

Original Research

Severe Acute Respiratory Syndrome and the Delivery of Continuing Medical Education: Case Study from Toronto

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Abstract

Introduction: Severe acute respiratory syndrome (SARS) struck Toronto in the spring of 2003, causing many deaths, serious morbidity, forced quarantine of thousands of individuals, and the closure of all provincial hospitals for several weeks. Given the direction by public health authorities to cancel or postpone all continuing medical education (CME) courses, including those sponsored by the University of Toronto Faculty of Medicine, SARS has had a profound effect on the delivery of CME in Toronto and beyond.

Method: Case study design using existing documents and self-report.

Results: The immediate, specific response of the University of Toronto CME program to SARS is described for the period from March 2003 to September 2003.

Discussion: During major outbreaks of infectious disease, continuing education providers should maintain regular contact with public health authorities and learners, enact a rational process for postponing or canceling courses, and implement a disaster plan flexible enough to ensure the delivery of education using technological advances.

Key Words: Administration, continuing medical education (CME), disaster planning, distance education, infectious disease outbreak, public health, rapid deployment, severe acute respiratory syndrome (SARS)

Background

For the Faculty Council Continuing Education Committee, Faculty of Medicine, University of Toronto, much is known now about severe acute respiratory syndrome (SARS). The disease had its origins in Southeast Asia in late 2002. Return-

ing to Toronto from her native Hong Kong in mid-March, a Canadian woman and her son fell victim to the illness and were transferred to a local hospital.¹ Here, unaware of recent World Health Organization (WHO) reports on the disease,² the serious infectivity and mortality of the disease were not recognized until March 2003.² Subsequently, SARS infected several hundred individuals and prompted the closure of Ontario hospitals to all but urgent care and SARS-related cases.³ A second “wave” of SARS occurred in May 2003. Eventually, thousands of people were quarantined and over 40 died, including 3 health professionals.⁴

SARS and Continuing Education

Less well known is the impact of SARS on continuing medical education (CME) in Toronto.

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Like most accredited CME providers, the University of Toronto offers traditional accredited courses and programs (140 in 2001–2002), a smaller number of individual traineeships, video-conferenced and face-to-face rounds, faculty development sessions, research meetings, and some Web-based services.⁵ The program is the largest in Canada and one of the largest in North America⁶; the 2002–2003 program was in full swing when SARS emerged.

Early public health advice to contain cross-contamination by stopping interhospital visiting and subsequent WHO warnings against travel to Toronto greatly restricted the business of CME. Public health advice and directives were delivered by several forms of communication. For the first few weeks (March and April 2003), notification was through the public media (newspapers, radio, television) and by direct communication from public health authorities to the hospitals. Later, these modes were augmented by electronic mail and fax communiqués sent by the provincial medical association.

Ten accredited courses were cancelled and five were postponed during the initial SARS period. Attendance dropped at subsequent events until September 2003. During the initial period in which hospitals were closed, all rounds were cancelled, along with most research meetings. Thousands of registrants and visiting faculty needed information quickly. Even as SARS retreated in May and beyond, and events could be held, they were subject to stringent restrictions, including the wearing of masks, hand washing, and the issuance of warnings. SARS presented the Faculty of Medicine at the University of Toronto and its Academic Health Sciences complex with significant educational, logistical, budgetary, and ethical challenges.

At the time of this writing, we have an opportunity to look back. By sharing this case, we expect that other educational planners, policy makers, and learners may be helped when facing the problems of proliferating infectious disease or the similar, if more malevolent, challenges of bioterrorism.

Heuristics to Guide Our Analysis

The action and organizational learning theories of Schön⁷ and Argyris⁸ provide a conceptual framework for our self-analysis. Schön⁷ argues that professionals strive to achieve a “steady state” of practice—a balance between theories and knowledge “in use” and the context in which they are situated. “Surprises” destabilize this steady state, prompting practitioners into a process of “reflection-in-action.”

Typically, reflection-in-action produces what Argyris⁸ calls “single-loop learning”—learning to manage disruption and a return to a steady state. Ideally, change will also prompt a process of “reflection-on-action”—a deeper analysis that increases the likelihood of “double-loop learning,” which prompts growth and readiness for future change. Sometimes reflected in a convergence of “espoused theories” and “theories-in-use,” double-loop learning provides a platform for greater ongoing learning and increased capacity for change; it is seen as a significant determinant of improved practice and organizational success.

