

Bedside teaching at the Cinderella status

Options for promotion

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ABSTRACT

في الآونة الحديثة، هنالك العديد من المقالات المنشورة التي توضح انخفاض المهارات السريرية لطلاب الطب، والأطباء الجدد، ويعتبر هذا الانخفاض في التعليم السريري للكليات الطبية. يهدف هذا التقرير إلى دراسة أسباب انخفاض التعليم السريري، واقتراح بعض العلاجات لهذا الانخفاض. قمت بمناقشة أسباب انخفاض التعليم السريري وتقسيمها إلى 4 مواضيع جانبية مثل طرق التعليم، وعوامل منهجية، وعوامل الأساتذة، والطلبة، والمرضى. كما نقترح بعض الطرق لتحسين حالة التعليم السريري شاملة تغيير المناهج لتقديم الطلبة سريريا بشكل أفضل للمرضى، واستخدام أماكن المجتمع الصحية، وأقسام العيادات الخارجية، كمواقع للتدريس، واستخدام مراكز المهارات السريرية، والتأثير على المرضى، والبرامج الإعلامية، لتقوية المهارات السريرية للطلبة. يعد وضع التعليم السريري سيء، ولكن هنالك آمال لتحسين هذا الوضع مع خلق حلول مبتكرة.

Recently, there are increasing published reports that there is a decline in bedside skills of medical students and young doctors. The decline is thought to be due to decline in bedside teaching in medical schools. The aim of this paper is to study the reasons of decline in bedside teaching, and to suggest some remedies for this decline. This study discusses reasons of decline in clinical teaching itemized under 4 subheadings: teaching methods and curricular factors, teachers' factors, students' factors, and patients' factors. We suggest some strategies to improve the status of bedside teaching, including curricular change to better introduce students to properly approach patients clinically, use of community health settings, and outpatient departments as teaching sites and use of clinical skill centers, simulated patient and multimedia programs to enhance clinical skills of students. The situation of bedside teaching is somewhat inadequate, but in adopting innovative solutions, there are hopes for betterment.

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Bedside clinical teaching (BST) is defined as teaching in the presence of patients. It is that part of the medical study curriculum that is directly concerned with the health problems of patients. Compared to the preclinical phase of undergraduate study, clinical teaching is the most relevant to the objective of the medical school (production of good doctors).¹ Clinical teaching is concerned with the learning of several clinical skills such as history taking, physical examination, clinical reasoning, decision making, communication, and professionalism (such as learning how to work in teams, and how to interact with the public). More than half of the patients' problems can be diagnosed after history taking, and up to 75% of these problems can be diagnosed by the end of physical examination.² For some diseases such as irritable syndrome, migraine, and epilepsy bedside skills are almost exclusively the only diagnostic tool. In addition to making a diagnosis, bedside methods are important to establish rapport with patients, to determine disease severity (and then prognosis), and it might save our patients unnecessary and expensive investigations (through identifying diseases at early stages, and ruling out irrelevant hypothesis). The initial information provided by history and examination helps doctors to select the proper and cost-effective investigations, and to rule out unnecessary expensive ones. Traditionally, bedside teaching is performed in hospital wards, but nowadays there are extra sites such as outpatient clinics, emergency departments, and primary care settings. It is needless to say that high-tech investigations cannot replace the widely available and cheap bedside skills. In many parts in the world these expensive investigations are either not known, or available only at unaffordable costs. Yet, the doctors still depend on their judgment and bedside competencies.

