MEDICAL EDUCATION

Maximising the effectiveness of undergraduate teaching in the clinical setting

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Teaching is an integral part of the job for most consultants and yet few have received any kind of formal training in how to "teach". Most consultants have been involved in teaching junior staff for many years, but with the development of Calman training, expectations of structured, well organised, postgraduate education are rising. Some Royal Colleges are suggesting that trainees will only be placed with consultants who have undergone formal teacher training. Others are suggesting that a fixed quota of continuing medical education (CME) credits (perhaps 10%) should be related to teacher training activities. As medical student numbers increase, more consultants are being asked to teach undergraduates. The new service increment for teaching contracting arrangements mean that expectations of undergraduate teaching quality are also higher than in the past and, as with postgraduate training, monitoring and review of the teaching provided is becoming the norm. Teaching in the broadest sense involves many other activities; it may range from teaching patients and their relatives about health and illness in order to increase understanding and improve compliance with treatment, through to making presentations to trust boards and service purchasers about the effectiveness of one's own particular service in order to gain additional funding or at least protect current income.

Many of the available teacher training opportunities focus on the planning and delivery of lectures, seminars, and small group tutorials, with less attention paid to clinical bedside teaching. However, medical students and trainees need to acquire clinical skills as well as knowledge. The only way they can acquire these is by observation of experienced clinicians and opportunities for observed practice followed by constructive feedback and more practice.^{1 2} Clinical skills centres can provide opportunities for practising skills away from wards and patients but, at some stage, students have to start examining patients in the real clinical world.

Teaching in the clinical setting also provides opportunities for the integration of theoretical knowledge with practical skills. The learners are more actively involved in applying theoretical knowledge and there is evidence that this active participation is a more effective means of learning.³ Learning in the clinical setting with

the immediate relevancy of topics tends to increase interest and motivation to learn. This can also provide the ideal situation in which to tackle sensitive ethical issues and to address the role of teamwork and the involvement of other disciplines.

Every consultant has a duty and the capacity to teach effectively. Many "traditional" clinical and bedside teaching activities can be undervalued and are yet vital for the acquisition of clinical skills in student doctors. Everyday clinical practice provides invaluable and under-used resources for teaching both students and trainees. Minor modifications in the way that services are provided and more advance planning could improve dramatically the clinical teaching offered without necessarily taking too much time away from patient care. The aim of this paper is to introduce some ideas about teaching that, if adopted, would make more effective use of the clinical workplace as a teaching environment.

Difficulties of teaching in the clinical setting

Every year, the division of paediatrics and child health at the University of Leeds School of Medicine runs a one day workshop for all consultant staff involved in teaching medical students. Consultant teachers are kept up to date with developments in the curriculum and provided with feedback on their teaching and on student performance. A major part of each day is a session on teacher training. Recently we have focused on teaching in the clinical setting because of concerns from consultant colleagues about the difficulties of teaching effectively in a busy clinical practice. Many of the ideas presented here arose from these workshops. Our discussions about how to overcome some of the difficulties encountered in teaching in the busy clinical setting produced ideas in four main clinical areas: teaching on ward rounds, teaching in outpatients, the use of on call time, and the structuring of students' private study time.

It was also clear that for effective teaching to take place, clinical teachers need to have a basic knowledge of the overall shape of the curriculum, what learning relevant to paediatrics might already have taken place, and the specific objectives for learning in paediatrics.⁴

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Teaching on ward rounds

Ward rounds provide opportunities to structure teaching and identify the level of knowledge of the learners. Opportunities also are present to involve a multidisciplinary approach using the situation to teach not only medical staff but students, nurses, and even parents.⁴

Ward rounds are a vital part of the organisation of patient management but a little advance planning can ensure that they are also useful teaching occasions.⁵ The way consultants work is changing, and team work with consultants taking rounds together is becoming more commonplace. This can allow for the sharing of teaching on the ward round as well as opportunities for discussion of patients and their management.

- Designate one ward round at a regular interval, say weekly, as a teaching ward round as opposed to a business round—these are often more suited to rounds in the latter part of the day
- Consultant pairs can take ward rounds together, one to deal with clinical decisions and the other using the opportunity of not being directly involved to teach on the patient with the other ward round attendees not directly involved in the case decisions.

Active participation in learning is vital and ward rounds are no exception. Advance planning can ensure that all ward round attendees have opportunities to be involved.

- Start the round with a discussion of how the teaching will be organised. This can involve deciding how many students will present cases and who will be presented—this allows apportioning of presentation among students and trainees. Allocation of a designated proportion of ward round time for specific teaching activities will keep the ward round moving. It may also be useful to identify a “theme” for the ward round (for example, nutrition or drug reactions) and ward round participants can look for aspects of the designated theme to discuss with each patient
- Identify one patient at the beginning of the round to discuss in depth.

It is important to try and ensure that students present cases they have seen.⁶ If this is not a clear expectation, students will not use their time outside of formal teaching to see and examine patients. Students like rotations where they are expected to present patients and it helps establish the principle of taking clinical responsibility for your patients and decisions.

- Ensure that any patient seen acutely by a student is presented by that student—for example, children seen in casualty by students on call
- Send students ahead of the ward round to see and prepare one patient. By the time the ward round reaches them (in, say 30 minutes) they will have had the opportunity to study the notes and examine the patient. They can then present and discuss this patient. This also allows time for the ward round to focus on the teaching needs of other ward round attendees.

