Practical tips for faculty development workforce training under pressure in the time of COVID-19 pandemic

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Abstract

The COVID-19 pandemic has been a stimulus for innovation in medicine. It has inspired a re-imagination of the traditional delivery of healthcare, as providers explore novel approaches to patient care and medical educators navigate how to rapidly rollout educational materials to prepare the workforce for front-line care. Although there is a plethora of literature about creating medical curricula in general, there is a dearth of resources directing educators how to deliver education in a time and resource limited setting. The following practical tips will help medical educators identify gaps, create materials, and deliver education under pressure.

Keywords: Continuing medical education; COVID-19; Online education; Education, professional, retraining; Medical education

Introduction

A novel virus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and its resultant coronavirus disease 2019 (COVID-19), has brought about an unprecedented change in the way healthcare is delivered throughout the world. In short order, clinicians worldwide have grappled with the need to rapidly learn about the disease, its diagnosis, manifestations, complications, transmission patterns, and how best to protect themselves from contracting the disease. Concurrently, they are responding to recommendations of physical distancing (Centers for Disease Control and Prevention. Social Distancing, Quarantine, and Isolation, 2020) and adapting to the implications of these recommendations on how to deliver care, ranging from implementing telemedicine (Hollander and Carr, 2020) to curtailling many elective diagnostic and imaging practices that were once considered routine care (American Society of Echocardiography. ASE statement on protection of patients and echocardiology service providers during the 2019 novel coronavirus outbreak, 2020; Rubin et al., 2020). As the demand for our health system continues to be overwhelmed, to deal with the shortage in healthcare providers, some retired clinicians are re-joining the workforce,
and others are deployed to practice either in unfamiliar environments or in new clinical roles (Ehrlich, McKenney and Elkbuli, 2020; Willan et al., 2020). The demand for the rapid delivery of education has never been more pressing. This article offers 12 tips for educators to consider in delivering education in such times. While the focus of the article is on the current pandemic, many of these tips apply to settings where education needs to be delivered under pressure.

**Tip 1**

**Conduct rapid reviews to distil relevant educational content and identify key gaps**

Educators need to critically but rapidly evaluate existing literature and identify key domains of relevance for addressing gaps in content knowledge, skills, or processes. Educators need to also recognize that evidence may or may not exist initially, therefore ongoing review is integral to identify new evidence when available. Working closely with those with the requisite content expertise and information specialists well versed in conducting rapid reviews is critical.

**Tip 2**

**Don’t reinvent the wheel, at least not right away**

Whenever possible, use developed content that is already available from reputable external sources, including regional, national, or international society guidelines, or primary literature. This content can be identified during your rapid review. As the goal is to make content available quickly, direct your learners to these sources early and solicit feedback. Once the scaffolding is built for your overall curriculum, then repackage this information to better fit within your dissemination platform.

**Tip 3**

**Target educational content to the right setting**

Educators need to recognize that content must be targeted appropriately to the right setting. While existing content fulfills many educational gaps, some local adaptation may be necessary. For example, teaching infection prevention and control measures at a local level may differ in content from that of teaching at a regional, national, or international level, as availability and types of personal protective equipment (PPE) may differ significantly. Careful attention to these relevant contextual differences will help determine what educational content can be reused, and what content needs to be adapted or even created *de novo*.

**Tip 4**

**Anticipate different learning needs depending on the target audience**

More important than ever is the need to know the learning needs of the target audience and learners. Re-training of retired clinicians may require a refresher of not only content but also practice-based processes, which may differ from the training needs of practicing clinicians who need to perform outside their usual scope of practice but in a similar hospital environment, (e.g. training hospitalists to practice in the intensive care setting). There may not be time to conduct a comprehensive needs assessment (Kern et al., 2009). In some settings, the target audience may not even be known to the educator until the educational content is developed. Being able to anticipate their needs and creating materials that address these will optimize workforce recruitment efforts. Subsequently, resources can be
directed towards refining your educational content based on feedback.

**Tip 5**

**Determine an optimal knowledge dissemination strategy**

In the context of physical distancing, the learning format will likely need to be online. Within this setting, educators should work with their institution’s experts in learning management systems and user interface design to optimize the delivery of educational content. House the educational content within a familiar online setting in order to minimize perceived and actual barriers to access. Use the best type of media available to support your message. For example, a series of short videos, podcasts, or interactive modules may be more effective in many settings than simply offering links to documents.

**Tip 6**

**Anticipate rapid and frequent changes to content**

In an environment of pervasive uncertainty, educators no longer have the luxury of perfecting their curricular content prior to delivery. Educators must do the best they can with the evidence available to them, recognizing that perfection is the enemy of good. Not providing guidance where guidance is needed may do more harm than providing best available guidance that may need to be modified later. Educators need to be nimble and anticipate that changes will need to be made. Recognizing ahead of time that change will be inevitable will allow for a built-in mechanism to address these changes, both in establishing contingency plans and in ensuring a viable method exists with which to communicate necessary changes.

**Tip 7**

**Manage information overload**

In times of rapidly changing data and processes, information overload will be inevitable. Educators can facilitate the management of information by providing a framework for learners and creating clear pathways to access just-in-time learning. For example, if admission processes change frequently, teaching learners where to look for protocols will be more valuable than teaching them details of current processes.

**Tip 8**

**Maintain open channels of communication**

Early and frequent communication to increase awareness and understanding in key stakeholders is critical in disaster management (Perko, 2011). Addressing urgent educational needs of your learners is no different at these times. While establishing a single source of communication is important, it is equally important to recognize that communication is a bi-directional pathway. Updates in content and processes must be communicated to learners rapidly and reliably, and feedback from learners must also be obtained rapidly so that urgent educational needs can be addressed in a timely fashion.

