in the daily presentation of patients with chest pain; however, a discussion of cardiac tamponade might include the bedside search for Beck's triad (jugular venous distention, muffled heart sounds, hypotension) or sonographic evidence of disease.

#### Know One's Team, Know One's Goals

Begin each shift with introductions<sup>18,19</sup> and ask team members to identify interesting patients for teaching. Displaying an enthusiastic, nonthreatening attitude at the beginning of a shift helps to establish a positive learning environment.<sup>3,19</sup> Goals for the rotation for each

learner should be explicitly reviewed ahead of time, because different members of the team will benefit from different areas of instruction.<sup>6,19,27</sup> Senior medical students might appreciate the demonstration of characteristic physical examination findings that are useful for developing their differential diagnoses and management plans. Rotating residents will benefit from observing and coordinating cardiopulmonary resuscitation sequences that they are likely to encounter while covering the inpatient wards. Junior EM residents will need to refine those same skills, improve efficiency, manage multiple patients at a time, and learn complex emergency procedures. Familiarity with the learner's specific goals will allow the bedside teacher to tailor the educational forum appropriately.<sup>19,27</sup>

#### Choose the Right Time to Teach

It is axiomatic that the management of acutely ill patients takes precedence over clinical teaching.<sup>18</sup> Nevertheless, such resuscitations provide excellent opportunities for observational learning. EM faculty should plan for resuscitations ahead of time<sup>3,6</sup> by generating a short list of pertinent teaching points that can be emphasized during any case, for example, airway assessment or rhythm analysis. Keep in mind that much learning occurs through the modeling of ideal behaviors during such high-stress encounters. After a patient is stabilized, opportunities for more formal bedside teaching abound. While learners are seeing new patients, the teacher can identify stable patients who are waiting during their workup as potential teaching cases for the next bedside session.

#### Set Realistic Expectations for Yourself

The introduction of bedside teaching at high-volume EDs should follow the adage, "start low and go slow."<sup>2</sup> When starting out, restrict the number of patients seen during each shift and learners taught during each session.<sup>42</sup> Leading multiple learners into every patient room to observe complete histories and physical examinations will result in both backup of patient flow and inefficiency of the educational process.<sup>5,18,28</sup> Instead, set reasonable goals on the basis of your patient volume and individual teaching experience.<sup>5,27</sup> The advice of Kroenke et al. for bedside teaching in the ambulatory clinic may be applied to the ED: "Time with the patient... must often be particularly focused and efficient."<sup>5</sup> Select two or three topics to teach at the bedside each day,<sup>5</sup> such as the importance of eliciting cocaine use in a patient with chest pain, demonstrating shifting dullness in a patient with ascites, or dealing with a hostile patient. With comfort and

Table 3  
Strategies for Effective Bedside Teaching in the ED

1. Plan your teaching session before your next shift
2. Know your team, know your goals
3. Choose the right time to teach
4. Set realistic expectations for yourself
5. Limit the amount of time per patient
6. Be professional
7. Use the Socratic method with caution
8. Summarize and evaluate
9. The "teach-only attending"
10. Train residents how to teach at the bedside

Modified from Ramani.<sup>6</sup>

experience, the bedside teacher can steadily increase the number of patients and learners who participate each day.<sup>5</sup>

### Limit the Amount of Time per Patient

Two general guidelines regarding time management can help integrate bedside teaching without interrupting patient throughput. First, a 1-minute hallway lecture before the patient encounter can provide orientation to the process and direct learners to focus their evaluations. Targeted mini-lectures such as these have been viewed by medical students as an effective teaching strategy.<sup>24</sup> For example, for a patient with acute pulmonary edema, first review the key points in pathophysiology (fluid overload, the Frank-Starling curve) and history (dyspnea, orthopnea, paroxysmal nocturnal dyspnea) before entering the patient's room. Then conduct a bedside auscultation session focusing on the pulmonary examination for crackles and on the cardiac examination for an S3 gallop.

Second, establish a set time limit for the actual bedside encounter.<sup>6</sup> We suggest 5 minutes as a reasonable period to prevent undue delay for other patients waiting to be seen.<sup>28</sup> Such limits allow adequate time to efficiently teach or observe clinical skills at the bedside, while continuing to provide expedient care to potentially ill patients.<sup>2,5</sup>

### Be Professional

Bedside teaching requires both the presence and participation of a willing patient. Faculty should discuss the goals for the encounter with the patient and specifically ask permission<sup>13,19</sup> to conduct the proposed teaching venture before the learners even enter the room.<sup>27</sup> Explain that although the history and physical examination may be conducted in the presence of a team of learners, efforts will be made to keep medical information confidential. Some EDs may have only curtains separating rooms, and other patients may overhear the initial patient history as well as the bedside teaching exercise. The Health Insurance Portability and Accountability Act Privacy Rule specifically has allowed health care professionals to "discuss a patient's condition during training rounds in an academic institution... if reasonable precautions are taken to minimize the chance of incidental disclosure to others who may be nearby... However, in a loud emergency room, or where a patient is hearing impaired, such precautions may not be practicable."<sup>43</sup>