There is some consensus among medical educators that bedside teaching in the past 30 years is suffering from significant deficiencies that lead to its decline and poor yield.² This results in medical students and even

many doctors having deficient clinical skills compared to past generations.^{3,4} In the United States, less than 25% of clinical teaching occurs at the bedside, and less than 5% of time is spent on observing learners' clinical skills, and correcting their mistakes.^{5,6} There is more interest in advanced diagnostic technologies, rather than developing bedside skills.⁶ Some studies documented high rates of errors (up to 80%) in physical examination skills among medical schools' graduates.⁷ We performed a series of investigations to assess the status of bedside skills among medical students in Sudan, based on direct observation of skills of history taking, and physical examination.⁸⁻¹¹ A study on deficiencies of history taking documented the following defects in 30-60% of the investigated students: poor questioning, poor clarification, failure of proper initiation and control of the interview, failure of identification of major symptoms, failure of analysis of symptoms, and poor coverage of past and social aspects of the patients' problems.¹¹ Our studies on students' skills of physical examination indicated deficiencies in techniques and detection and interpretation of physical signs.⁹⁻¹¹

There is no doubt that bedside skills are declining among medical students and doctors. This may be in general, traced to our inadequate training in the undergraduate period. The question now is to investigate the immediate reasons, and to suggest some strategies to

arrest the decline in BST. We hope that this paper can make some useful contribution in this regard.

Factors leading to the decline in BST. There are numerous factors that had lead to the decline in BST such as, time constraints, size of student groups, position of bedside teaching in schools' curricula, and adverse learning environment for both teachers and students. We will discuss these causes classified into subheadings: teachers', students', patients' and teaching methods' factors. A summary of these factors is given in **Table 1**.

Patients' factors. The numbers of 'cases' available for teaching is decreasing. There is an increased rate of patients' care outside traditional teaching hospitals (at primary care units, private clinics, and insurance institutes where there are only a few students' teaching programs). Profound advances in imaging and laboratory medicine lead to a shorter length of stay of hospital patients, and then fewer 'cases' are available for students' training. Even more, some diagnostic and therapeutic procedures can now be performed as day cases in the outpatient department. The traditional teaching hospitals have become more specialized, and less suitable and welcoming for general medical education.¹² The usual situation, nowadays, is that clinical teachers select only patients with multiple physical signs, and omit patients who present without signs or with signs that do not attract teachers such as, pallor or dehydration.

Table 1 - A summary of factors leading to decline in bedside teaching.

Factors related to teaching methods

- New educational trends that values self-learning, diverting clinical teaching away from bedside
- Concentration on signs, and detection of omission of other skills
- Omission of teaching problem-solving strategies, such as hypotheses generation and testing
- Teaching of communication skills is absent in curricula and in practice
- Little time is spent by teachers at the bedside with tendency to office presentation
- More time at bedside is consumed in discussing abstract principles away from bedside skills
- Curricula crowded with scientific materials
- Absence of mid-course or in-clerkship formative tests to assess student's progress
- Lack or improper use of logbooks
- Order of clerkship in schools with integrated modules curricula

Teachers' factors

- Negative views of some teachers on bedside skills as effective diagnostic tools
- Preparedness, interest, and motivation of teachers for their job
- Increasing clinical, administrative, and research duties of teachers
- Clinical part-time teachers from outside the staff of medical schools are unfamiliar with teaching methodology
- Super specialization in narrow subjects

Student factors

- Too large numbers versus fewer teaching hospitals
- Some students believe that bedside skills can be acquired in professional or postgraduate periods
- Students view some courses as 'unpopular' including bedside sessions
- Absenteeism

Patient factors

- Increased rate of care in community health settings at the expense of traditional teaching hospitals
 - Short stay at hospitals
 - Traditional hospitals become more specialized
 - Increase of patient's awareness of their rights (consumerism)
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This results in that only a few numbers of patients are available for teaching, and then will be repeatedly used as teaching materials, and start to refuse to be seen by more students. With the increasing awareness of their rights (consumerism), patients' consent to being part of medical education is no longer to be taken for granted, both in primary and secondary care.¹³ More patients nowadays refuse to be taught upon for several reasons. Some patients simply fear to be examined by several students as they believe that this may harm their diseases. Most patients are naturally apprehensive when they come to hospitals; this apprehension is more exaggerated when they are seen by a doctor with a large group of students.¹⁴ Some patients simply dislike open discussions of their illnesses in open ward rounds in front of other patients.

