

Audit of medical students' experiences of paediatric teaching: a tool to monitor and improve clinical teaching

ABSTRACT—We provide clear aims and objectives for our students during their attachment in child health. To assess how well these are being met we reviewed their experience over the 3-year period 1991–1994. The audit was based on a questionnaire and was anonymous and voluntary; 45.4% of the students completed the questionnaire. These students' experiences were generally satisfactory and covered a wide variety of common childhood disorders. Of concern was that 32% of them received less than 1 hour per week of teaching in protected time and that they seemed reluctant to avail themselves of the opportunity of attending casualty; 54% did not visit the casualty department at all during their attachment. We have identified several areas where improvements in our teaching can be made and we are confident that our system of regular audit constitutes a valuable tool to monitor and improve clinical teaching.

In the University of Wales College of Medicine students have a 7-week attachment in child health in the fourth and fifth years of undergraduate studies, either in one of the teaching hospitals in Cardiff or in one of the district general hospitals in Wales. This is followed by 1 week of intensive revision and a detailed assessment of knowledge and clinical skills. In the January of their fourth year we give the students a course of core lectures. Assessment and feedback are key features in determining the quality of what the students learn and are taught in child health [1]. We set clear aims and objectives for our students to achieve during their period of study and we are highly committed to ensuring that they achieve these objectives. To see how far our educational aims are being met in practice we reviewed the students' experience over the 3 years from 1991 to 1994.

Method

We gave each medical student a questionnaire at the start of the attachment. We asked them to record which of the specified conditions they had seen and the time they had spent in various activities. They returned the questionnaire at the end of their attach-

ment. Participation in the review was anonymous and not compulsory (we have since made this assessment of teaching compulsory). We expected them to become familiar with general baby care and to master certain basic practical skills [2]. They were asked to detail how much time they spent in the casualty department of their hospital specifically looking at children and how many acute admissions they had clerked. We expected them to become proficient in the examination of the newborn infant and to witness neonatal resuscitation. We also wanted them to have some experience of children outside hospital in the community. We asked the students to detail how much formal teaching they were given away from the bedside and clinical setting in protected time and to comment on their satisfaction with our introductory and revision lectures.

Results

Of the 350 questionnaires distributed between January 1991 and January 1994, 159 were returned, a response rate of 45.4%.

1. *Core disorders* (Table 1). Seventy percent of students had seen two-thirds or more of the 33 core disorders; 43% had seen them all. Most of the common paediatric conditions were represented, particularly those that often result in acute admission to hospital. All students had seen cases of asthma, 96% had seen children with constipation, 95% abdominal pain, febrile fits and urinary tract infection; only 43% had seen infantile colic. While 64% of students had seen a case of child abuse, only 22% had attended a child protection case conference. Interestingly, 28% had seen a case of childhood tuberculosis whereas only 10% had experience of solvent abuse. Cardiac arrest in a child had been witnessed by 12% and 18% had experience of the management of a child in coma.

2. *Basic skills*. Almost all (99%) students had experience of practical baby care but only 52% had measured a child's height or weight; 61% had witnessed immunisations, 93% had taken a child's blood pressure and 62% had assessed peak expiratory flow rate but only 43% had performed a bedside blood glucose measurement.

3. *Experience of acute admissions/casualty experience*. Out of normal working hours 36% had clerked more than 20 acute admissions and 6% had clerked 5 or fewer.

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Table 1. Students' experience of listed core paediatric conditions.

Abominal pain	95%	Epilepsy	94%
Asthma	100%	Failure to thrive	92%
Bronchiolitis	85%	Febrile convulsion	95%
Cerebral palsy	93%	Gastroenteritis	91%
Child abuse	64%	Headache	74%
Case conference	24%	Jaundice	93%
Colic	43%	Learning problems	71%
Congenital heart disease	93%	Mental handicap	90%
Constipation	96%	Otitis media	75%
Croup	80%	Pneumonia	64%
Cystic fibrosis	87%	Poisoning	53%
Development assessment	85%	Short stature	78%
Diabetes mellitus	82%	Squint	56%
Down's syndrome	90%	Tonsillitis	79%
Eczema	92%	Undescended testes	53%
Encopresis	47%	Urinary tract infection	95%
Enuresis	60%		

Conversely, within normal hours 24% of students had clerked 5 patients or fewer and 12% had clerked more than 20. More than half (54%) of students spent no time at all in the casualty department during their attachment and only 26% spent more than 1 hour per week there.

