

## Bedside teaching: An indispensable tool for enhancing the clinical skills of undergraduate medical students

Amber Shamim Sultan

### Abstract

Bedside clinical teaching, an important component of clinical training, was widely practised during the 1960s and early 1970s, but has since declined significantly. It is considered a valuable tool in medical education by both students and faculty members. Its frequently delivered by consultants, but junior doctors seem to be more engaged in this form of clinical teaching, and their value in this respect is becoming more widely recognised. With the current demands placed on the time of consultants, junior doctors are being considered a valuable resource for conducting bedside teaching. It has generally been observed that students want more bedside teaching sessions and some consultants are willing to facilitate more sessions and are of the opinion that these sessions have more educational value in terms of learning different clinical skills, but due to time constraints and other administrative workload, bedside teaching has been declining and disappearing from the medical curricula. So, there is a need to bring significant changes at institutional as well as hospital levels. The current review article was planned to highlight the significance of bedside teaching sessions as a unique educational tool, strategies to improve bedside teaching and different bedside teaching models to be applied in a clinical setting. Databases searched included Cardiff University Library Catalogue, PubMed, Google Scholar, Web of Knowledge and Science Direct.

**Keywords:** Bedside teaching, Importance of bedside teaching, Issues in bedside teaching, Strategies to improve bedside teaching, Clinical teaching, New models for bedside teaching.

### Introduction

Famous Sir William Osler cited that to study "the phenomena of disease without books is to sail an uncharted sea, whilst to study books without patients is not to go to the sea at all".<sup>1</sup>

Aga Khan University Hospital, Karachi, Pakistan.

**Correspondence:** e-mail: ams\_21y@hotmail.com

Bedside teaching (BST) is defined as "teaching in the presence of patient" and is the core teaching strategy during clinical years.<sup>2</sup> It is one of the ideal clinical teaching strategies in which history-taking and physical examination skills, along with professional attitude, can be combined to provide a holistic approach in the diagnostic process and in patient care. Apart from that, it can also improve learners' communication skills and knowledge of clinical ethics. It also permits students to develop empathy with the patients as they proceed through different clinical years. Later on, these important skills can be applied directly in the real patient care setting.<sup>2</sup> Research studies reveals that the time spent on BST has declined since 1978 from 75% to 16% today.<sup>3</sup> Undergraduate medical students and postgraduate trainees believe that BST is a valuable tool, but it is underutilised due to several reasons.<sup>4</sup>

Traditionally, BST has always been considered a primary teaching modality in which most aspects of clinical practice can be demonstrated and trained.

In clinical medicine, 56% patients' problems can be correctly diagnosed at the end of a comprehensive history; this rises to 73% by the end of the physical examination.<sup>5</sup> Unfortunately, it has been neglected to a level that the clinical skills of young doctors have been seriously compromised.<sup>6</sup> Although it is considered as the most effective technique for teaching clinical and communication skills, but in reality, with the passage of time, its quality seems to be gradually declining and disappearing from the medical curricula. The wealth of bedside teaching opportunities is diminishing with rapid discharges, overabundance and over-reliance on technology.<sup>7</sup> Clinical teachers usually do not have any briefing on the clinical curriculum to be taught and even less on the clinical teaching method. Since most clinicians agree that clinical teaching is necessary, despite the abundance of obstacles, teaching tips may help faculty gain confidence to start moving their teaching from tutorial rooms to the patient's bedside.

The 12 tips simplify key strategies that can be carried out before, during and after rounds.<sup>8</sup>

**Twelve Tips to improve bedside teaching**

1. Planning is a key element for conducting effective rounds and increasing teacher comfort at the bedside.
2. Draw a roadmap of what you plan to achieve at the bedside for each encounter.
3. Negotiate goals and objectives of the session
4. Introduce yourself and the team to the patient; emphasise the teaching nature of the encounter.
5. Role-model a physician-patient interaction.
6. Keen observation is a necessary part of learner-centred bedside teaching.
7. Challenge the learners' minds without humiliating, augmented by gentle correction when necessary.
8. Inform the learners what they have been taught.
9. Leave ample time for queries and further clarification if needed, assign further readings etc.
10. Ask about good and bad things about the session.
11. Reflect on what went well and what went wrong and what would you do the next time.
12. Start preparing yourself for the next teaching session with insights from the reflection phase.

