Implementing peer review at an emergency medicine blog: bridging the gap between educators and clinical experts

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ABSTRACT

Emergency physicians are leaders in the ''free open-access meducation'' (FOAM) movement. The mandate of FOAM is to create open-access education and knowledge translation resources for trainees and practicing physicians (e.g., blogs, podcasts, and vodcasts). Critics of FOAM have suggested that because such resources can be easily published online without quality control mechanisms, unreviewed FOAM resources may be erroneous or biased. We present a new initiative to incorporate open, expert, peer review into an established academic medical blog. Experts provided either pre- or postpublication reviews that were visible to blog readers. This article outlines the details of this initiative and discusses the potentially transformative impact of this educational innovation.

RÉSUMÉ

Les médecins d'urgence sont passés maîtres dans l'éducation médicale en libre accès, désignée par l'acronyme FOAM (free open-access meducation). Il s'agit d'un mouvement qui a pour but de créer des ressources didactiques et d'application des connaissances en libre accès (ex., blogues, balado-diffusion, vidéodiffusion) à l'intention des stagiaires et des praticiens. Toutefois, d'après les détracteurs du mouvement FOAM, les ressources non évaluées, ainsi rendues accessibles seraient susceptibles de comporter des erreurs ou d'être teintées de partialité en raison de leur facilité de publication en ligne et de l'absence de mécanismes de contrôle de la qualité. Aussi présentons-nous une nouvelle initiative visant à intégrer une évaluation libre du contenu, par des experts et des pairs dans un blogue médical savant, déjà existant. Les experts ont fait des observations avant ou après la publication, et celles-ci ont été rendues visibles aux lecteurs du blogue. L'article donne une description détaillée de l'initiative, et il sera question de l'effet potentiellement transformateur de cette innovation éducative.

Keywords: knowledge translation, medical blog, medical education, peer review

BACKGROUND

Academic Life in Emergency Medicine (*ALiEM*) is a prominent medical blog that provides educational resources and engages the emergency medicine and medical education communities in a dialogue about best practices (http://academiclifeinem.com.). *ALiEM* was established in 2009 by Michelle Lin and currently involves 2 editors, 4 associate editors, 20 featured contributors, and 22 guest contributors. Between June 8, 2013, and December 15, 2013, it was accessed by people in 10,640 cities and 195 countries. On average, it receives 84,570 hits per month (or about 2,819 hits per day). The site is part of a growing number of "free

DECKERx   CAEP ı Canadian Association of Emergency Physicians / ACMU ı Association canadienne des médecins d'urgence

open-access meducation" (FOAM) resources,[1] which also includes *Life in the Fast Lane* (http://lifeinthefastlane. com/foam) and *EMCrit* (http://emcrit.org).

Blogs and podcasts have been criticized for their paucity of quality control and expertise,[2] and the FOAM movement has been viewed with skepticism by many in the scholarly establishment for these reasons. Blogs are typically founded by individual clinicians who attempt to cover many topics but are rarely experts in all areas. The increase in FOAM resources, in the absence of clear markers for quality, presents potential challenges for those who access a site. Although some sites have developed internal editing systems, these are not standard and do not follow traditional processes.

Advocates of digital resources believe that the immediacy of content delivery and worldwide networking of educators results in accelerated knowledge translation.[1] It is argued that comments are crowdsourced and serve as a form of post-publication peer review. This contrasts strongly with the traditional prepublication, closed peer review of most medical journals.[3,4]

A novel technique of "delayed sequence intubation" developed by Dr. Scott Weingart is an example of the rapid dissemination of knowledge that podcasts and social media make possible.[5] This innovation was announced on Dr. Weingart's podcast prior to traditional publication (http://emcrit.org). By the time the manuscript was printed, the technique had already been widely adopted and further refined (Scott Weingart, personal communication, September 4, 2013).

PURPOSE

We sought to enhance the quality and credibility of *ALiEM* by instituting an open, expert, peer review process.