Active planning of ward round presentations not only makes time management easier but allows for discussions at the appropriate level for the students’ learning and the involvement of others on the round in the teaching.⁶

Teaching in the outpatient clinic

The outpatient clinic is one of the most under-used parts of clinical practice as a teaching resource. The outpatient consultation provides an ideal opportunity to discuss the concept of “problem orientated” history taking and examination. By its nature, the outpatient consultation tends to be focused and quite different from the very detailed examination of patients referred for admission. As with ward rounds, advance planning before busy clinics is essential to change what all too often can be a passive or unmonitored experience into a useful learning experience.^{5, 7}

- Set specific objectives for the outpatient session for the student so that they can structure and focus their observations on what is happening—for example, that during a particular clinic, they should observe and take note of specific communication skills
- Identify particular patients at the beginning of the clinic that are suitable for the students to examine and present within the clinic. It may also be possible to ask specific patients to attend clinics when students are likely to be present—for example, children with more complex or chronic disorders
- Give the notes of a number of patients who are coming to a clinic to the student or trainee some days in advance. The learner will then have time to peruse the notes to identify the specific problems of the patients, read around relevant topics, and be prepared to see these patients at the time of the clinic
- Ask students to sit in the waiting area with a patient before the clinic and discuss their expectations of the appointment, attend the consultation with the patient, and then follow the child and parents through to x ray, physiotherapy, dietician, etc, thus obtaining a complete picture of the outpatient consultation. This can also supply the consultant with useful feedback as to whether his or her perspective of the successful consultation had matched that of the patient!

Prior preparation is therefore a vital component to make the most of outpatients as a teaching opportunity. It is also essential that during clinics identified for teaching, time is set aside at the end of the clinic for discussion and evaluation.

Learning when “on call”

Medical students seem to spend less time on call than previously, and this is a pity as it is a time when students can be more involved in clerking patients and the immediacy of acute management decisions. This is particularly so in paediatrics where patient turnover is so fast that children may be admitted in the evening and discharged the following morning before being seen on a teaching ward round. The

immediacy of acute management can significantly increase student enthusiasm and motivation, especially if students feel they are contributing to the process and if they get structured feedback on their involvement.^{1 2} It also provides an opportunity for trainee doctors to teach students as is increasingly expected as part of Calman training.

- Ensure that students are the first of the on-call team to see the patient. This is an important motivation for learning and allows students the opportunity to present their patients to the next most senior doctor on the post-take ward rounds while on call, and on the ward round the following day. Ask students to enter their clerking notes into the patient case notes and assist in the formulation of management plans
- Ask students to follow patients through the hospital stay, from first clerking to discharge. Make the students responsible for giving updates on their patients' progress on every ward round. This allows students to see, at first hand, the natural history of conditions
- Ask students to shadow the on-call senior house officer (SHO)/specialist registrar and report back on the roles of this doctor. Students thus not only see admissions, but also learn about all the other tasks involved in being on call, and develop a clearer idea of the role of qualified doctors.

Learning in private study time/self directed learning

Medical students and, to a lesser extent, trainees will have a certain amount of time allocated to private study and self directed learning. Such learning can be of clinical skills as well as of fact, and students need to be encouraged to engage in activities that will enhance clinical skills. It is unrealistic to expect that students will organise all of this time for themselves. However, consultant staff do not have to give up much time to ensure that these opportunities are used to maximal effect. All that is needed is a list of suggested topics and activities, a clear expectation that the work will be done, and clearly identified times for students to report back on the work undertaken.⁷

- Use logbooks to plan and monitor learner activities. Unless consultants regularly ask to see these, not all students or trainees will undertake all the activities recommended by their course organisers
- Use ward rounds and outpatients to generate questions related to clinical matters which can be allocated to students to answer at the next round or clinic. Keep a record of the questions raised and remember to ask students for their answers when they are due

- Ask students to make regular presentations on common topics to themselves, to the paediatric team or to larger audiences (the designated ward round "themes" can often be used as appropriate topics—see above). A lot can be learnt from having to teach others and sharing of information by preparation and presentation to colleagues can be an important incentive to learn in a structured way and can also provide invaluable experience in using presentation skills.

Setting projects for students to complete during the attachment can be another way of helping students to use their private study time. Again it is vital to remember to ask for projects to be handed in and to provide feedback for students. Projects might include:

- Preparation of handouts for parents. These can be useful for the students but also provide resources for clinical practice. Students or trainees could evaluate common problems and, as a way of encouraging them to study, would prepare handouts for parents
- Ask students to compose a letter to a parent, following up either on a child being discharged from hospital or from outpatients, and explaining the investigations and the management plan.

Conclusion

Teaching is an important yet often undervalued responsibility for consultants. Good teachers try to understand and generate the conditions which are most favourable for allowing students to achieve the highest quality learning possible.⁸ The pressures of clinical work may make it seem difficult to provide attractive and informative learning opportunities for students and trainees. However, with advance planning, many traditional clinical activities can be structured to provide highly effective learning without excessive demands on consultant time. Planning teaching in this way will increase student and teacher satisfaction and may attract more of the best students into the specialty.

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