There are other teaching modalities such as lectures, tutorials and discussions that can contribute to learning and training of students. However, a valuable tool for learning in the clinical setting is the ward rounds along with BST conducted by the attending. They form the cornerstone of clinical teaching, especially in Internal Medicine as well as in General Surgery.<sup>9</sup> This provides a platform where consultants can transfer their knowledge, skills and experience to the learners. Teachers teach topics relevant to the patient's condition, which may later help them in the application of theoretical knowledge into direct patient care. For teaching the clinical skills effectively, teachers must learn how to involve patients in the educational process. Besides, BST provides an excellent opportunity to students for asking relevant questions in order to obtain history and develop physical examination skills in a systematic manner. Learners can directly observe and learn a humanistic approach from an experienced clinician in the clinical setting<sup>10</sup> and can also promote active learning in real clinical setting. In this case, the facilitator can directly observe the students' clinical skills

**Table-1:** Benefits of Bedside Teaching.

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1. Provides an opportunity to demonstrate, assess history and physical examination skills
2. Establishes a forum to develop and assess professionalism
3. Improves therapeutic relationship
4. Improves patient education
5. Provides a setting for direct observation as a formal evaluative tool

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and make them correct or improve their skills then and there. BST also increases learners' motivation and professional thinking. Apart from that, it also integrates clinical, communication, problem-solving, decision-making and ethical skills.<sup>11</sup>

Several benefits of BST have been identified in literature which really helps clinicians to plan a session, which in turn leads to acquisition of important clinical skills by the students and become a competent physician and surgeon (Table-1).<sup>12</sup>

**Strategies for making the bedside teaching most effective**

Some practical tips have been described to help ease teacher discomfort at the bedside and promote effective bedside teaching.<sup>13</sup>

Preparation is a key element for conducting effective BST. It would be of great help in raising the teacher's comfort level. Teachers need to familiarise themselves with the curriculum. It is also important to discover the different levels of learners along with their prior knowledge and clinical skills.

Apart from organising workshops for the faculty on clinical skills training and teaching approaches, there are a few things that need to be kept in mind before conducting a bedside teaching session such as, planning ahead what the clinical teacher wants to achieve at the end of the session. In addition, what particular system to be taught, specific aspects to be emphasised, time to be spent with a given patient, suitable patient for bedside teaching and the main theme to be covered for that specific session.

In order to keep everyone engaged, it is also essential to plan activities accordingly. Teachers should also obtain the objectives of learners, assign roles to each of the team members, try to engage everyone and establish team ground rules.

Similarly, clinical teachers should introduce themselves to the patient, whereas patients should be oriented about the nature of bedside teaching encounter.

Intention for BST and discussion may not be pertinent to the patient's illness and it needs to be communicated to the patients. Physician-patient interaction provides a greater opportunity for teachers to be a role model for teaching professionalism as well as bedside manners. In addition, teachers should model team work and promote positive team interactions including professional interactions with nursing and other ancillary staff. Observing the learner's interaction with the patient at the bedside is a necessary part of the learner-centred BST. Learner's communication, history-taking, examination, problem-solving skills, knowledge and attitudes can better be evaluated by observation during bedside teaching encounter. Ultimately, it may help the clinicians to plan their future bedside teaching sessions. Once the BST session is finished, teachers need to summarise what was taught and learned during that particular encounter. Patient's education about their illness can be done at this stage. It is recommended to leave some time at the end of the session for questions that may need clarifications, and assign further readings for improving the student's theoretical knowledge.<sup>6</sup>

After every BST encounter, separate time should be allocated for feedback. These sessions should be brief and mainly focus on strengths and deficiencies of the recent teaching encounters.<sup>14</sup> Give positive and constructive feedback to learners. Reflections about the bedside encounter coupled with learner's feedback can help teachers to plan next encounter effectively. Preparation for the next encounter should begin with insights from the reflection phase. By keeping these strategies in mind, Clinical faculty can efficiently overcome the inherent challenges that they may encounter while conducting a bedside teaching session in a busy and overcrowded clinical environment.

#### **Model for Best Bedside Teaching Practices'**

A model was developed by Janicik and Fletcher,<sup>15</sup> after thorough review of relevant literature<sup>7</sup> and input gathered from the workshop participants. This model includes three domains: attending to patient's comfort, focussed teaching, and group dynamics. Each of the three domains has specific goals and skills. The first domain is to remain patient-centred and respectful, which would maximise positive outcomes for both learner and patient. It begins with a suggestion to ask the patient ahead of time. This strategy serves some

important purposes such as allowing patients to have more control over their hospital course, and patients can be told what to expect in terms of duration, participants and purpose.