From the ethical point of view, it is important to state that any patient has the right to refuse to be taught upon, and that his care should not be affected in any way. Patients should realize the certain gains of being cared of in a teaching hospital. Errors of diagnosis and management are less likely when the staff is more numerous (the critical eyes and comments of junior staff lead to deeper understanding of the patient's problem).¹⁴ The patients who dislike open discussions can be interviewed in a room adjacent to the ward. There is a possibility of including community health sites and outpatient departments as sites for BST.

Teachers' factors. An important point is the status of clinical teachers themselves (their preparedness, interest and motivation for their job). There is a reported decline in their bedside teaching skills (their teaching abilities should not always be taken for granted).¹⁵ Due to increasing clinical, administrative, and research duties of senior doctors and teachers, the frequency of bedside rounds is decreasing, and the time spent at rounds has become much shorter than in the golden era of bedside teaching.¹⁶ The BST has been taking the lowest priority in the 'agenda' of clinical teachers. The situation is further aggravated by the fact that a proportion of clinical teachers are from outside the staff of medical schools (hospital physicians) who are unfamiliar with teaching, and might need some training in teaching methodology (They do not have any briefing on clinical teaching methods, and what learning objectives are required). Some teachers find BST intimidating, boring, and baring their deficiencies by unexpected questions (from students or patients) in an uncontrolled environment full of digressions compared to lectures.¹⁶ Some teachers negatively view the role of bedside skills in diagnosis. They are less reliant on them and criticize them as lacking sensitivity for many diseases, and have not been subjected to scientific scrutiny offered

by laboratory investigations. Recently, there is a trend among clinical teachers to specialize in small areas in medicine such as rheumatology and neurology. This has led to the emergence of 'narrow generalists' with a 'tunnel vision' to his own subspecialty. Such teachers are definitely useful in teaching factual knowledge of their specialties, but the quality of their performance in BST for a wide range of patients of different specialties is lower. Even more, the sub-specialists teachers may tend to 'complicate things' by exaggerating the trivia and minutiae of their small subjects, while undergraduate students need only the basic bedside techniques (and also the basic factual knowledge).

The clinical teachers should have reasonable qualifications, abilities and experience to do their job.¹⁵ As in other disciplines, training of trainers is of utmost necessity, bearing in mind that not all those who are experienced and distinguished in their professions can be good teachers in their fields (as the teaching process is something different from managing patients in clinics). As well, the most knowledgeable doctor is not necessary the best teacher. The one who knows less, but has the ability to motivate and convey excitement what he does know is the ideal instructor.

Teaching methods and curricular factors. Some educators believe that hospital based teaching is no longer able to provide students with sufficient clinical experience of the common health problems. Thus, the traditional BST based on apprenticeship model of education alone, cannot be relied on to provide comprehensive training in clinical skills. Some educational developments such as use of problem-based learning and adoption of adult educational principles of self-directed learning and experiential learning have diverted, to some extent, teaching of clinical skills away from bedside.¹⁷

Teaching programs and evaluation methods concentrate on the detection of physical signs (with omission for teaching proper techniques of examination), and giving little weight for other clinical faculties such as, history taking, presentation, and communication skills. Teaching of history-taking is a commonly neglected art in BST in our medical schools, although it is well-known that more than half of diagnoses can be reached by performing a good history alone. Even more, we should make some changes in the assessment of clinical skills of students by including short cases of focused history taking (ability to take history of a special problem such as hematemesis, or chronic cough under direct observation of the examiner). In particular, there is omission of training students on problem solving strategies through hypothesis generation and testing. The students then, may erroneously think

that diagnosis making is a 'byproduct' of passive data collection. Teaching of communication skills is not only absent from BST, but it is not even integrated in many schools curricula.