**Tip 9**

**Be sensitive to your learners’ emotions**
These are challenging times. It is imperative that educators recognize that the emotional state of the learner may negatively impact their learning, such that educational strategies that previously demonstrated effectiveness may no longer be as effective (Vogel and Schwabe, 2016). Educators may need to modify curriculum implementation strategies to accommodate. Allowing learners to complete modules at their own pace, or in a repeated manner until mastery is achieved will help learners achieve the competency needed.

**Tip 10**

**Adhere to sound educational principles**

Despite the volume of content and the urgency of delivery, adherence to sound educational principles can help optimize the educational experience during the instructional design stage, such as incorporating features of deliberate practice (Ericsson 2004), building in assessments for mastery-based learning (McGaghie et al., 2014), careful use of technology-enhanced education (Cook et al., 2011), and paying attention to cognitive load issues (Sweller et al., 2011).

**Tip 11**

**Celebrate early successes**

These are challenging times for the educators as well, as content development alone may seem like a never-ending task. It is helpful to build in measurable educational outcomes (e.g. number of learners who successfully completed the module) such that early successes can be celebrated. Share these outcomes with your education team, learners, and administrators. Content revisions should not be viewed as a failure.

**Tip 12**

**Build in redundancy**

Many educators may also be deployed as frontline workers. Redundancy should therefore be built into the educational leadership team such that ongoing educational efforts are not halted as educators are called to the frontline. In these unprecedented times, a team-based approach allows for educators from different backgrounds to pool best-practices and trial novel interventions early. This redundancy will also facilitate rapid iterations in response to feedback.

**Conclusions**

Education leaders are integral in training physicians to work in unfamiliar territory. There are many skills that require refinement for working during a pandemic, including building familiarity with new hospital processes, understanding the use of electronic medical records, and mastering infection prevention and control, amongst others. The burden of acquiring large amounts of new knowledge in a limited time frame can be overwhelming for both learners and educators. However, with some specific strategies and a structured approach, medical educators can help curtail fears and anxieties by creating and delivering educational content quickly and effectively.

**Take Home Messages**

- The COVID-19 pandemic has resulted in significant changes in the way healthcare is delivered. To
deal with the shortage in healthcare providers, significant workforce retraining is needed.

- The educational needs at these times are vast and urgent, which can be overwhelming both for educators and for learners alike.
- This article offers practical tips on how to manage content, anticipate needs and changes, and adhere to educational principles so that instructional designs can be optimized in these challenging times.

Notes On Contributors

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Bibliography/References

American Society of Echocardiography. (2020) ASE statement on protection of patients and echocardiologists during the 2019 novel coronavirus outbreak. Available at: https://www.asecho.org/ase-statement-covid-19/ (Accessed: 21 April 2020).

Centers for Disease Control and Prevention. Social Distancing, Quarantine, and Isolation (2020). Available at: https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/social-distancing.html (Accessed: 21 April 2020).

Cook, D. A., Hatala, R., Brydges, R., Zendejas, B., et al. (2011) 'Technology-enhanced simulation for health professions education: a systematic review and meta-analysis', JAMA, 306(9), pp. 978-88. https://doi.org/10.1001/jama.2011.1234

Ehrlich, H., McKenney, M. and Elkbuli, A. (2020). 'Strategic planning and recommendations for healthcare workers during the COVID-19 pandemic', The American Journal of Emergency Medicine. https://doi.org/10.1016/j.ajem.2020.03.057

Ericsson, K. A. (2004) 'Deliberate practice and the acquisition and maintenance of expert performance in medicine and related domains', Academic Medicine, 79(10 Suppl), pp. S70-81.

Hollander, J. E. and Carr, B. G. (2020) 'Virtually perfect? Telemedicine for Covid-19', New England Journal of Medicine. https://doi.org/10.1056/NEJMp2003539

Kern, D. E., Thomas, P. A. and Hughes, M. T. (2009) Curriculum Development for Medical Education. A Six-Step Approach. 2nd edn. Baltimore, MD: The Johns Hopkins University Press.
McGaghie, W. C., Issenberg, S. B., Barsuk, J. H. and Wayne, D. B. (2014) 'A critical review of simulation-based mastery learning with translational outcomes', Medical Education, 48(4), pp. 375-85. https://doi.org/10.1111/medu.12391

Perko, T. (2011) 'Importance of risk communication during and after a nuclear accident', Integrated Environmental Assessment and Management, 7(3), pp. 388-392. https://doi.org/10.1002/ieam.230

Rubin, G. D., Ryerson, C. J., Haramati, L. B., Sverzellati, N., et al. (2020) 'The Role of Chest Imaging in Patient Management during the COVID-19 Pandemic: A Multinational Consensus Statement from the Fleischner Society', CHEST. https://doi.org/10.1016/j.chest.2020.04.003

Sweller, J., Ayres, P. and Kalyuga, S. (2011) Cognitive Load Theory. New York: Springer Science+Business Media, LLC.

Vogel, S. and Schwabe, L. (2016) 'Learning and memory under stress: implications for the classroom', NPJ Science Learn, 1(1), pp. 1-10, https://doi.org/10.1038/npjscilearn.2016.11

Willan, J., King, A. J., Jeffery, K. and Bienz, N. (2020) 'Challenges for NHS hospitals during covid-19 epidemic', BMJ, 368, p. m1117. https://doi.org/10.1136/bmj.m1117

Appendices

None.

Declarations

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