An introduction of all the students attending the BST session serves two purposes: some patients prefer it<sup>16</sup> and learners are more invested in the process if they are identified by name rather than as 'the student or resident'. Hearing a brief overview of the patient's history can be accomplished by either the attendant or by the patients themselves.

Avoid using any technical language that cannot be understood by the patient,<sup>13</sup> and explain the findings related to the disease directly to the patient.<sup>17</sup> In order to minimise the risk of confusing the patient with an unlikely differential diagnosis, teaching should be based on data related to the patient involved in the bedside teaching session.

The purpose of domain two is to conduct an effective teaching session in a focussed manner that is relevant to individual patients' and learners' needs.

#### **Five-Step Micro Skills Model**

Neher et al. proposed a five-step model that employs simple, discrete teaching behaviours or microskills. This model can be used as a framework for most clinical teaching encounters as the model comprises specific skills (Table-2).<sup>18</sup>

This model is adapted for teaching at the bedside. The model is used effectively and efficiently to assess, instruct and to give feedback. It involves three major steps:

- Diagnose the patient, diagnose the learner and targeted teaching. Diagnose the patient can best be done by listening to the patient's history from the student and watching students while performing physical examination at the bedside, or by getting this information from the patient.
- Diagnose the learner by directly observing a student's communication and physical examination skills or by asking questions relevant to the patient's condition.

**Table-2:** Five-Step Micro Skills Model.

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o Asking for a commitment,
o Probing for underlying reasoning
o Teaching of general rules
o Reinforcing what was done or providing positive feedback
o Correcting mistakes.

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- The information gathered about the learners is then used to target the teaching to their specific needs.

To keep the entire group active during the session is the ultimate purpose of domain three. This is critical to the success of a bedside teaching encounter. Skills used include: setting goals (both as a group and individually) before entering the room and setting a time limit. All participants should have some role in the encounter. Once in the room, the teacher needs to pay attention to the entire group (learners, patients, others in the room). Group dynamics should be maintained. Patients should be encouraged to ask relevant questions and tell the important information related to their disease. The last step would be to review the session with the entire group and to answer any queries and concerns raised.

A variety of strategies has been proposed to provide some counterbalance to the increasing decline in BST. Some researchers proposed that faculty's attitude towards BST needs to be changed. It seems that educational interventions can change the amount of time spent on bedside teaching from less than 1% to 41% in one study.<sup>19,20</sup>

For making the clinical teaching more effective, there is a need to give some incentives/rewards for facilitating the clinical teaching. It is also required to improve teaching skills through faculty development workshops along with the resident training initiatives as clinicians and senior residents are basically involved in clinical teaching of undergraduate medical students.

It should be mandatory to take permission from the patient before conducting BST. Explaining the purpose of a BST encounter to a patient and requesting permission to observe or examining the patient were identified as important signs of respect that foster trust and cooperation.<sup>20</sup> The patient must be informed of the dual purpose of bedside session (i.e., patient care and teaching). Likewise, it would be beneficial to include the patient in group discussions during bedside teaching and inform the patient about his/her care. Respect the learner-patient relationship, reduce service caps on the number of patients admitted and/or managed, reduce or eliminate competing demands on faculty such as outpatient clinical duties and research responsibilities, and enhance institutional recognition of teaching with legitimate rewards for excellence in teaching.

### **The learning triad**

The BST learning triad comprises patients, students and tutors. All three of them must be present and BST must occur within a clinical environment. Each member brings his or her own value to the learning triad. An effective learning environment requires all three group members to work together in order to make BST more effective and conducive to learning.<sup>21</sup>

The obstacles that may reduce the effectiveness of BST can be categorised by each group in the learning triad.

#### **Patient**

Patients should be actively involved in BST and are the foundations of this type of learning. Educators and medical students assume that BST may put patients under stress and embarrass them.<sup>18</sup> To overcome the barriers related to patients, it is essential that the patient's role be changed from being an interesting case into an active participant who can easily discuss, interrupt and offer deep and broad insights into the illness and they must be well informed prior to the teaching session. It is equally important to respect the learner-patient relationship and patient's autonomy. At the end of the session, it is imperative to ask for feedback from patients and is equally beneficial for students when assessing their performance in such sessions.<sup>22</sup>

#### **Student**

Students play an essential role in BST. They contribute to BST by strengthening its effectiveness through positive preparation prior to going on rounds and seeing patients. Apart from obtaining knowledge and being prepared before entering in the teaching environment, it is essential that students should have very strong communication skills in order to relate to patients and to collaborate with them.<sup>20</sup> For making the BST session more effective, students need to set their learning goals for that particular session and further to discuss it with their attending. Giving students the opportunity of being part of the managing team is an essential step that cannot be ignored.