With the multiple commitments of clinical teachers, some problems have arisen. There is only a little time spent at the bedside during clinical rounds. The teacher usually comes in the 'last minutes' to listen to a presentation of the case. This means that a little (or even no) time is spent on direct observation of the students, while he was taking the case. This will result in failure to detect the defective clinical skills at this very early phase, and then their persistence in future professional life. This may have been further aggravated by the negative view of some teachers on bedside methods as an effective clinical tool. Some teachers spend the scanty time they offer for bedside sessions in discussing abstract principles instead of clinical observations, and data gathering techniques. Sometimes, the teaching round is conducted without the patient in question even been seen (office or corridor presentation by the students).^{18,19} In many instances, an elegant presentation may follow poor student interviewing and examination techniques. The office-based clinical teaching may produce in-promptu lectures consuming the time originally allocated for teaching bedside skills.

There are some curricular issues such as teaching format, course contents, and assessment methods that might lead to decline in BST. More than 80 years ago, Peabody¹⁹ warned of the increasing volume of scientific materials to be learned in medical schools at the expense of time for clinical training. There is an increasing reliance on 'long cases' where students are not directly observed by teachers during history taking and examination. In a classical clinical round the teacher comes to the ward after one of students had taken the history, then he cannot directly observe the student while taking history and then loses the chance of immediately correcting any deficiency. Many schools do not perform 'mid-course' or 'in-clerkship' tests to assess the progress of their students, and to detect deficiencies, and then to allow remediation during the course or clerkship. In schools with traditional curricula, students' motivation for BST is rather affected by that final assessment in clinical departments, and in most medical schools they are usually held after up to 3 years from the start of clinical phase of the study. Another useful evaluating method is logbooks, which is not well established in many schools (usually left to individual decisions of teachers). It is used only (if any) to document attendance and activities of students (instead of being an information and interactive vehicle to assess and assist students' learning and staff teaching, through allowing a timely

and appropriate remediation of defective skills and deficient knowledge.

There is a problem facing students in medical schools adopting the integrated curricula (modules), that is the order of clerkships (the clinical phase of study in these schools). These schools usually divide their students in the second half of the fourth year into 3 groups to rotate every 3 months in Internal Medicine, Surgery, Pediatrics, and Obstetrics. Any student has an equal chance to start with any one of these clerkships. The students enter these clerkships without having an introductory course or module to cover the basics of clinical medicine such as, history taking and physical examination. These skills are usually learned in the course of Internal Medicine. In this case, students who start their clerkship phase with Surgery, or Pediatrics or Obstetrics suffer a lot in that they lack even simple bedside skills, especially early in the clerkship. Studies indicate that students who take first the clerkship of Internal Medicine perform better in other clerkships.²⁰ The schools with integrated curricula may need to introduce an introductory module for the whole class before being distributed to the different clerkships. Another option is to change the order of clerkship of Internal Medicine to be taken at the same time by the whole class.

Students' factors. Clinical teaching is adversely affected by the large numbers of students that are congested in a few teaching hospitals. The number of students at a bedside round have reached unprecedented figures (up to 20) at many occasions. The patients tend to refuse to be subjects for training as more than one student group may see them in the same day. This may lead to some teachers losing the interest in BST, and tend to concentrate on 'virtual' cases in offices and conference rooms. Some teachers believe that patient selection for teaching is difficult and time-consuming. The large number of students, and the concern that case presentations at bedside may make patients uncomfortable have lead many teachers to move presentations to the conference room, thus students lose a chance to learn aspects of communication, professionalism, and direct observation of the patient's signs and interactions (bedside skills). Some students believe that bedside skills can be acquired during postgraduate training (and then no need to rush themselves with 'heavy' training during undergraduate period). It has been found that there is some difficulty in correcting faulty skills after graduation (let alone their acquirement).²¹ Some students tend to frequently absent themselves from teaching bedside rounds, especially in the early course of clinical study. This early period of the clinical phase of medical study is the most crucial period, where the students are introduced to the skills of

history taking and examination. There is no doubt that absenteeism means only under achievement. Absence as low as 5% in BST sessions is found to be associated with poor performance.²² Causes of absenteeism include illness, family commitments, or even lack of interest, or motivation. Some students view some courses as 'unpopular,' and then lack the minimum enthusiasm and interest to attend them.²² Some students complain of being humiliated by teachers (such as, impossible questions, aggressive corrections and comments).¹⁶ Then the 'humiliated' students either absent themselves from the clinical sessions, or refrain from active participation, or even making inquiries.

