ORIGINAL ARTICLE

The College of Emergency Medicine curriculum: is the specialty-specific knowledge section fit for purpose?

Sarah Robinson, Claire Vincent, Jude Reay, Mike Clancy

See end of article for authors' affiliations

Emerg Med J 2007;24:194–197. doi: 10.1136/emj.2006.040410

Correspondence to:
Dr S Robinson, Emergency
Department, Southampton
University NHS Trust,
Tremona Road,
Southampton SO16 6YD,
UK; robinsonmustafa@aol.
com

Accepted 5 December 2006

Objective: To determine whether the knowledge specified in the specialty-specific section of the College of Emergency Medicine curriculum covered the diagnoses presenting to a UK teaching hospital emergency department.

Method: An audit of 1000 sets of notes was undertaken, the diagnosis abstracted and mapped to the curriculum.

Results: 1076 diagnoses were derived and all were covered by the curriculum. The three most common diagnostic categories were musculoskeletal, wound management and cardiology.

Conclusion: The curriculum covered all the diagnoses in this sample. Knowing the frequency of a diagnosis could be used to inform training and assessment.

There have been considerable changes in postgraduate education, led by the Postgraduate Medical Education and Training Board. This board has set out how it wishes curricula to be laid out, specifying the knowledge, skills and expertise, together with the learning, teaching, feedback and supervision needed to provide safe, expert doctors functioning independently at the consultant level.¹ The specialty-specific knowledge section of the curriculum was first developed from a review of the previous Faculty of Accident and Emergency Medicine document, together with the curricula of the emergency medicine training programmes of Australasia and the USA. This document was then sent to 20 emergency physicians who had completed their training and had training responsibilities for checking of important omissions and suggesting any modifications. The revised document was then reviewed by senior officers with educational responsibilities within the then Faculty of Accident and Emergency medicine, together with two trainees who were at the end of their training. After this review, the curriculum was submitted to the board of the Faculty for approval. It has been available from the College of Emergency Medicine website since January 2006; feedback has been encouraged and promoted at national meetings of both trainees and trainers.

The specialty-specific knowledge section of the curriculum consists of a list of clinical domains such as cardiology, respiratory and so on, broken down further into principal presenting complaints and diagnoses. However, it is not known whether the knowledge content in the specialty section of the curriculum reflects typical UK practice. Understanding the type and frequency of the conditions seen is fundamental to any specialty and most experienced emergency physicians think that they have a good understanding of the cases that are dealt with by their departments. Yet, detailed literature searches using Medline and PubMed (1966 onwards) and a review of Department of Health websites (by SR) revealed no data describing UK emergency department casemix in sufficient detail to be of value. Such information is essential in establishing that the curriculum is correctly focused and may help the assessment process by ensuring that frequent conditions as well as rarities are covered.

The objective of this study was to take a sample of cases and describe them in sufficient detail so that they could be mapped

to the curriculum, measure their frequency and to see whether the curriculum covered all the presenting conditions.

METHOD

The Southampton General Hospital emergency department, Southampton, UK, serves an urban population of 0.5 million, has an annual attendance of 90 000 patients and sees all categories of patient, except those with eye emergencies, who are seen in the adjacent eye casualty. The hospital is the regional centre for all specialties except plastic surgery. The department has a nurse practitioner service focusing on the care of ambulatory cases. Two National Health Service walk-in centres are also located in the city, seeing in excess of 80 000 patients annually.

Two samples, each comprising 500 stored emergency department notes (containing the recorded history and examination, results of diagnostic testing, triage notes, paramedic forms and primary care referral letters), were reviewed in detail by experienced emergency physicians (SR, CV, JR and MC) working separately. These two samples consisted of notes from two separate fortnight periods that had been stored alphabetically. These notes were thought to represent a random sample and thus be representative of the types of cases seen. The diagnosis, along with age and sex, was recorded on a dedicated proforma. In cases where a diagnosis was not recorded in the notes or was unclear, a judgement was made after discussion by two doctors as to the most likely diagnosis. Although the proportion that fell into this category was not recorded, it was thought to be <15% of the cases. If this proved impossible, the clinical problem was recorded by the presenting symptom—for example, coma, syncope and so on, where the cause was not known. This audit included patients seen by the emergency nurse practitioner service and also those who may be seen by medical staff at other times.

The diagnoses were then mapped to the specialty part of curriculum. The resuscitative (with the exception of cardiac arrest), anaesthetic and pain-relief sections (A1, A2) were omitted, as the focus of this study was on conditions rather than treatment. The diagnoses of those patients who required resuscitation, anaesthesia or pain relief are nevertheless included.