CME and SARS: Reflection-in-Action

Before March 2003, the steady state for our continuing education (CE) efforts was the provision of a supportive infrastructure that enabled the timely and efficient delivery of events, that is, courses and conferences. SARS disrupted that steady state.

The Faculty of Medicine’s governing body for CE (the Faculty Council Continuing Education Committee, comprising the directors of CE and continuing professional development in each of the Faculty’s clinical departments) was rapidly convened to develop a response. On the one hand, the committee could suggest that all courses in the foreseeable future be cancelled. Although it would reduce the risk of cross-infection between health professionals, such a step would deny educational opportunities to registrants, inconvenience course planners and speakers, carry financial and other liabilities to departments and divisions of the Fac-

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ulty of Medicine, and delay the translation of knowledge into practice. On the other hand, the committee debated the wisdom of proceeding in a “business as usual” fashion, exposing health professionals to the risk of SARS.

Three organizational value statements provided guidance. These included the Faculty’s social contract with its community,⁹ its principles of ethical decision making,¹⁰ and its conflict-of-interest guidelines.¹¹ Five principles emerged from this reflection-in-action:

Paramount Importance of the Health Professional Learner and His/Her Patient

We acknowledged the multiple demands and frequently contradictory messages given to the health professional learner—our primary client—regarding his or her ability to attend conferences. We determined that our clients had the right to make these personal decisions and that they should incur no financial penalty for canceling a registration. In addition, we urged full and regular communication with registrants via Web sites, voice mail, fax, and electronic mail.

Seeking Information from Public Health Authorities

We determined that there was a primary and overriding need for accurate information to guide risk assessment and decision making. The Faculty’s Continuing Education Office established a consultation process with local and provincial offices of health and safety and reported the results of these consultations to course directors and departmental chairs on a regular basis.

“Go-No Go” Decision-Making Process

We saw that the decision to cancel a course was multifactorial, and five considerations were identified to guide cancellation decision making on a case-by-case basis: (1) the expressed concerns of the registrant (demonstrated by registration can-

cellations and/or direct communications) and of the planners, (2) current public health directives, (3) the nature (specialty, practice setting, location) of the course attendees and their subsequent risk of exposure to SARS, (4) the site and format of the course, and (5) the logistical possibilities in postponing courses.

Safety Measures during a Course

When a decision was made to proceed with a course, a set of precautions was recommended consistent with advice from public health authorities. Precautions included (1) the prominent display of a SARS public health notification, (2) completion of a SARS screening tool by each registrant,¹² (3) repeated hand washing with appropriate agents, (4) and, only occasionally, more aggressive protection, such as taking each registrant’s daily temperature and the use of masks.

Alternative Means of Delivering CE

Finally, we recommended increased use of information and communication technologies to integrate distant faculty and link distributed learners with a blend of supportive educational technologies when travel to courses and conferences is restricted.

CME and SARS: Reflection-on-Action

By July 2003, SARS was no longer active, and it was possible to reflect on our actions. We thought that the single loop of return to a steady state had been achieved and wondered where the opportunities might lay for double-loop learning.

Beyond SARS

Although SARS was the focus in our community, its qualities were not unlike those of other threatened biologic proliferations, including malevolent bioterrorism. In hindsight, we saw that practitioners “on the front line” were aware of the

Lessons for Practice

- SARS is a severe, acute respiratory disease with a high morbidity and mortality and serious implications for health care workers.
- During SARS (and similar) outbreaks, CE providers need to maintain regular contact with public health authorities and learners and to develop a rational and flexible decision-making process regarding course cancellation, delay, and/or modification.
- CME providers need to develop a flexible "disaster plan" to prepare for possible other, similar outbreaks.
- CME providers need to develop alternative means of CE delivery using technologic advances.

emergence of a "strange infection" before the authorities, and we see the need for better means of communications, a wider network of decision makers with stronger connections to the front line, regular links to public health, and a disaster plan for communications that includes the better use of information and communication technologies such as cell phones, fan-fax systems, and the Internet.

Beyond Traditional CME

For CE practitioners, our reflection-on-action has three dimensions: translating knowledge of SARS into practice, improved integration of distance education technologies, and a broadened vision of CE.

