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Blog-based teaching for infectious disease: a curriculum for medical trainees

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Keywords

Anti-Bacterial Agents; Antimicrobial Stewardship; Infectious Disease; COVID-19; Education, Distance; Online learning; Curriculum Development

Abstract

Background

Antimicrobial resistance is on the rise and overuse of antibiotics is one of the biggest contributors. Diagnostic stewardship (DS), often described as ordering the right test for the right patient at the right time, is an adjunct to antimicrobial stewardship (AS). Koch et al's study to evaluate the extent of unnecessary testing found that most patients receive unnecessary tests (87.5%) and frontline physicians were often unaware of this[1]. Residents are at the frontline of patient care. They are involved in making critical decisions concerning diagnostic testing and antibiotic choice for treatment. They are an ideal target audience because they are uniquely positioned to be stewardship ambassadors.

Due to the COVID-19 pandemic, educational institutions have had to adapt and rethink their educational delivery methods[2]. Online didactics and other learning tools like YouTube videos, blogs, podcasts, and "tweetorials" have become increasingly common. A needs assessment by Chavez et al. found that 88% of infectious disease fellows surveyed were interested in an online collaborative resource[3]. Blog-based learning has been around for a few years, but its use has increased since the pandemic[4]. The impact on trainees of blog-based teaching regarding antibiotics, antimicrobial stewardship, and diagnostic stewardship is unknown.

Theoretical Framework, Methods, and Evaluation

We created a blog that is hosted on Notion, a free online collaboration platform. Our project uses the cognitive theory of multimedia learning and it is also rooted in constructivism. After "publishing" the blog on the internet, we will disseminate a link to the blog via emails to the internal medicine and family medicine residency. To evaluate the usefulness of the blog, we will create a questionnaire using a 5-point Likert scale. The survey will be designed using best practices for questionnaires in educational research[5]. It will be disseminated via email and X (formerly Twitter) with a total of 3 weeks allotted for completion. To evaluate the reach or "online footprint" of the blog, we will use Google Analytics to calculate views and the amount of time spent on the content by each viewer. We will also ask a group of 10 residents to rate the blog posts using the rMETRIQ score for online educational resources[6].

Impact

Blogs are an example of FOAMed (Free and Open Access Medical Education) that allows equal access to educational material at no cost to the learner. They also have the advantage of overcoming physical and geographical barriers to reach a wider audience. The asynchronous nature accommodates learners with busy schedules and those who find self-paced tools easier to engage with. The biggest limitation is the self-motivation required from the learner, along with access to a device to view the blog and a stable internet connection.

Results

We hope to find that residents and other medical trainees find blog-based learning a useful asynchronous tool and feel more confident about practicing antimicrobial and diagnostic stewardship interventions. We also hope that this makes trainees more interested in the field of infectious disease overall. As the online learning landscape changes, it becomes imperative to leverage technology and integrate it into medical education.

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