#### **Clinician as Tutor**

The attending physician must have appropriate clinical knowledge and be a master in the required clinical skills of a competent clinical educator. In addition, clinicians should encourage students to get actively involved in discussions and allow them to be proactive learners.

Effective teaching depends mainly on the teacher's communication skills, particularly in terms of questioning and giving good explanations as well as formative feedback.<sup>22</sup>

The following four key concepts have been proposed that need to be considered before conducting a BST session. For avoiding any hurdles,<sup>20</sup> it is the responsibility of a tutor to make the BST session;

### 1. Trainee-specific

Ask trainees to identify their own learning goals and then conduct BST on the basis of these identified goals.

### 2. Disease-specific

Select the specific topic prior to BST and let both the trainer and the trainees read it thoroughly by using an updated resource

### 3. Patient-specific

Choose patients whose conditions have high educational value in the ward prior to BST.

### 4. Prepare mentally

Take steps to be mentally prepared for many different tasks that might take place during BST.

Another strategy that can be used by different clinicians is to discuss the topic, starting with the basic clinical presentation and progressing to the final guidelines in diagnosis and management. This approach offers an opportunity for all students to be actively involved in the discussion.<sup>23</sup>

### The MiPLAN model

Another model was developed in 2010. The goal was to deconstruct the highly complex activities of effective clinical teachers and repackage them in a manner that would be helpful for other educators. This model encourages educators to schedule a meeting (M) with their learners before engaging in shared clinical and educational activities.

The model suggests five behaviours for the clinicians (i): introduction, in the moment, inspection, interruptions, and independent thought. It also provides a process for clinical teaching opportunities after the presentation: patient care, learners' questions, attending's agenda and next steps to follow (PLAN).<sup>24</sup>

### Meeting

It is important for all the team members to get to know

each other, discuss mutual expectations for time together such as how will patient care take place and how teaching and learning will occur.

It is also important to set agenda and consider establishing a learning contract.

### "i" behaviours for teacher

- Introduction: It is the responsibility of a teacher to introduce team, agenda and purpose of the session to patient before learner's presentations.
- In the moment: Be a focussed listener.
- Inspection: Demonstrate patient observations through visual physical examination, visual psychosocial exam, and engagement of the entire team.
- Interruptions: Minimise interruptions in the presentations
- Independent thought: Encourage independent thought to teach and assess clinical reasoning

### PLAN

Teaching opportunities: Choose one of the following:

- Patient care: Role-modelling, clarification of the history, physical examination findings, correction of clinical reasoning, communication.
- Learners' questions: Questions asked explicitly by learners or implied by their comments.
- Attending's agenda: Medical topic teaching, relevant medical literature, other areas of learning.
- Next steps: Feedback, debriefs, identify areas for deliberate practice, identify learning points to revisit as a team and move on to the next patient.<sup>25</sup>

### Conclusion

High-quality medical education is a fundamental aspect of high-quality medical care. Clinical practice involves the diagnosis and management of patients' problems on the basis of history obtained and physical examination performed at the bedside in the ward or clinic. BST seems to be gradually vanishing from medical curriculum. To cope with the increased workload of clinical faculty, a shift of some teaching responsibilities to instructors, fellows or senior residents would be of great help.

It has clearly been highlighted by different researchers that certain obstacles will remain there or even increase in the clinical setting, but BST is still appreciated by undergraduate medical students, interns, residents as well as clinical teachers. Hence, it is considered an

effective source of integration and acquisition of key clinical skills in a clinical setting. So, there is an urgent need to find out different ways to overcome these obstacles and use different strategies to make BST sessions more effective and conducive to learning.

A bedside teacher must learn how to involve patients and learners in the educational process. Maintaining a comfortable environment for all the participants, the learner, the patient and the bedside teacher, is very important. It is through this process that the learners acquire the skills of observation, communication, examination and professionalism. Medical schools should give due importance to bedside clinical teaching, and must renew and increase efforts to get ahead of this past shapers of the profession.