There is always a need to assess the perception and attitudes of students toward contents, teaching methods, and teaching staff of the BST courses. A family, staff, or even psychologist's help or advice may help, and this can be carried out through formal counseling to identify and correct reasons of absenteeism. The concerned department should implement strict attendance record, and set a maximum allowable percentage of absenteeism (not exceeding 20%), above which the student should repeat the course. Use of logbooks may help to limit absenteeism in addition to their role in assessing students' performance and progress.²³ But we need to regularly assess the validity of students' filling in their logbooks.²³

Strategies to improve BST. Transition into clinical training; the need for an introductory course. The BST in medical schools usually starts after 3 years of study of pre-clinical and para-clinical sciences. The clinical teaching involves an important transition from structured learning from books and lectures to learning at the bedside in an unstructured way.^{24,25} Instead of the classroom and laboratory, students has to adapt to new learning sites such as, hospital wards, outpatient and emergency departments, and community health settings (in addition to classrooms), where they meet multiple teachers and professionals, and an endless number of patients (as a teaching material). The new learning environment lacks clear objectives (then students may not know what is expected of them), and defined syllabuses or evaluation tools that the student used to know. These factors lead to students suffering some shortcomings on transition to clinical teaching. Some students are trained by part-time consultants (from outside the school's class) who may be unprepared for teaching, and with little knowledge of the school's objectives and expectations of BST. The students complain of heavy load of work, especially in schools with traditional curricula where they start clinical training while they are studying pathology, microbiology and pharmacology. As there are stop

(summative) examinations in these subjects at the end of the year, the students opt to absent themselves from BST sessions to save time for these subjects (most commonly students may attend none, or only very few sessions in the first year of clinical teaching). The situation in schools with integrated curricula is no better. Students who start their training with Obstetrics or Surgery may lack certain basic clinical skills that are usually taught in the Internal Medicine Clerkship.

To correct these deficiencies, there is a need for a 6-10 week course (or module for schools with integrated curricula) as an Introduction to Clinical Medicine (ICM) to be taken at the start of clinical teaching. The course should be structured, based on demonstrations of history and examination on simulated, or standard, or real patients. Teaching can be for the whole class, or in groups (a format of clinical meeting or grand rounds is appropriate). Thus, we can fulfill an important objective of the ICM course that is to ensure that all students have received the same basic instruction in basic clinical skills, as well as a reasonable theoretical background necessary for bedside learning that may be omitted by uninterested or unprepared teachers. The ICM can offer the students support to overcome the training problems that arise from variations in preparedness and interest of part-time teachers during the coming periods. The ICM course can include pertinent factual knowledge on basic investigations and imaging, practical therapeutic, and diagnostic procedures and pathophysiology of disease symptoms and signs (without it, we cannot interpret these findings and then make and test hypotheses in order to make certain diagnosis). For example, we cannot identify a valve lesion without factual knowledge on different murmurs and their sites, timing, and other properties. Also, it is important to include a short nursing attachment (one week) to the ICM course. In addition to grasping the ABCs of nursing skills, students can realize at an early stage the importance of teamwork in patients' care, and to stifle at birth any temptation at medical arrogance.

BST outside traditional teaching hospitals. Medical students are rapidly increasing beyond the capacities of traditional teaching hospitals. There are changing pattern of patients' care with a large number of patients being cared for in community health settings. The hospital stay of patients has decreased due to advanced investigations and technologies. The large teaching hospitals are increasingly becoming more specialized, and then less friendly and welcoming for general undergraduate training. All these factors have lead to traditional hospitals being less useful in providing clinical training, and clinical educators searching for other sites for BST. Among these sites are community

health settings (such as, health centers, rural, or district hospitals), and outpatient and emergency departments.

