



The role of clinical decision support in improving
the practice of healthcare professionals: an
evaluation of BMJ Best Practice

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Introduction

Clinical decision support may be defined as “any computer programme designed to help health professionals make clinical decisions”.¹ There is a great deal of literature on what constitutes high quality clinical decision support.

Clinical decision support resources should be continually updated with the most reliable evidence-based content that is available. Such resources should be easily accessible to healthcare professionals – on all devices and both online and offline.² Clinical decision support resources should be based on actionable and practical knowledge that will answer clinical questions that arise in actual clinical practice. Decision support should also fit with the clinical workflow – so that healthcare professionals can get to the knowledge that they need at the point of care.^{3,4}

There is broad agreement on these principles of high-quality clinical decision support. However, there is a gap in the literature as to how healthcare professionals use clinical decision support in their everyday work – to improve the care that they provide. BMJ Best Practice is the clinical decision support tool of the BMJ.

In this paper, we report the results of continuous evaluation of the utility of these resources in helping healthcare professionals improve care.

Methods

BMJ Best Practice conducts continuous evaluation as to the utility of the resource in improving clinical care. This is carried out by means of semi-structured interviews conducted by telephone or online conferencing tools with healthcare professionals who use the resource. Interviews last approximately 30 minutes. Detailed notes are taken during the interviews. Notes from these interviews were retrospectively analysed using thematic analysis.⁵ This was used to allow new concepts and insights to emerge from the data.

Results

27 healthcare professionals took part in the semi-structured interviews. These included 23 hospital doctors, three family doctors and one physiotherapist. The healthcare professionals were from Australia, Azerbaijan, India, Iraq, Japan, Jordan, Malaysia, UK, Ukraine, and Vietnam.

Five key themes emerged from the interviews.

1. Clinical decision support to drive improvement in clinical practice
2. Feeling reassured and more confident as a result of using clinical decision support
3. Using novel features in clinical decision support
4. Accessing clinical decision support
5. Step-by-step guidance and answers to specific questions.

Theme one: Clinical decision support to drive improvement in clinical practice

Many users cited examples where they used clinical decision support to improve their practice. One user commented that BMJ Best Practice “has helped enormously to inform the patient, which has been a great help, especially when it comes to agreeing a suitable course of treatment and developing quality primary care.”

Users gave different clinical examples of how they used the resource to drive improvement – most of the examples related to improving clinical care in diagnosis, differential diagnosis, investigations, and management: it “improves the care I provide to patients and saves both time and money.

It gets me thinking of the differential diagnosis, helps me not to over investigate or under manage the patient, and helps me make better referral, diagnosis and treatment decisions.”

Many users saw driving improvement in decision making as inextricably linked with sharing decisions with the patient and ensuring that they make an informed decision: “I regularly refer to BMJ Best Practice to find treatment options for the patient. I discuss treatment options with the patient and involve them in the decision-making. Using BMJ’s resources allows me to provide the patient with enough information to make an informed decision based on their situation.”



It improves the care I provide to patients and saves both time and money.



Theme two: Feeling reassured and more confident as a result of using clinical decision support

BMJ Best Practice (like other forms of clinical decision support) is a resource that is based on hard science and the clinical evidence base. So, it is fascinating that many users commented on how using clinical decision support made them feel. Many users remarked that they felt more confident and reassured when using the resource. This was largely because they knew that they were then practicing according to evidence based international guidelines and that they were not falling behind in their knowledge. One user commented: “The range of content within BMJ Best Practice gives me confidence in my decision-making as I can refer

to the supporting evidence and guidelines provided.”

Another user stated: “When it comes to assessing patients with certain symptoms, I find that BMJ Best Practice provides me with reassurance. If I am unsure of the diagnosis, then I can refer to BMJ Best Practice to understand more about the symptoms presented to me. It allows me to explore the differential diagnosis and advises on the physical examination and test options.”

Finally, a user added: “We feel we are on the same level with international practitioners, and we do not fall behind when it comes to medical information.”



