

How can teaching in the emergency department be augmented?



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Citation: Beigzadeh A, Maroufi M, Sharifpoor E. How can teaching in the emergency department be augmented? Journal of Emergency Practice and Trauma 2024; 10(1): 4-6. doi:10.34172/jept.2025.08.

Received: January 26, 2025 **Accepted:** April 30, 2025 **ePublished:** May 10, 2025

Dear Editor,

A significant portion of medical students' learning is dedicated to clinical education, especially in emergency medicine. Clinical rotations in the emergency department (ED) are of utmost importance, given the vital role of emergency medicine within the healthcare system (1). EDs represent the forefront of medical care, frequently addressing life-threatening circumstances that necessitate swift decision-making, advanced clinical expertise, and the capacity to operate effectively under pressure (2). Familiarizing medical students with this high-stakes environment provides them with critical competencies, including acute care management, collaborative teamwork, and proficient communication skills, all of which are relevant across various medical disciplines. In this regard, the Society for Academic Emergency Medicine outlines a four-year curriculum for emergency medicine training. First-year students learn basic first aid, cardiopulmonary resuscitation (CPR), and the local Energy Management System (EMS) system. Second-year students apply pathophysiology to acute presentations and practice diagnostic skills. Third-year students refine history-taking and examination techniques, working with residents in lower-acuity areas and beginning differential diagnoses. Throughout, students focus on professionalism, communication, and teamwork as they prepare for future roles in emergency medicine (3,4).

Medical teachers should consider this curriculum to implement a structured approach to teaching medical students during their clinical rotations in the ED to optimize the educational experience. This section will succinctly identify the key elements contributing to effective ED teaching.

Planning

The significance of preparation cannot be overstated as it is essential for facilitating effective educational rounds and enhancing the endeavors of medical teachers in the clinical setting. It is important for medical teachers to familiarize themselves with the clinical curriculum and to establish specific objectives for each session of ED training (5). Therefore, these critical components prior to conducting rounds are necessary. In addition, medical teachers are advised to identify the most suitable instructional modalities for achieving the objectives of each teaching session. These instructional modalities may include lectures, web-based or computer-assisted learning modules, simulations, small group discussions, procedural laboratories, and bedside teaching.

Students' orientation

The ED provides immediate medical treatment for acute illnesses and injuries; thus, teaching medical students has inherent difficulties. In order to augment teaching in the ED, it is necessary to develop a structured framework for students. The medical teacher should orient students and take into account activities like "selecting patients," "preparing them," "clarifying roles," "detailing round structures," and "outlining dos and don'ts." This preparation builds student confidence for clinical encounters, with patient selection being central to the educational experience (6). It is important to mention that in high-volume, critical situations like ED, prioritizing acutely ill patients needing immediate attention or clinical decision-making is vital (7). Medical teachers must invest time preparing learners, ideally through an orientation meeting. Students must be cognitively and emotionally



ready for the ED round. It is ideal to elaborate on session objectives and expectations.

Clinical experience

The clinical exposure of medical students within the ED is crucial for developing diagnostic and procedural competencies. Effective organizational strategies encompass active participation in clinical procedures and discussions of case studies. Incorporating educational models and simulation training equips students with the necessary skills to navigate real-world clinical situations, ensuring a thorough educational experience. Research suggests that educational models can assist medical teachers in delivering structured bedside teaching, thereby enhancing the learning experience for medical students during clinical interactions (8). Throughout the years, numerous models have been established to assist medical teachers in facilitating practical bedside teaching sessions. Among these, the COX model (9) and the Garout model (10) have emerged as two notable models that have garnered significant recognition.

Feedback and evaluation

Advancement towards proficiency is contingent upon assessing current performance, accompanied by recommendations for further development and enhancement. Much of this evaluative process occurs at the bedside, where medical teachers and students collaboratively assess patient care. Daily evaluations can be integrated with summative assessments conducted after the rotation, offering immediate and comprehensive evaluations of the student's performance (11). Although daily evaluations require considerable time investment, they enable students to adjust their behaviors throughout the rotation (12). Specific evaluation methods must be established in conjunction with the formulation of each learning objective. A structured approach to feedback and evaluation is necessary to facilitate optimal learning within a just environment. Wood reviews effective strategies for delivering feedback to students (13).

Both positive and negative feedback can reinforce and alter clinical performance. When providing feedback to students, it is crucial to focus on the behavior rather than criticize the individual (14). Students may also be encouraged to engage in self-reflection to assess their performance (15).

In summary, the clinical education of medical students within the ED is crucial for developing vital skills in acute care, teamwork, and communication. Adopting a structured pedagogical framework by medical teachers can significantly improve the educational experience during clinical rotations. Essential components of this framework include meticulous planning, practical orientation for students, active engagement in clinical procedures, and the integration of educational models alongside

simulation training. Ongoing feedback and evaluation are fundamental in steering students toward achieving proficiency, facilitating immediate modifications, and comprehensive performance assessments. Fostering a supportive learning environment characterized by constructive feedback that encourages self-reflection and personal development further enhances the educational experience. Ultimately, a well-organized and adaptive teaching strategy in the ED prepares medical students for the challenges they will face in emergency medicine and equips them with transferable skills relevant to various medical specialties. This holistic approach ensures that students graduate as competent and confident practitioners capable of effectively managing the complexities of patient care in high-pressure situations.