The need for the bedside teacher to maintain a professional, empathetic attitude cannot be overemphasized. This is crucial for both patient comfort and for the education of learners, who will emulate their teacher's behavior.<sup>3,6,18</sup> Before leaving the bedside, make sure to address any patient questions that were generated during the encounter,<sup>3,13,14</sup> and thank the patient for contributing to the education of future physicians.<sup>27</sup>

### Use the Socratic Method with Caution

Although it is popular as a general clinical teaching tool, the Socratic method can be potentially humiliating for learners and patients when used at the bedside.<sup>3,14,19</sup> Residents would understandably be distressed if they could not answer questions correctly in front of their patients,<sup>5</sup> leading to negative consequences for their

patient-physician relationship.<sup>14,18</sup> To circumvent this problem, faculty should only ask questions of learners other than the primary caregiver. In this way, the student or junior resident who has formed a direct therapeutic relationship with the patient can learn without embarrassment while his or her colleagues field questions.<sup>5</sup> While answering questions, junior learners may ask for a "consultation" from a more senior member of the group; this will demonstrate a cooperative, team-oriented approach to the patient's care.

### Summarize and Evaluate

Explicitly summarizing key concepts learned at the bedside is integral to the educational process.<sup>19,44</sup> This is especially important as the ED faculty member gains experience and increases the number of bedside sessions and learning points per shift. Immediate evaluative feedback by the bedside teacher is ideally performed at the end of each teaching encounter<sup>3,6,14,19</sup> and is viewed as essential by students.<sup>24</sup> Furthermore, although evaluation of the learner's performance by the teacher is implicit, the reverse is often conspicuously absent. Faculty should be evaluated by learners on their teaching performance; this necessitates an open-minded teacher who is unafraid of constructive criticism.<sup>6,14</sup> Observation and peer review by fellow faculty is another excellent method of giving feedback to the teacher and of increasing the frequency and quality of bedside teaching.<sup>13,45</sup>

### The Teach-only Attending

A specialized bedside-teaching program deserves mention: the *teach-only attending*. Shayne et al. described one such successful initiative at Emory University, where bedside teaching and observation sessions are performed by EM attendings who are free from clinical responsibilities.<sup>46</sup> The program incorporates structured, weekly, clinical teaching that is supplemented by didactic lectures by each clinical faculty member about four times per year. The utility of a dedicated faculty observational shift since has been examined.<sup>35</sup> Interns in the ED were observed by attendings and given immediate feedback regarding their patient assessments. Both trainees and observers believed that the sessions provided higher levels of educational value than traditional methods of case presentation. The teach-only attending technique may be applied to the busiest ED shifts, because peak patient volumes provide many opportunities for the resourceful bedside teacher who does not have direct patient-care responsibilities.

### Train Residents How to Teach at the Bedside

With uncertainty in their medical knowledge, supervising residents may have difficulty conducting formal bedside rounds.<sup>47</sup> Senior residents play a critical role in teaching medical students,<sup>21,24</sup> however, and should be encouraged to develop their bedside teaching skills.<sup>19</sup> Training residents to become better clinical teachers offers many advantages. In one study of clinical teaching on an internal medicine clerkship, resident teachers were found to have a more beneficial effect than attending teachers on standardized test scores of medical students.<sup>21</sup> Residents are usually closer in age to medical students and can be less intimidating when compared

with the more formal student–faculty relationship.<sup>47</sup> Procedures are easily taught by those who still remember what it feels like to perform them for the first time.<sup>47</sup> Professional behaviors are reinforced through modeling by senior residents during actual patient encounters. The majority of medical students surveyed in a study of professional development perceived residents to be important role models.<sup>48</sup>

Teaching benefits the budding teacher as well. In one study, pediatrics residents who gave lectures on oral hydration for gastroenteritis performed far better on a posttest than did those who simply listened to the lecture.<sup>49</sup> Fostering the development of strong teaching residents enhances the scholarly spirit of a program<sup>3,15,19</sup> and better prepares graduates for careers in academics. Initiatives such as the Harvard Teaching Program have succeeded at fulfilling the goal of American Association of Medical Colleges to establish residents as formal educators of medical students.<sup>47</sup> These “teach to teach” programs have up to now been instituted largely in primary care residencies.<sup>19</sup> Formal training in clinical and bedside teaching needs to begin in EM residencies to secure the future of these important skills.<sup>47</sup>

## CONCLUSIONS

Bedside teaching is a time-tested, unique method of clinical instruction that reinforces classroom study with patient-centered education.<sup>3,5,14</sup> Despite a decline in the use of bedside teaching on the inpatient wards,<sup>11,12</sup> efforts have emerged to reestablish the import of this technique among medical educators.<sup>13,14,29</sup> Specific advantages to bedside teaching in the ED provide exceptional opportunities for learning. By keeping certain strategies in mind, EM faculty can effectively overcome the inherent challenges to bedside teaching in a busy, overcrowded clinical environment.

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