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Theme three: Using novel features in clinical decision support

The core of most clinical decision support resources (including BMJ Best Practice) is the evidence based and continually updated clinical information – the vast majority of this is in the form of text.

However, many users commented on using novel features of clinical decision support to improve care. These included watching procedural videos on how to stitch a wound or using clinical images to help with diagnosis or even to explain to the patient exactly what is going on.

One user fed back: “During university I learned how to suture wounds, but I hadn’t done it in a long time. I quickly opened the BMJ Best Practice video on how to suture wounds. It was really good because I just watched the video and it refreshed my memory on how to suture. He came to my clinic and I sutured his wound perfectly.”

Another user stated that they had seen a woman with pain in the ear: “After the otoscopy, I saw that there was a perforation in her ear and there was liquid coming out. I couldn’t describe the picture of what I was seeing. I was talking about the tympanic membrane. To help describe what I was seeing, I showed her some pictures on BMJ Best Practice.”

There was also growing interest in using the medical calculators that are now available. Users appreciate having these calculators integrated with the rest of the content and being able to access them quickly: “We use the BMJ Best Practice calculators very often, e.g. to calculate creatinine clearance or body mass index. In the past, we were searching for these in various guidelines, but now we can easily enter the indicators into the system and get results quickly.”



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Theme four: Accessing clinical decision support

Feedback from users shows that how they access clinical decision support is of great importance to them. This may be by means of any device - but increasingly it is by mobile devices. Offline access via an app is also important. Users made the following comments: “Since downloading the app to my mobile telephone, I get instant information on various diseases. The best feature is that the app is available offline providing access to the young doctors like us when and where we need it” and, “I use BMJ Best Practice every day on my mobile phone either online or using the app offline when there is no internet available.”

Users were keen to access the content in their workplace and at home: “I use BMJ Best Practice daily, usually on an hourly basis. For me, accessing the BMJ Best Practice app on my phone is easy and allows me to access it from home and work.” Speed of access was also essential to many users – they expected to get answers to their clinical questions instantly: “The BMJ Best Practice app has allowed me to obtain clinical information in my office instantaneously.” “I can consult BMJ Best Practice quickly and it provides the information I need.”

Theme five: Step-by-step guidance and answers to specific questions

Users particularly appreciated guidance on diagnosis and management that was presented in a step-by-step way: “I like the investigation sections as they provide practical step-by-step scenario-based guidance which allows me to work in real time with my patient.” Users felt that this form of presentation was helpful in knowledge transfer to actual clinical practice: “The information is clear, and the step-by-step instructions allow me to transfer to clinical practice immediately.”

Many users had questions for which they needed answers – and appreciated direct answers to their specific questions: “I have referred to it following patient consultations and it has provided me with answers to specific issues concerning both treatment and diagnosis.” “I use BMJ Best Practice to learn about the best way to manage and treat patients with specific infections, so I can correctly upgrade or downgrade antibiotics.”



Discussion

Much of the discourse on evidence-based medicine is related to critical appraisal of individual research studies and systematic reviews. However, this evaluation shows that healthcare professionals consider many other factors when thinking about the utility of evidence-based clinical decision support. Themes that emerged from this evaluation include the use of clinical decision support in driving practice improvement and providing reassurance to healthcare professionals; how users access clinical decision support and the use that they make of novel features of the content; and the speed with which they can access answers to specific clinical questions.

There are limitations to this evaluation. All the feedback comes from users of online clinical decision support (available online and offline via an app) and indeed they are users of a specific resource - BMJ Best Practice. Healthcare professionals who use other resources may appreciate other features.

This paper focuses exclusively on the perspective of frontline healthcare professionals on clinical decision support. Such healthcare professionals are clear that they use the content to improve clinical care and are also clear on the features of decision support that enable them to do this: these include instant access, new multimedia formats, and step-by-step guidance that gives them answers to specific clinical questions.

Further information

To find out how BMJ Best Practice can support your needs in clinical decision support, please contact:

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