Table 1 Total number of diagnoses made on the basis of the classification system

Curriculum classification ²		Total number of diagnoses	% Total (1076)	<16 years
A1.2	Cardiac arrest	5	0.5	1
A3	Wound management	96	8.9	23
	Wounds	87		22
	Wound infections	3		1
	Bites	2		
	Amputation	3		
	Abrasion	1		
A4.2	Head injury	51	4.7	22
	Moderate	3		
	Minor	48		
A4.3	Chest trauma	23	2.1	1
	Contusion	10		1
	Sprain	9		
	Ribs	3		
	Blunt chest injury	1		
A4.4	Abdominal trauma	0	0	0
A4.5	Spinal injury	7	0.7	0
	Closed fracture	3		
	Contusion	4		
A4.6	Maxillofacial trauma	18	1.7	3
	Facial fracture	6		
	Facial contusion	12		3
A4.7	Burns	6	0.6	1
	Thermal burns	3		
	Sunburn	3		1
A5	Musculoskeletal	365	34	93
	Soft tissue sprains	142		37
	Contusions	67		14
	Bursitis	3		
	Tendon injury	5		
	Soft tissue infection	5		
	Closed fractures	123		40
	Open fracture	5		
	Dislocation	15		2
A6	Vascular emergencies	3	0.3	0
	DVT	3	0.3	
A7	Abdominal conditions	70	6.5	15
	Hernia	1		1
	Intestinal obstruction	3		
	Cholecystitis	1		
	Pancreatitis	1		
	Appendicitis	4		
	Upper GI bleed	3		
	Lower GI bleed	4		
	Peptic ulcer disease	10		
	Constipation	1		
	Irritable bowel	1		
	Abdominal pain cause not known	4		3
	Gastroenteritis	22		11
	Other abdominal diagnosis	8		
	Gastritis	3		
	Diverticulitis	2		
	Anal fissure	1		
	Laparotomy wound concern	1		
A8	Urology	17	1.6	1
	Haematuria	6		1
	Retention	2		
	Blocked catheter	2		
	Ureteric colic	6		
	Paraphimosis	1		
A9	Sexually transmitted disease	0	0	
A11	ENT	42	3.9	19
	ENT FB	17		13
	Otitis externa	2		
	Epistaxis	10		1
	Otitis media	5		2
	Tonsillitis	4		1
	Tympanic perforation	1		1
	Epiglottitis	1		1
	Dysphagia	1		
	Swollen uvula	1		
A12	Dental	13	1.2	3
	Dental abscess	6		1
	Broken teeth	4		2
	Bleeding socket	1		
	Toothache	1		
	Oral thrush	1		

Table 1 Continued

Curriculum classification ²		Total number of diagnoses	% Total (1076)	<16 years
A13	Gynaecology	10	0.9	2
	Vaginal bleeding	6		1
	Vaginal discharge	1		1
	PID	2		
	Pelvic pain	1		
A14	Obstetrics	2	0.2	0
*	Delivery	1		
	Antepartum haemorrhage	1		
A15	Cardiology	87	8.1	2
	Angina	25		
	Chest pain, cause not known	22		2
	Arrhythmias	25		
	LVF	9		
	Other cardiac diagnoses	1		
	Pericarditis	1		
	Valvular heart disease	1		
	Myocardial infarction	4		
	Syncope	10		
A16	Respiratory	64	6	20
	Chest infection	22		4
	URTI	10		8
	Asthma	7		
	COPD	7		
	Croup	5		5
	Bronchiolitis	2		2
	PE	5		
*	Carcinoma bronchus	3		
	Pneumothorax	1		
	ALTE	1		1
	SOB under investigation	1		
A17	Neurological emergencies	44	4.1	10
	Meningitis	3		1
	CVA TIA	14		
	Epilepsy	6		
	Headache	5		1
	Dementia	1		
	MS exacerbation	1		
	Brain tumour progression	1		
	SAH	2		
	Febrile convulsion	6		6
	Vertigo	1		
	First fit	3		2
	Coma	1		
A18	Hepatic disorders	0	0	0
A19	Toxicology	30	2.8	1
*	Overdose	18		1
*	Alcohol/drug misuse	9		
*	Toxic fume exposure	1		
*	Smoke inhalation	2		
A22	Renal disease	17	1.6	4
	UTI	17		4
A23	Diabetes and endocrinology	9	0.8	0
	Hypoglycaemia	5		
	Hypothyroid	1		
	Addisonian	1		
	DKA	2		
A24	Haematology	4	0.4	0
	Anaemia	2		
	Low platelets	1		
	C-1 esterase deficiency	1		
A25	Infectious diseases and sepsis	11	1	4
	Septicaemia	5		
	Febrile child	4		4
	PUO	1		
	Needle stick	1		
A26	Dermatology	22	2	2
	Rash	2		
	Herpes zoster	1		
	Allergy	11		2
	Cellulitis	8		
A27	Rheumatology	15	1.4	0
	SLE	1		
	Monoarthritis	1		
	Gout	1		
	Septic arthritis	3		
	Back pain	9		
A28	Child protection and children in special circumstances	0	0	0