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Competing Interests

None.

Ethical Approval

None.

Funding

None.

References

- Anderson ES, Hsieh D, Alter HJ. Social emergency medicine: embracing the dual role of the emergency department in acute care and population health. *Ann Emerg Med.* 2016;68(1):21-5. doi: [10.1016/j.annemergmed.2016.01.005](https://doi.org/10.1016/j.annemergmed.2016.01.005).
- Alorayf AE, Alsaleh AA, Alrubaia BM, Al Jamish YA, Alyami AS, Al Aldbey HH, et al. Innovation in crisis: how emergency medicine is reshaping nursing roles. *J Surv Fish Sci.* 2023;10(5):62-8. doi: [10.53555/sfs.v10i5.2199](https://doi.org/10.53555/sfs.v10i5.2199).
- Johnson GA, Pipas L, Newman-Palmer NB, Brown LH. The emergency medicine rotation: a unique experience for medical students. *J Emerg Med.* 2002;22(3):307-11. doi: [10.1016/s0736-4679\(01\)00497-8](https://doi.org/10.1016/s0736-4679(01)00497-8).
- DeBehnke DJ, Restifo KM, Mahoney JF, Coates WC. Undergraduate curriculum. SAEM Undergraduate Education Committee, Society for Academic Emergency Medicine. *Acad Emerg Med.* 1998;5(11):1110-3. doi: [10.1111/j.1553-2712.1998.tb02672.x](https://doi.org/10.1111/j.1553-2712.1998.tb02672.x).
- Celenza A, Rogers IR. Qualitative evaluation of a formal bedside clinical teaching programme in an emergency department. *Emerg Med J.* 2006;23(10):769-73. doi: [10.1136/emj.2006.037796](https://doi.org/10.1136/emj.2006.037796).
- Beigzadeh A, Adibi P, Bahaadinbeigy K, Yamani N. Strategies for teaching in clinical rounds: a systematic review of the literature. *J Res Med Sci.* 2019;24:33. doi: [10.4103/jrms.JRMS_460_18](https://doi.org/10.4103/jrms.JRMS_460_18).

7. Gonzalo JD, Heist BS, Duffy BL, Dyrbye L, Fagan MJ, Ferencik G, et al. The art of bedside rounds: a multi-center qualitative study of strategies used by experienced bedside teachers. *J Gen Intern Med.* 2013;28(3):412-20. doi: [10.1007/s11606-012-2259-2](https://doi.org/10.1007/s11606-012-2259-2).
8. Yamani N, Delzende M, Adibi P, Beigzadeh A. An educational model to teach at the bedside: a qualitative exploratory descriptive study. *Res Dev Med Educ.* 2023;12(1):25. doi: [10.34172/rdme.2023.33143](https://doi.org/10.34172/rdme.2023.33143).
9. Cox K. Planning bedside teaching--2. Preparation before entering the wards. *Med J Aust.* 1993;158(5):355-7. doi: [10.5694/j.1326-5377.1993.tb121800.x](https://doi.org/10.5694/j.1326-5377.1993.tb121800.x).
10. Garout M, Nuqali A, Alhazmi A, Almoallim H. Bedside teaching: the meeting-to-meeting model. *Creat Educ.* 2016;7(11):1545-50. doi: [10.4236/ce.2016.711159](https://doi.org/10.4236/ce.2016.711159).
11. Branch WT Jr, Paranjape A. Feedback and reflection: teaching methods for clinical settings. *Acad Med.* 2002;77(12 Pt 1):1185-8. doi: [10.1097/00001888-200212000-00005](https://doi.org/10.1097/00001888-200212000-00005).
12. Paukert JL, Richards ML, Olney C. An encounter card system for increasing feedback to students. *Am J Surg.* 2002;183(3):300-4. doi: [10.1016/s0002-9610\(02\)00786-9](https://doi.org/10.1016/s0002-9610(02)00786-9).
13. Wood BP. Feedback: a key feature of medical training. *Radiology.* 2000;215(1):17-9. doi: [10.1148/radiology.215.1.r00ap5917](https://doi.org/10.1148/radiology.215.1.r00ap5917).
14. Tavakol M, Scammell BE, Wetzel AP. Feedback to support examiners' understanding of the standard-setting process and the performance of students: AMEE Guide No. 145. *Med Teach.* 2022;44(6):582-95. doi: [10.1080/0142159x.2021.1993164](https://doi.org/10.1080/0142159x.2021.1993164).
15. Heydari S, Beigzadeh A. Medical students' perspectives of reflection for their professional development. *BMC Med Educ.* 2024;24(1):1399. doi: [10.1186/s12909-024-06401-2](https://doi.org/10.1186/s12909-024-06401-2).