Despite the fact that primary health care is the foundation of any national health system, clinical educators have not used it in a wide pattern in many schools for a long time. But recently, there is an increasing shift toward using PHC units as sites for clinical teaching. In Britain, half of medical schools have some primary care input in teaching clinical skills. Teaching in community settings has the advantage that students are trained in sites similar to their future working environments (as most doctors will work outside traditional hospitals in the future). It is hoped that undergraduate training in community settings may change the negative image towards working in these sites that prevail among students and doctors. They believe that working there may impair their professional progress. Students need to be assured that the purpose of training in community health settings is to acquire clinical skills, and to see different ranges of diseases and working conditions outside traditional hospitals (and has nothing to do with their future careers).²⁶ In fact, the small groups and the perceived friendliness in community settings and rural and district hospitals are favorably valued by students and teachers. Some studies suggest that clinical skills can be acquired at most in community settings as in hospitals.²⁶ The students taught in community settings claim that they have gained confidence talking to patients and in understanding the importance of the doctor-patient relationship.²⁶ However, the community setting as a site for training is not without drawbacks. There is a wide variation in quality of teaching due to variation in interest and motivation of staff involved in teaching at these sites.

The outpatient departments (whether for follow up for old and chronic conditions, or as emergency and accident clinics) can provide rich, and varied opportunities for teaching.²⁷ This is due to the acute nature of the work, and the prompt decisions needed there.²⁷ Also, the outpatient department is the setting that receives most patients, and also is the site where health personnel spend most of their time.²⁸ However, there are some factors that, to some extent, may adversely affect the usefulness of outpatient departments in clinical education. Most of the work especially in emergency units is performed by inexperienced, unprepared, and less motivated junior staff.²⁷ Some teachers complain that there is no enough time or space, or that teaching may slow the work. Students in the emergency departments may feel that they actively participate in doing useful things, such as stitching a small wound, or inserting an intravenous line. For effective teaching in outpatient departments there is a need to provide adequate time,

enough dedicated space, otherwise, clinical teaching may impair and interfere with the work rate there.

Clinical skills' laboratories. As BST suffers considerable deficiencies (as stated above), the traditional BST based on the apprenticeship model of education alone, cannot be relied on to provide comprehensive training in clinical skills.²⁹ This situation had lead medical educators to think of alternative options to maintain betterment of clinical skills among medical students. Among these options was the introduction of clinical skills' centers to promote (but not to replace) BST. A skill's laboratory is no more than a space to learn, and teach all sorts of clinical skills disregarding the type of curriculum, and for all health sciences, including the paramedical personnel. The clinical skills' laboratories from the educational point of view have the advantage of variation of tools of learning (instead of sticking only to hospital patients) in an optimized, easily controlled environment, where a student has no fears of harming, disturbing or embarrassing patients, or disturbing him by frequent rehearsal of certain skills. There is a possibility of immediate feedback and pauses between demonstrations that allow emphasis of important points, and explanation variations (this might not be possible among hospital patients). At the present time, medical educators should consider teaching at skills' centers as an initiation phase and promoter (skills refining), and as an alternative to traditional BST. In fact, despite the changes in clinical settings, bedside teaching is essential for observation and demonstration of physical examination, medical interviewing, and interpersonal skills. The structure, teaching and assessment methods of learning in clinical skills' laboratories are fully detailed in a published review article.³⁰

Simulated and standardized patients. The unavailability of enough real cases of different varieties in the proper time has lead educators to search for alternative simulators (simulated and standardized patients).^{31,32} Simulated patients are people who volunteer themselves for students to practice their techniques on (through acting certain clinical scenarios). They rarely show any abnormal signs. Standardized patients are real patients with real clinical signs who are trained to teach, assess, and give feedback to students. The distinction between simulated and standardized patients is rather vague, and these 2 words are often used interchangeably. In addition to provide teaching materials for clinical training, the simulators provide a low risk, high fidelity simulated environment that can enhance clinical skills' learning, but should not replace BST. Simulators also can provide good training on the choreography of physical examination, increasing students' confidence with their techniques.⁶

Multimedia. Our medical students and doctors show some interest in the use of the internet and its applications (though facing some difficulties that can be resolved by time).^{33,34} Use of multimedia (with or without access to internet) can be used effectively in clinical education. In addition to live demonstrations, other multimedia methods include slide shows, computerized animations, and videotapes. These methods will further students' abilities to strengthen their clinical skills, and encourage them to engage in deliberate practice in a short and suitable time, and with little teacher involvement.

