

ORIGINAL ARTICLE

Best paediatric evidence; is it accessible and used on-call?

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Background: Paediatricians wanting to use evidence based medicine (EBM) strategies, need to be able to track down and critically appraise evidence. This requires access to quality filtered resources (for example, Cochrane Library), bibliographic databases (for example, Medline), and paediatric journals.

Aims: To determine whether paediatricians have access to these resources when on-call and if they use them to answer clinical questions.

Method: A telephone survey of paediatric and neonatal units was performed during November 2001. The "paediatrician-on-call" was asked whether they could access Medline, Cochrane, and paediatric journals, and if they used these when on-call.

Results: Paediatric trainees were available in 87 of the 97 units contacted. All except one had access to Medline; although only 56 (64%) could do this near their ward. Eighty had access to Cochrane. Thirteen (15%) could not gain access to their library out-of-hours. All except one department had local guidelines, with 71% having >15 guidelines. Access to any of the top seven "best evidence" paediatric journals varied from 64% to 100%. Only 26% of trainees had read the evidence based section of *Archives of Disease of Childhood*, Archimedes. Many trainees claimed to use guidelines when on-call (61; 70%), but few used Medline (14; 16%).

Conclusions: Paediatric trainees mostly have access to facilities to help them to track down and critically appraise evidence. However, few of them have used it to help make clinical decisions when on-call. Many of the doctors contacted said they used local guidelines as their source of information on-call.

Most health care professionals want to practise evidence based medicine (EBM) as far as they are able.¹ This process consists of five steps: (1) ask a question (define the clinical problem); (2) acquire some information (search for the best evidence); (3) appraise the evidence (address the validity, importance, and applicability of the study); (4) apply the result (to their patient); and (5) assess performance (skills of EBM or auditable patient outcomes). It has been suggested that paediatricians can do this while "on-call",² although others have ridiculed this idea.³

Paediatricians wanting to practise EBM "on-call" require access to quality filtered resources (for example, the Cochrane Library), bibliographic databases (for example, Medline), and relevant journals. The best primary evidence for paediatric questions is concentrated in seven common journals.⁴ Alternatively paediatricians could use evidence based summaries generated by others, such as the critically appraised topics in Archimedes.⁵

We wanted to find out whether on-call paediatricians had access to quality filtered resources, bibliographic databases, and "best evidence" paediatric journals. We also wished to know if they used them to answer clinical questions when on-call.

METHODS

During November 2001 the authors telephoned hospitals with a paediatric and/or neonatal unit in Scotland, Yorkshire, West Midlands, and North and South Thames. The "paediatrician-on-call" was contacted and asked if they had access to: Medline, the Cochrane database, the seven best evidence paediatric journals, the internet, textbooks, and local guidelines. They were specifically asked which of these they could access when on-call. They were also asked which, if any, of these they had actually used when on-call. Finally they were asked if they had read Archimedes. Information was recorded using a standard data collection sheet.

RESULTS

The on-call paediatrician was available in 87 of the 97 hospitals telephoned (Scotland 24, Yorkshire 25, Thames 20, West Midlands 18). All except four were paediatricians in training (senior house officer 49, specialist registrar 34, staff grade 4).

All except one unit had access to Medline, 80 could access the Cochrane database, and 75 had access to the internet (table 1). Most doctors said they had access to paediatric textbooks. However, 13 doctors could not gain access to their hospital library out-of-hours to use a computer, get journals, or study textbooks (table 1).

The doctors were asked what resources they had used on-call. Many said they used local guidelines or textbooks; a few said they used the internet, Medline, journals, or the Cochrane database (table 1). Many doctors commented they had no time to practice EBM on-call.

Information on journals and guidelines was available for 69 units (Scotland, Yorkshire, Thames). The most commonly available journal was *The Lancet* (68/69 units). Availability of the other best paediatric evidence journals varied (table 2). Local guidelines were available in all except one unit. Most had more than 15 guidelines (49/69, 71%). However, many doctors commented that the guidelines were of "variable quality".

Only 23/69 of the doctors contacted were aware of the Archimedes section in the *Archives of Disease in Childhood*.

DISCUSSION

This study has found that most paediatricians on-call believe they have access to resources which they could then use to practise evidence based medicine. However, few used them for this purpose. It was not clear whether Medline was unavailable to the doctor who said they could not access it. Alternatively, individual doctors may have been unaware or unable to access it via the hospital computer. It is assumed

Table 1 Resources available to, and used on-call by paediatricians in 87 hospitals

| | Availability | | Location | | Used on-call |
|------------|--------------|-----|----------|---------|--------------|
| | 24 hours | 9–5 | Ward | Library | |
| Internet | 66 | 9 | 58 | 17 | 17 |
| Medline | 73 | 13 | 56 | 30 | 14 |
| Cochrane | 60 | 20 | 43 | 37 | 5 |
| Textbooks | 80 | 1 | 76 | 5 | 49 |
| Guidelines | 82 | 0 | 82 | 0 | 61 |

that “nearly all hospitals have internal computer systems”;² however, individual doctors need to be able to use these computers to track down evidence.