Although much is now known about SARS, much remains uncertain. Perhaps of most relevance for CE is understanding why SARS so readily entered the Toronto community. Was there something about the way in which WHO and

local guidelines were created and written, transferred, or implemented that was an obstacle to adoption? Was the guideline translation effort sufficiently informed by the literature on risk communication,¹³ a domain of knowledge not typically included within the frame of CME? These questions require an examination through the lens of knowledge translation research,¹⁴ by which we mean the effective and timely incorporation of evidence-based information into the practices of health professionals in such a way as to effect optimal health care outcomes and maximize the potential of the health system.

SARS profiled the potential value of distance education technologies in CE and the knowledge translation process. We learned, for example, that faced with canceling their attendance at events, registrants were willing to participate via distance education technology. This prompted several requests for technology deployment. One request for distance education technology made just before a large conference prompted the rapid design of a blend of distant conference support technologies, including strategic use of video-conference and Webcast, full-time "voice-over-Internet," and rapid archiving. Although the design was deliverable technically, the solution was financially impossible. Double-loop learning will be achieved when the capacity for rapid deployment of scalable technologies is available to help us meet future challenges of this sort. In this instance, for example, we would be prepared (logistically, psychologically, and technically) to offer Web-based or videoconference courses in instances in which an infectious agent prohibits the face-to-face meeting of individuals.

In this context, we raise one last double-loop learning question. Despite the fact most providers recognize the need to change the CME paradigms,¹⁵ the theory-in-use continues to be that CE happens during educational events. Is it possible that the vulnerability of event-focused CE will move CE from a passive, reactive model toward a multimodal, proactive, and systemic vehicle that achieves appropriate and timely transfer of knowledge to clinical

Table 1 Short- and Long-Term Responses for CE Delivery in a Post-SARS Era

Issues	Short Term	Long Term	Examples
Primary guiding principles Need for information	Respect an informed learner's right to choose without penalty Provide as immediate and up-to-date information as possible and learn about knowledge gaps	Provide informed learners with a wider field of choice than go/no go Develop an expanded information network and a rapid information deployment framework	Allow course registrants to cancel attendance without penalty Maintain registrants' and other learners' e-mail and fax numbers; develop a Web-based update for all learners linked to public health or other authorities
Course deployment	Decision-making grid regarding course cancellation	Routine development of plans for alternate modes of delivery for all CE programs	Develop a risk assessment checklist for course cancellation; plan for contingencies (e.g., videoconferencing a guest speaker) where possible
Risk management	Maximize compliance with recommended safety measures during programs	Better integration of risk management models in communication plans	Provide detailed information to registrants before programs, linked where possible to usual mailings, listserv communications, etc.
Implications beyond SARS	Manage SARS and learn from its consequences	View SARS as but one member of a class of threats	Incorporate risk assessment, disaster planning, alternative delivery methods into short- and long-term strategic planning
Expand the models and methods for CE delivery	Use the disruption to steady state as a window through which to identify the added values of alternate technologies	Build an infrastructure for expanded models/methods; normalize their integration	

CE = continuing education; SARS = severe acute respiratory syndrome.

Table 2 "What Is" vs. "What Could Be": A Look at the Effectiveness of CE Methods and Systems*

CE Methods and Systems	Outcome
What is (models/systems in use by most CE practitioners)	Didactic, event-focused courses and conferences; mailed, unsolicited guidelines; unsystematic, disorganized delivery
What could be (the realization of espoused models/systems of most CE practitioners)	Proactive, coordinated methods based on adult learning principles using practice-linked technologies
	Relatively ineffective knowledge translation
	Effective knowledge translation through accumulated small significant effects

CE = continuing education.

*Adapted from the Canadian Institutes for Health Research definition, 2001.

practice? Clearly, the literature has pointed us in that direction for over a decade.¹⁶ Further, SARS has prompted a more strategic investment in video-conferencing and one pilot project using Web-casting technologies. Other, more innovative technologies, such as cell-phone communication, are the focus of grant applications.

Finally, we are compelled by the deep tragedy of SARS in Toronto to reflect on this experience to ensure that we achieve enduring change in our delivery of CE (Table 1). In achieving this, we will enable wise CE practitioners to continue to translate knowledge into practice during threatening times and better serve the needs of our communities (Table 2).

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