DESCRIPTION OF THE INNOVATION

On September 3, 2013, we launched an open, expert, peer review program for *ALiEM*. There were two routes by which a blog post could receive an "expert peer review" attestation (Figure 1). In both routes, peer reviewers were clinicians who had contributed to textbooks, published peer-reviewed research, or been invited to speak at national conferences on the subject of the blog post (Table 1). Their name, title,

credentials, and review were transparently paired with each blog post.

The first route involved prepublication peer review, in a process analogous to traditional medical journals. This procedure was used when our writers were directly acquainted with experts on the topic in question. These experts were consulted prior to publication and reviewed the prerelease version of the post. Any reviewers' suggestions resulting in changes were openly credited as amendments to the blog post prior to their release, and the blog post was published with the review. An example is the blog post discussing a recent *Annals of Emergency Medicine* article that was peer-reviewed by Dr. Michael Callaham, the journal's editor-in-chief.[6]

The second route involved postpublication peer review and followed a procedure not typically possible for traditionally published resources. Rather than delay the release of a blog article while awaiting review, articles were published immediately after internal review by the blog editorial team. Postpublication, expert commentary was solicited via email or extracted from the article's open comments section and incorporated as an "expert peer review" linked to the original blog article. The author of the original post had the option to amend his or her work and/or respond to the expert review. Any amendments were openly credited. Readers were notified of any updates via the blog's main page. An example of this process is a blog post discussing novel use of the urine pregnancy test, which was paired with a review by the first author of a cited article.[7]

DISCUSSION

The innovation we implemented represents a win-win for the advocates of FOAM and traditional academia. Through expert peer review, blog readers can be more confident that the educational content is high quality and accurate and producers of FOAM can publish in a timely fashion and support transparent, scholarly discussions among a global community of readers.

Although our prepublication peer review follows a traditional process, our postpublication peer review uses a unique approach. The open amendment process of this route allows for the transparent exchange of ideas, improves the content within each blog post, and helps readers in personally appraising the material. Our long-term goal is to recruit experts to review and
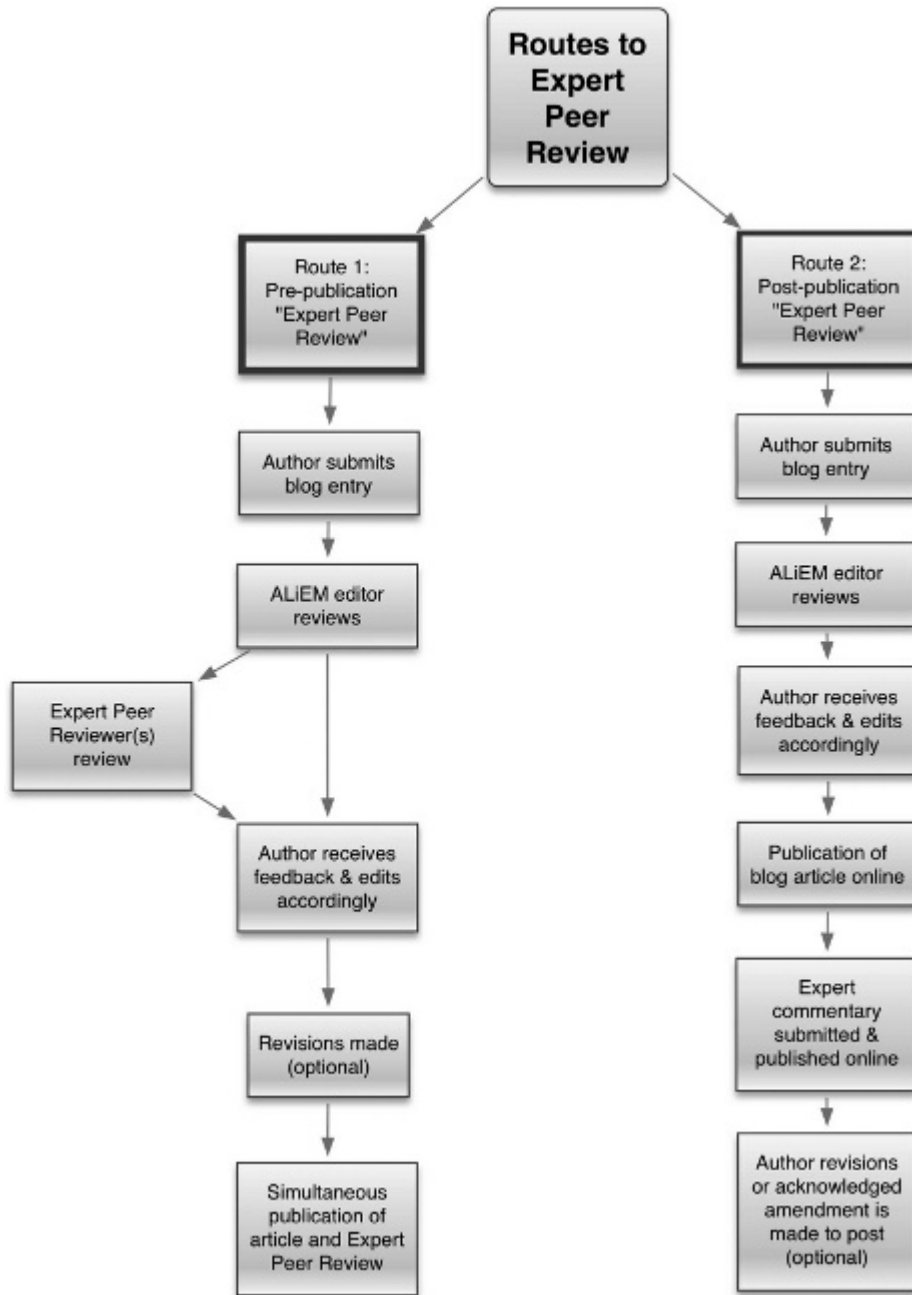
Figure 1. Flow chart of expert peer review routes.