Clinical teaching should be carried out in the wards on real patients. BST cannot be replaced by lectures or tutorials outside the clinical environment. We cannot overlook a teaching strategy that has a long-valued history of teaching the humanistic aspect of medicine just because of time constraints and other reasons. If we really want to bring a change in BST, we need to plan it accordingly such as providing incentives to faculty conducting the session or taking a little time out from routine busy schedules for conducting the formal BST sessions. It is suggested that BST sessions should be structured well before, during and after the encounter, thereby reducing the risk of possible discomfort to the patient, the learner as well as the teacher.

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## References

- Haghani F, Alavi M. An Introduction to some new approaches in clinical education. *Iranian J Med Educ* 2011; 10: 801-6.
- Khan IA. Bedside teaching-making it an effective instructional tool. *J Ayub Med Coll Abbottabad* 2014; 26: 286-9.
- Al-Swailmi FK, Khan IA, Mehmood Y, Al-Enazi SA, Alrowaili M, Al-Enazi MM. Students' perspective of Bedside Teaching: A qualitative study. *Pak J Med Sci* 2016; 32: 351-5.
- Peters M, Cate OT. Bedside teaching in medical education: a literature review. *Perspect Med Educ* 2014; 3: 76-88.
- Sandler G. The importance of the history in the medical clinic and the cost of unnecessary tests. *Am Heart J* 1980; 100 : 928-31.
- Mackie I. The Importance of Bedside Teaching. *Canadian J Gen Internal Med* 2007; 2: 31-3.
- COX, K. Planning bedside teaching, 1: Overview. *Med J Aust* 1993; 158: 280-2.
- Ramani S. Twelve tips to improve bedside teaching. *Med Teach* 2003; 25: 112-5.
- Mackie I. The Importance of Bedside Teaching. *Canadian J Gen Internal Med* 2007; 2: 31-3.
- Castiglioni A, Shewchuk RM, Willett LL, Heudebert GR, Centor RM. A pilot study using nominal group technique to assess residents' perceptions of successful attending rounds. *J Gen Internal Med* 2008; 23:1060-5.
- Doshi M, Brown N. Whys and hows of patient-based teaching. *Adv Psych Treatment* 2005; 11: 223-31.
- Jenkins C, Page C, Hewamana S, Brigley S. Techniques for effective bedside teaching. *Br J Hosp Med (Lond)* 2007; 68: M150-M3.
- Ramani S. Twelve tips to improve bedside teaching. *Med Teach* 2003; 25: 112-5.
- Ramani S, Orlander JD, Strunin L, Barber TW. whither bedside teaching? A focus group study of clinical teachers. *Acad Med* 2003; 78: 384-90.
- Ende J. What if Osler were one of us? *J Gen Internal Med* 1997; 12 (s2): 41-8.
- Janicik RW, Fletcher KE. Teaching at the bedside: a new model. *Med Teach* 2003; 25: 127-30.
- Lehmann LS, Brancati FL, Chen M-C, Roter D, Dobs AS. The effect of bedside case presentations on patients' perceptions of their medical care. *N Engl J Med* 1997; 336: 1150-6.
- Miller M, Johnson B, Greene HL, Baier M, Nowlin S. An observational study of attending rounds. *J Gen Internal Med* 1992; 7: 646-8.
- Neher JO, Gordon KC, Meyer B, Stevens N. A five-step "microskills" model of clinical teaching. *J Am Board Fam Pract* 1992; 5: 419-24.
- Williams KN, Ramani S, Fraser B, Orlander JD. Improving bedside teaching: findings from a focus group study of learners. *Acad Med* 2008; 83: 257-64.
- Gonzalo JD, Chuang CH, Huang G, Smith C. The return of bedside rounds: an educational intervention. *J Gen Intern Med* 2010; 25: 792-8.
- Dent J, Harden RM, Hunt D. A practical guide for medical teachers: Elsevier Health Sciences; 2017.
- Spencer J. ABC of learning and teaching in medicine: Learning and teaching in the clinical environment. *BMJ* 2003; 326: 591.
- Stickrath C, Druck J, Hensley N, Maddox TM, Richlie D. Patient and health care provider discussions about the risks of medical imaging: not ready for prime time. *Arch Int Med* 2012; 172: 1037-8.
- Stickrath C, Aagaard E, Anderson M. MIPLAN: a learner-centered model for bedside teaching in today's academic medical centers. *Acad Med* 2013; 88: 322-7.