

Bettertesting: putting laboratory test guidance on the web

This article describes a website (www.bettertesting.org.uk) which provides guidance on use of laboratory tests in common situations. It was constructed using a standard search strategy to identify the best quality guidance from the literature and will shortly include clinical self-assessment questions.

Bettertesting (www.bettertesting.org.uk) is a website presenting laboratory test guidance identified in a project funded by the Association of Clinical Biochemists, the Association of Clinical Pathology, the Royal College of Pathologists and the Department of Health to provide guidance on 130 clinical scenarios commonly seen in laboratory medicine. The content provides a learning resource open to all doctors in training.

With the decline in formal teaching of laboratory subjects in medical schools, an increasing number of junior doctors are entering training with limited experience in the use and interpretation of diagnostic tests. However, these form a large part of the job of foundation doctors and will continue to play a large part in their subsequent professional lives, particularly in general practice and the general medical specialties.

The process

The Bettertesting website was set up after a 3-year programme of identifying, researching and authoring answers to a set of frequently asked questions based around primary care use of laboratory tests. Many of these situations apply equally to hospital medical care. These cover topics across the disciplines of biochemistry, haematology, microbiology and immunology. The aim of the project was to produce short reference answers to the questions, consisting of key bullet points followed by a rationale based on the available evidence and pathophysiology of the disease in question.

The clinical scenarios relate mostly to ambulatory care rather than acute hospital presentations, but attempt to provide guidance about relative degrees of urgency of the situations encountered. They were ini-

tially published as a series of reviews in the *Journal of Clinical Pathology* between 2005 and 2008 with the aim of updating every 2 years. With the help of the Sowerby Centre for Health Informatics in Newcastle and the permission of the original publishers the content was re-organized onto a website arranged by topics and questions. The original site was opened early in 2008 and is currently being supplemented by a series of clinical learning cases.

Content of the site

The home page and list of topics covered is shown in *Figure 1*. These topics are broken down into subject areas and then into individual questions, the answers to which are then presented in bullet point and rationale sections. An example of this breakdown is shown in the renal/electrolyte topic in *Figures 1* and *2*.

Education: specific training or learning on the job

The main purpose of the site is to allow doctors (and other health professionals) rapid access to guidance on how to use and interpret tests in common clinical situations. Used regularly, it provides a means of ongoing problem-based

learning centred on actual situations and the diagnostic or interpretative questions these raise. Alongside this, a pilot set of

Figure 1. a. Website home page and (b) list of topics. Topics have been organized pragmatically as a combination of organ system (e.g. thyroid, renal) or disease or abnormality (e.g. malignancy, blood count abnormalities) rather than as a single format, depending on where the questions might sit intuitively.



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Figure 2. Drill-down from the renal/electrolyte topic into (a) subject areas, (b) questions and (c) bullet point guidance. The more detailed rationale and references (not shown) can be accessed by 'drilling down' a further level.

clinical cases has been produced to allow a degree of self-assessment. At this stage this is being introduced to gauge demand for a separate section to allow people to test their knowledge. Like the main content of the site, these cases are based on common presentations, but ones in which the use and interpretation of the tests used highlight some of the diagnostic pitfalls which exist.

also feature prominently in the Membership and Fellowship examinations for medicine and surgery. A solid grounding in diagnostics is also an invaluable skill which junior doctors leaving the hospital environment for general practice can take with them.

The web offers an easy way of dipping in and out of education and already contains a significant number of training resources,

Feedback

There are facilities on the site to allow feedback on content. Comments are welcome both on the layout and use of the site itself and about the specific knowledge content.

There are few websites specifically designed for health professionals examining laboratory testing use, and feedback is therefore invaluable to allow the site to evolve.

Where next?

High learning demands are placed on doctors alongside their usually very demanding jobs. Although there are a number of very high quality short textbooks on laboratory diagnostics available there are many things competing for a doctor's training time.

Laboratory diagnostics play a very large role both in the everyday job and in patient management, some 80% of diagnostic or monitoring situations requiring some input from laboratory medicine. It is not surprising therefore that diagnostics

but there are very few dedicated to diagnostics. This site is not exhaustive and in particular does not address the diagnostics of emergency medicine. It does, however, cover a very wide range of patient management issues and attempts to give readers the best of the evidence which is available.

Getting started

The website has open access and does not require registration. The topics are organized by abnormality or disease system depending on how they may present to a doctor. Basic management advice is given in the bullet points although the subsequent rationale examines the physiology, evidence and reasoning behind the guidance and should be particularly useful for people in training. Many of the references can if wished be accessed directly either as full text or abstracts for further reading.

Conclusions

Designed initially as a resource to help doctors managing patients in primary care, the Bettertesting website contains a large volume of knowledge about the use and interpretation of laboratory tests which is intended to allow rapid easy browsing. A short series of cases has been introduced to provide more of a training focus to the site. Visitors are strongly encouraged to provide feedback on the site. It is only from this that we can gauge how potentially useful the different sections are and therefore decide where to direct future energy. **BJHM**

Conflict of interest: Dr WSA Smellie is lead author of the reviews and editor of the website. He has no personal financial interest in the site.

KEY POINTS

- Bettertesting is a web-based knowledge resource on the use of laboratory tests.
- It examines around 140 clinical scenarios in 25 subject areas across medicine.
- Sections are organized with bullet point guidance followed by a detailed short rationale explaining pathophysiology and evidence.
- A set of educational clinical cases has recently been introduced to the site for self assessment.
- Many of the references cited in the rationale can be accessed directly from the website.