Many doctors commented that they had no time to track down and critically appraise evidence while on-call. Evidence based scenarios suggest that the answers to clinical problems can be obtained rapidly.² This concept has been ridiculed,³ and more detailed work has suggested it can take 1–8 hours to find and appraise the evidence for clinical problems in paediatrics.⁶ Various resources are becoming available to short cut the five step process. Clinical Evidence⁷ is a digest of randomised trials and systematic reviews that answer common therapeutic questions.

Clinical Evidence has now become available to NHS doctors in England via the National Electronic Library for Health.⁷ Evidence-based On Call provides evidence summaries for diagnosis, investigation, treatment, prognostication, and prevention in adult general medicine.⁸ A study in adult in-patient practice found that most questions could be answered in less than one minute, with access to the appropriate resources.⁹

Access to the seven “best evidence” paediatric journals was variable across the hospitals studied. However, many EBM experts suggest that single articles (rather than summaries of data) should not be the basis of decisions. Searching journals may thus not be critical, unless the search is for meta-analyses or high quality summaries.

Many of the doctors we contacted said they used local guidelines as their source of information on-call. This contrasts with other studies where physicians perceived guidelines to be less useful than other sources of medical information.¹⁰ However, paediatricians in training or in non-university affiliated hospitals (such as the majority of those we contacted) may be more likely to find guidelines useful.¹¹

This study has a number of limitations. We were unable to independently verify the resources available to the doctors we contacted and those they used on-call. However, since we spoke with the paediatric doctor who would be making decisions on call, the answers we obtained are more likely to reflect what happens in real life.

The implication of our study is that in order for paediatricians to practise evidence based medicine on-call they need easy access to evidence based answers to common clinical problems. There are developing knowledge banks that contain easily digested summaries of evidence.² The format used by many is the “critically appraised topic” (CAT), as used in Archimedes.

However, there are many sites that collate CATs,² some of which may give differing answers for the same clinical problem.¹² BestBets,¹³ the originator of the format used by Archimedes, provides a website around which we suggest a single, reviewed, resource for CATs could be centred.

Paediatricians on-call rarely acquire, appraise, and apply the best evidence. Indeed it is unclear how much evidence is available in child health to support decisions. Many paediatricians will not be interested in gaining a high level

Table 2 “Best evidence” paediatric journals available to paediatrician on-call in 69 units in Scotland, Thames, and Northern and Yorkshire regions

| | Scotland (n = 24) | Thames (n = 20) | North/York (n = 25) | Total (n = 69) |
|-----------------------|-------------------|-----------------|---------------------|----------------|
| <i>Arch Dis Child</i> | 22 | 20 | 24 | 66 |
| <i>BMJ</i> | 22 | 20 | 25 | 67 |
| <i>JAMA</i> | 18 | 20 | 18 | 56 |
| <i>J Pediatr</i> | 18 | 20 | 17 | 55 |
| <i>Lancet</i> | 24 | 20 | 24 | 68 |
| <i>N Engl J Med</i> | 20 | 19 | 25 | 64 |
| <i>Pediatrics</i> | 21 | 19 | 16 | 56 |

Arch Dis Child, Archives of Disease in Childhood; *BMJ*, British Medical Journal; *JAMA*, Journal of the American Medical Association; *J Pediatr*, Journal of Pediatrics; *N Engl J Med*, New England Journal of Medicine.

of sophistication in using the literature. Those who do will often be short of time in applying these skills.¹⁴ Trying to train all paediatricians to be able to perform complex critical appraisals of the literature is unnecessary and unhelpful. Doctors in other specialties believe that learning the skills of evidence based medicine is not the most appropriate method for moving to EBM.¹⁵ Instead most paediatricians should be taught how to be “practitioners” of evidence based medicine,¹⁴ knowing where to find preprocessed evidence and how to apply it, though there will always be a number who wish to develop further skills. Having “CAT” rather than “journal” clubs may help,¹⁶ although not all find these useful.¹²

Where should on-call paediatricians in training get advice about clinical problems? Senior paediatricians might argue that trainees should ask consultants if they are uncertain of the best management for an ill child. While the child’s consultant needs to be aware of the clinical problem, consultants may not always give evidence based answers.¹² Alternatively local guidelines may be consulted. While many units we contacted had these available, the quality was thought to be variable. Many centres may not have the resources and skills to develop original, unit based guidelines. They should try to identify previously developed rigorous guidelines and adapt these for local use.¹⁷ Evidence based paediatric guidelines are now becoming available for common conditions such as urinary tract infection.¹⁸ Some of these guidelines are now recommended by the Quality of Practice Committee of the Royal College of Paediatrics and Child Health.¹⁹ Adapting these guidelines for local use should enable paediatricians to practise EBM, even while on-call.

In conclusion, paediatricians on-call mostly have access to facilities to help them to track down and critically appraise evidence, but few use them to help make clinical decisions. Most claim to use local guidelines. To help paediatricians-in-training practise EBM requires the development of evidence based guidelines and access to critically appraised information, rather than training in clinical epidemiology.

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