

Finding FOAM and not Froth

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The FOAM (Free Open Access Medical Education) movement is a transformative disruption in knowledge dissemination: a massive collection of free resources on medical practice delivered in unique and engaging ways. It was born from the desire of clinicians to discuss the practice of medicine, including the dissemination of new research, more rapidly than could be done with traditional publication platforms.¹ The uptake of FOAM resources on its various online platforms has been enthusiastic, particularly from so-called digital natives. But now there is an overload of information, quickly available at the touch of a smartphone button. This issue of *CJEM* features a helpful summary on finding and assessing useful FOAM resources.² The paper is aimed at trainees, but seasoned clinicians may also find it useful because it coaches the reader through four different ways for FOAM “newbies” to dip their toes into this vast digital ocean of educational resources.

Twenty-five years ago, the evidence-based medicine (EBM) process unfolded something like this: see a patient, recognize a knowledge gap, locate a textbook, search through the table of contents, rapidly digest a series of pages, and hope that the sought-after information could be found and applied. The presentation of Grand Rounds required a larger investment in library time. After identifying the subject heading in the *Index Medicus* encyclopedia and searching the basement shelves of bound back issues to find the listed journal articles, all possibly relevant papers were photocopied. These would be sorted, read, and highlighted to synthesize the topic into a meaningful summary for future patient care. This laborious process of information retrieval is as unimaginable to today’s trainees as the idea of using liver enzymes to diagnose an acute coronary syndrome. The tremendous lag time in knowledge translation was

the singular challenge of that era, and the Cochrane Collaboration was created as the response.

With the birth of the digital world came online archiving of journal publications, and the *Index Medicus* was replaced with expansive online databases; however, these were still not accessible at the bedside. In the late 1990s, David Sackett created the “Evidence Cart,” a portable trolley supporting a computer holding Medline and Cochrane databases plus a collection of textbooks and resources.³ Used to answer real-time questions during ward rounds, at that time it was a transformative disruption of the application of the best available evidence to bedside clinical decisions.

Emergency physicians have been prominent pioneers in the FOAM movement, creating an online, global community of practice through a variety of media and knowledge sharing platforms.⁴ The inarguable benefits are the ability to harness national and international practice variations, to facilitate engagement, and to share knowledge rapidly across diverse practice environments. Last month’s *CJEM* editorial imagined the near future with a collection of online critical clinicians, translational teachers, and interactive investigators, who interact to ensure rapid, accurate knowledge dissemination.⁵ This future will require the enthusiastic engagement of a cross section of such collaborators and familiarity with FOAM as a pre-requisite for getting started.

However, many mature physicians who came of age during the *Index Medicus* years – and even younger physicians themselves – are hesitant to use these resources. The ease of online publishing, combined with the savvy use of graphics, can allow almost anyone to create recommendations that look authoritative. There are legitimate concerns about the lack of transparency in the development of FOAM and suspicion of

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an environment where an expert is anyone whose skillfully delivered message sounds credible. Online fame creates “celebrity” physicians who influence practice through the amplification of research performed by others – the subject of a recent *CJEM* debate.⁶ A blog post with a few highly selected references may be easy to digest and compellingly written, but it is not a systematic review of a topic – yet blogs and podcasts are being used in bedside decision-making. The evidence is now easily accessed and recalled, but is it high quality? Social media-based promotion of research papers, also discussed in this issue of *CJEM*,⁷ increases awareness but may not translate into more practitioners reading the original paper.

To its credit, the FOAM community has responded to criticisms of validity through the development of quality metrics and the creation of critical appraisal guidelines for online sites.^{8,9} The metrics are not yet perfect. Some measures, such as the Social Media Index,¹⁰ contain a measurement of popularity as a component and can potentially be gamed or manipulated through an active online promotion. The ideal knowledge dissemination platform allows the intersection of all available data with subject expertise in a transparent medium accessible to clinicians and patients alike. Many FOAM resources are moving towards this standard, and it can be argued that our traditional models of sharing evidence have yet to meet these criteria. The Cochrane Collaboration comes closest to this ideal and has evolved from its early days. As an example, it is partnering with Wikipedia as a vehicle for dissemination of updated reviews.

We have witnessed dramatic changes in EBM since the days of *Index Medicus*. The FOAM world has arrived as a series of new media for knowledge sharing, enthusiastically embraced by a newer generation of physicians.¹¹ These resources are compelling in their immediacy, in their accessibility as a platform for debate, and in their departure from the unapproachable text of many written journal articles. Many of the materials have the added benefit of being comprehensible to patients – clearly critical stakeholders. There are ongoing issues with quality and transparency, providing opportunities for improvement that the FOAM community is embracing. Traditional journals and their publications (with their well-documented flaws) along with tried-and-tested models of critical appraisal remain the substrate for much of the

knowledge translation in the FOAM world. FOAM is here to stay. The perils here are both blind acceptance and overt dismissal of the FOAM movement. The next transformative disruption will depend on enlightened collaboration between knowledge creators, synthesizers and translators.

Keywords: evidence-based medicine, knowledge, translation, free open access medical education

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