4. *Nursing/neonatal experience.* All our students were given the opportunity to shadow a nurse for a day but only 57% took this up; all who did it found the experience useful for getting involved with general child care, administering drugs etc. Nineteen percent had not examined any newborn infants and 48% had examined fewer than 5. Neonatal resuscitation had been witnessed by 55%.

5. *Community child health.* All our students are expected to spend some time in community child health, and 89% did so. Community child health clinics which consisted of special needs clinics, development assessment clinics or well child surveillance clinics were attended by 62%; 42% had visited special schools for physically and mentally handicapped children; 15% had accompanied health visitors on home visits, 19% attended audiology clinics and 12% spent some time with an allied professional (for example a physiotherapist or occupational therapist). All students who wrote comments found the time spent in the community worthwhile, especially the visits to the special schools.

6. *Teaching.* One third (32%) of students reported receiving less than 1 hour per week of formal teaching during the clinical attachment; 14% received 1-5 hours of teaching in protected time and 12% more

than 6 hours per week. Revision tutorials satisfied 78% of students. On the other hand, 63% were dissatisfied with the introductory lectures, giving the timing of the lectures as the cause for their disgruntlement. These lectures are currently given in the January of the fourth year, which does not necessarily coincide with the start of their paediatric attachment.

Discussion

We are aware that with a response rate of only 45%, our study may not represent an accurate reflection of students' clinical experience. Those who responded may be those who are particularly keen and conscientious or, alternatively, those who want to record a particular grievance. We recognise these limitations but are confident that the profile we have obtained is fairly typical of our students as a whole.

Our students gained experience of a wide variety of common childhood disorders and of many practical procedures, and they were often involved in the assessment of acute admissions. Sadly, they seemed reluctant to spend time in the casualty department, a source of much useful clinical experience, and so missed out on the decision-making process whereby children are deemed fit to go home or need to be admitted to hospital. Too many also missed the opportunity to experience basic child care with the ward nurses. We are concerned that many students seem to get so little teaching in protected time, but it appeared that teaching on ward rounds and in outpatients was generally good. The students were satisfied with the revision tutorials but 63% felt that the introductory lectures would be better delivered at the start of the paediatric block of teaching rather than at a fixed time as at present. All our students are assessed at the end of the paediatric block by means of an examination which is of a standard equivalent to the final MB examination. Since only one-third of students will have a paediatric case in the actual final examination the end-of-block examination acts as the major paediatric assessment during the undergraduate years. Despite the variation in protected teaching time there was no difference in the end-of-block examination results between those who had had a lot of teaching and those who had but little; similarly, there was no difference in the outcome of the final MB examination, which would appear to indicate that students are motivated enough to undertake self-directed learning when teaching is lacking.

We have identified several areas for improvement in our student teaching. Protected time for teaching needs to be established during all placements. Students must be encouraged to avail themselves of every opportunity for expanding their experience, especially by attending the casualty department and spending time on the wards with the nursing staff.

In common with all other medical schools we are currently in the process of restructuring the curriculum

along the lines recommended by the General Medical Council. However well integrated our new curriculum becomes, the clinical attachment in child health will remain an essential core clinical experience. A major challenge to our clinical teaching is that, because our students are sent to a wide variety of district general hospitals, it is difficult to ensure that the curriculum is equally delivered. Our audit reflects this. To help overcome these problems our academic department takes the opportunity of the twice yearly meetings of the Welsh Paediatric Society (of which all clinical teachers are members) to present papers on educational issues in order to inform colleagues about innovations, provide feedback on paediatric instruction and respond to any queries. Every year we make modifications to our

curriculum based on this feedback. We are optimistic that our regular reviews constitute a valuable tool to monitor and improve the clinical teaching.

References

- 1 Higher Education Funding Council for Wales. *The assessment of quality in higher education in Wales: future directions*. W94/36 HE. 1994.
- 2 Shortland G, Davies DP. Assessing undergraduates' practical skills. *Arch Dis Child* 1995;72:161-3.

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