comment on each blog article to improve the quality and credibility of the content on our site.

Academics may be more likely to value and trust the content of educational blogs that have a refereed feedback process because this approach extends traditional blog feedback beyond crowdsourced reader comments. The open, expert, peer review system we implemented allows educators and clinical experts to join and accelerate the translation of knowledge into practice.

Table 1. Criteria for expert peer review

To be considered an ''expert peer reviewer,'' the individual must be a clinician or educator who fulfills one or more of the following criteria on the topic in question:
- Published author of peer-reviewed articles
- Published author of textbook or textbook chapter
- National speaker

To date, the anecdotal feedback we have received on this initiative has been positive, but no formal evaluation has taken place. In the future, we intend to evaluate this initiative through 1) pre- and post-Web traffic analytics and 2) reader surveys of innovation impact. The expert peer review process we implemented at *ALiEM* provides a transparent, referee-based system that is more robust than that in existence in any other FOAM resources.

LIMITATIONS

There are limitations to the approach we have advocated. First, it is difficult to recruit experts to write peer reviews because it takes a substantial amount of time. Second, when published after an initial post, expert reviews are not viewed by as many readers. Finally, a single expert reviewer may share the same biases of the blog author and perpetuate a potentially flawed perspective. To mitigate these limitations, an *ALiEM* resident editor was recruited to manage reviewers and administer the process, blog posts summarizing changes to the expert peer-reviewed posts are published monthly, and crowdsourced reader comments are followed. With these limitations in mind, we are continuing our efforts to innovate and improve the quality of our blog.

SUMMARY

We describe an open, expert, peer review system implemented on the *ALiEM* blog in an effort to enhance the quality and credibility of its content while providing experts with a platform to communicate their expertise and positively influence interpretation of evidence and clinical practice.

Competing interests: Michelle Lin is a deputy editor at DynaMed (a subscription-based online clinical reference).

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