Table 1 Continued

Curriculum classification ²		Total number of diagnoses	% Total (1076)	<16 years
A29	Neonatology	1	0.1	1
*	Emergency delivery	1		
A30	Environmental emergencies	3	0.3	0
*	Toxic fume /smoke inhalation	3		
A31	Oncology	3	0.3	0
*	Carcinoma bronchus	3		
A32	Psychiatry	38	3.5	2
*	Overdose	18		1
*	Alcohol, drug misuse	9		
	Anxiety	7		
	DSH	4		1

ALTE, apparent life-threatening event; COPD, chronic obstructive pulmonary disease; CVA, cerebrovascular accident; DKA, diabetic ketoacidosis; DSH, deliberate self-harm; DVT, deep vein thrombosis; ENT, ear, nose and throat; FB, foreign bodies; GI, gastrointestinal; LVF, left ventricular failure; MS, multiple sclerosis; PE, pulmonary embolism; PID, pelvic inflammatory disease; PUO, pyrexia of unknown origin; SAH, subarachnoid haemorrhage; SLE, systemic lupus erythematosus; SOB, shortness of breath; TIA, transient ischaemic attack; URTI, upper respiratory tract infection; UTI, urinary tract infection.

*Same condition is classified differently.

RESULTS

A total of 1076 diagnoses were made from 1000 patients' sets of notes. Each diagnosis was mapped to the relevant section of the curriculum (using the College of Emergency Medicine classification system) and presented as the total number of diagnoses in that category, percentage of the total diagnoses, details of subcategories and the number of diagnoses that applied to patients aged <16 years. The total number of diagnoses exceeded the number of patients because patients had more than one diagnosis or the classification system enabled the same condition to be classified differently (marked with* in table 1).

DISCUSSION

This study has mapped for the first time the frequency of diagnoses of patients attending an emergency department to the specialty-specific knowledge section of the curriculum. There are some important limitations of this study. It is inevitable that there will be some inaccuracy of the diagnoses as these were based on a review of patients' emergency department notes and the assessment by the authors, with no follow-up of those patients discharged or a review of inpatient notes. In an estimated one in six cases, the diagnosis was not recorded and was based on the expert judgement of two of the authors. These cases have not been recorded separately. Future studies may wish to treat those notes without an explicit diagnosis separately, with formalisation of the process that leads to a diagnosis or failing that, categorisation by presenting complaint (with its implied differential diagnoses).

This study was based in one hospital and the casemix and service delivery may be different from other hospitals, as indicated by the absence of eye emergencies and sexually transmitted diseases. This study was also undertaken against a background of change in the provision of primary care. Sampling by nature will miss some conditions and provide inaccurate estimates, especially of rare and seasonal conditions. It is also likely that alcohol may have been under-reported and

was only considered as the diagnosis when it was a dominant feature.

Selecting the sample by alphabetical order could lead to a potential bias in ethnicity, with certain groups having an increased frequency of names beginning with "A" for example, and we would not recommend this method for future studies.

Acknowledging these limitations, nevertheless, estimates of the frequencies of the diagnoses are provided. These could be used to inform training and assessment, ensuring that these educational efforts reflect how common or rare these diagnoses are.

Other features such as acuity and severity are clearly important, but are not part of this study.

CONCLUSION

The specialty-specific part of the curriculum covered all the conditions that were identified in this audit and their frequencies are provided. The breadth of knowledge needed by an emergency physician is confirmed. By knowing the frequencies of the conditions, the assessment process can be designed to ensure that both the common as well as the rare conditions are covered.

Authors' affiliations

Sarah Robinson, Mike Clancy, Emergency Department, Southampton University NHS Trust, Southampton, UK

Claire Vincent, Jude Reay, Emergency Department, Portsmouth Hospitals NHS Trust, Portsmouth, UK

Funding: Nil.

Competing interests: MC is chairman of the curriculum committee of the College of Emergency Medicine.

REFERENCES

- 1 PMETB Curriculum Subcommittee 2004. Standards for curriculum development: background paper. www.pmetb.org.uk. (accessed 11 Jan 2007).
- 2 College of Emergency Medicine. College of Emergency Medicine curriculum 2006. www.emergencymed.org.uk. (accessed 11 Jan 2007).