In conclusion, medicine as a study is a university course that qualifies its graduates to a specific profession that needs certain skills to be learned properly in order to achieve a safe, and useful practice. Among these skills, bedside skills is the most important and the most relevant in professional practice. There is a consensus among clinical educators that bedside skills are declining among both students and doctors due to many factors. The decline in clinical skills is manifested in the performance of students and doctors in examination and practice, in addition to loss of confidence in their clinical experience. Any effort should be made to reinstate BST as a leading component in medical education as the most effective method to teach clinical skills. Regular curricular changes and reforms are needed to promote and clear any emerging deficiencies in BST. There should be no limits or 'red lines' for such reforms, except for the benefit of students. Examples of curricular reforms include order of a clerkship or a course, introducing new courses, having elective (extra-curricular) study, or training periods in case of overcrowded curricula, and new methods of assessments. We should remember always that there are old-fashioned decision makers who insist to resist major, or even minor changes.

The decline in students' skills had lead medical educators to think of alternative options to maintain betterment of clinical skills among medical students. Among these options are; teaching outside traditional hospitals, skills laboratories, and use of simulators. Teaching outside the traditional hospitals is now widespread, but there is a real need to assess its outcome. But nevertheless, it can significantly contribute to undergraduate medical education in the area of clinical skills teaching. We only expect good clinical teaching in community setting if the junior staff there is motivated, and interested in teaching. Outpatient departments are a poorly utilized source of clinical teaching. Even the few numbers of students who go there are not actively involved, and only 'inspect' other health personnel. Curricular changes, and providing adequate space and time can lead to betterment of outpatient departments as BST sites. As in other disciplines, there is a need to

improve the skills of clinical teachers themselves, and to establish a learning climate that encourages teachers to admit their limitations. Apart from proper qualifications and experience, clinical teachers need commitment and flexibility to carry out their job. The acceptance and willingness of patients to be involved as teaching materials should not be taken for granted. Instead, we should seek methods to promote patients to participate, and they should be assured that teaching does not harm their safety in anyway.

Technology and not the stethoscope as in the past symbolize today's doctors. Looking for an example, at a TV advertisement of a modern medical center, instead of doctor sitting beside a patient, it usually shows a high technology MRI or CT machine.³⁵ Instead of resistance or initiating a conflict between clinical methods and technologies, we should enhance the role of advanced investigations and imaging techniques in increasing the precision, and power of the clinical methods to make causal inferences (and then improving accuracy of diagnosis and prognosis.

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References

1. Spencer J. Learning and teaching in the clinical environment. *BMJ* 2003; 326: 591-594.
2. K Ahmed Mel-B. What is happening to bedside clinical teaching? *Med Educ* 2002; 36: 1185-1188.
3. Rolfe IE, Sanson-Fisher RW. Translating learning principles into practice: a new strategy for learning clinical skills. *Med Educ* 2002; 36: 345-352.
4. Sorrentino S Jr. Guidelines for bedside teaching. *Am J Med* 2009; 122: e11.
5. Shankel SW, Mazzaferri EL. Teaching the resident in internal medicine. Present practices and suggestions for the future. *JAMA* 1986; 256: 725-729.
6. Peixoto AJ. Birth, death, and resurrection of the physical examination: clinical and academic perspectives on bedside diagnosis. *Yale J Biol Med* 2001; 74: 221-228.
7. Ortiz-Neu C, Walters CA, Tenenbaum J, Colliver JA, Schmidt HJ. Error patterns of 3rd-year medical students on the cardiovascular physical examination. *Teach Learn Med* 2001; 13: 161-166.
8. Ahmed AM. Deficiencies of history-taking among medical students. *Saudi Med J* 2002; 23: 991-994.
9. Ahmed AM. Deficiencies of physical examination among medical students. *Saudi Med J* 2003; 24: 108-111.
10. Ahmed AM. Deficiencies of physical examination of the nervous system among medical students. *Neurosciences* 2004; 9: 447-449.
11. Ahmed AM. Deficiencies of physical examination of cardiovascular system among medical students. *Saudi German Hosp Med J* 2007; 2: 183-187.
12. Lewkonja R. The functional relationships of medical schools and health services. *Med Educ* 2002; 36: 289-295.

13. Monnickendam SM, Vinker S, Zalewski S, Cohen O, Kitai E. Patients' attitudes towards the presence of medical students in family. *Isr Med Assoc J* 2001; 31: 903-908.
14. Teaching on patients. *Br Med J* 1966; 2: 1605-1606.
15. Ramani S. Twelve tips to improve bedside teaching. *Med Teach* 2003; 25: 112-115.
16. Ramani S, Orlander JD, Strunin L, Barber TW. Whither bedside teaching? A focus-group study of clinical teachers. *Acad Med* 2003; 78: 384-390.
17. Stark P, Fortune F. Teaching clinical skills in developing countries: are clinical skills centres the answer? *Educ Health (Abingdon)* 2003; 16: 298-306.
18. Morgan W, Engel G, Luria M. The general clerkship. *J Med Educ* 1972; 47: 556-561.
19. Peabody FW. Landmark article March 19, 1927: The care of the patient. By Francis W. Peabody. *JAMA* 1984; 252: 813-818.
20. Reteguiz JA, Crosson J. Clerkship order and performance on family medicine and internal medicine National Board of Medical Examiners Exams. *Fam Med* 2002; 34: 604-608.
21. Wiener S. Ward rounds revisited. *J Med Educ* 1974; 49: 352-356.
22. Wali M. Attendance and academic performance in clinical teaching. *J Irish Coll Phy Surg* 2002; 31: 210-212.
23. Raghoebar-Krieger HM, Sleijsfer D, Bender W, Stewart RE, Popping R. The reliability of logbook data of medical students: an estimation of interobserver agreement, sensitivity and specificity. *Med Educ* 2001; 35: 624-631.
24. Grover M. Priming students for effective clinical teaching. *Fam Med* 2002; 34: 419-420.
25. Carroll M. The relevance of basic science learning objectives to clinical practice. *Med Educ* 2003; 37: 946-947.
26. Brown JL, Clark JM, Houston TK, Levine R, Branch W, Clayton, et al. A national collaboration to disseminate skills of outpatient teaching in internal medicine. *Acad Med* 2006; 81: 193-202.
27. Robin T, Driscoll P, Nicholson D. Recent Advances: Teaching in accident and emergency medicine: 10 commandments of accident and emergency radiology. *BMJ* 1995; 310: 642-648.
28. Lesky L, Hershman WJ. Advantage of OPD as a teaching site. *Arch Int Med* 1995; 155: 897-904.
29. Dent J. Adding more to the pie: The expanding of activities of clinical skills. *Soc Med* 2003; 95: 405-411.
30. Ahmed AM. Role of clinical skills' centres in promoting clinical teaching. *Sud J Pub Hlth* 2009; 4: 348-353.
31. Stamper DH, Jones RS, Thompson JC. Simulation in health care provider education at Brooke Army Medical Centre. *Mil Med* 2008; 173: 583-587.
32. McLaughlin SA, Doezema D, Skylar DI. Human simulation in emergency medicine training. *Acad Emerg Med* 2002; 9: 131-138.
33. Ahmed AM, Yousif E, Abdalla ME. Use of the Internet by the Sudanese doctors and medical students. *East Medit Hlth J* 2008; 14: 134-141.
34. Ahmed AM, Yousif E. Problems and factors that influence use of internet by Sudanese doctors. *Sudanese Journal of Public Health* 2007; 2: 177-182.
35. Ende J, Fosnocht KM. Clinical examination: still a tool for our times? *Trans Am Clin Climatol Assoc* 2002; 113: 137-150.

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