Teaching and fostering change management in medical education
L’enseignement et la promotion de la gestion du changement en éducation médicale

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Background

It is an understatement to say that the world is constantly evolving, with the pace of change seeming to accelerate with each year. Patients and healthcare issues have never been more complex—people are living longer and experiencing increasing comorbidity in old age. Digital transformation has been increasing exponentially, with new technologies outpacing the ability of society to implement them. The rapid pace of change has also had significant impacts on the practice of medicine including through digital health and artificial intelligence.

This background of change has been accelerated by the COVID-19 pandemic, which has forced the healthcare system to adjust to rapidly changing environments and tested the limit of society’s adaptability. It is certain that the pandemic will have long lasting effects in healthcare, and in this context, it has never been more important to harness change management processes to ensure effective evolution of care delivery. Adoption of change management in medicine has been a topic of focus in recent years, with a recent systematic review identifying thirty-eight studies applying change management principles to the healthcare setting.

To harness the power of change management in medicine, we must teach, support, and foster medical trainees as they drive innovation. In recent years, learners have been instrumental in leading key shifts in medical culture such as physician wellness, environmental education, as well as equity, diversity, and inclusion. Furthermore, over the past year and a half, learners played a critical role helping medical education adapt and evolve given the limitations of the pandemic. It is evident that trainees as the future of the profession are also at the forefront of innovation—indeed, Nakagawa et al recently highlighted how the potential benefits of technology must be driven by a younger generation of physicians to reach its full potential in healthcare. Thus, it is critical to teach them change management principles and support their application thereof.

Current status of leadership in medical education

Teaching innovation and leadership in medicine is not a new concept in Canada. The Future of Medical Education in Canada Postgraduate Project (FMEC PG) was a collaborative project that set out 10 key recommendations for residency education to best serve Canadians. Recommendation eight was to foster leadership development including “feedback, conflict resolution, change management, and working as part of a team...so they can work effectively with other stakeholders to help shape our healthcare system to better serve society.” Furthermore, the CanMEDS physician competency framework, used internationally, identifies the ‘Leader’ role as one of seven key competencies required of a physician. This role is defined: “as Leaders, physicians engage with others to contribute to a vision of a high-
quality health care system and take responsibility for the
delivery of excellent patient care through their activities as
clinicians, administrators, scholars, or teachers.” An
enabling competency within the Leader role is “Facilitate
change in health care to enhance services and outcomes.”

This focus is further reflected in accreditation with
leadership development and the CanMEDS roles
referenced in standards of both the Committee on
Accreditation of Canadian Medical Schools6 and the
Canadian Residency Accreditation Consortium6 outline.

Although there have been efforts to integrate the ‘Leader’
role in medical education, there is still ample opportunity
to improve how medical education fosters leadership
development amongst trainees, particularly with certain
aspects of leadership. Despite the fact that the FMEC PG
project and CanMEDS Leader role specifically reference
change management and leading change as key
components of leadership, this specific skill set continues
to be underexplored. Through deliberate education and
engagement, the next generation of physicians can be
more prepared to effectively drive change in our health
system.

Path moving forward

In order to help develop the next generation of physicians
as competent change makers, we suggest the following
steps:

Fostering change management in medical education

Teaching change management requires strategic
curriculum mapping to ensure concepts are well integrated
into the formal curriculum. Change management principles
should be integrated starting from pre-clerkship. Small
group, case-based and problem-based learning sessions
are an ideal setting to highlight the principles and
importance of change management in the health system.
For example, a case about sepsis can highlight health
systems, process and safety issues that lead to late
recognition. As part of the discussion, learners can be
challenged to discuss and develop plans for a quality
improvement (QI) project with specific highlights of what
change management principles need to be considered to
execute the project.

All curricula should be grounded in established change
management theory. We suggest Kotter’s Leading Change7
as an excellent starting point. Consideration should be
given to promoting Kotter’s Our Iceberg Is Melting8 as
optional reading material for learners interested in
congducting change projects. The fable serves as an easy-to-
read introduction to basic change management principles.

As we continue the shift to Competence-By-Design, change
management principles should be included in Entrustable
Professional Activities (EPA) so that learners and
preceptors can reflect on their roles in change processes
and their growth in the ability to bring about change in a
variety of settings. Inclusion in low-stakes evaluations
which are meant to foster learning and development help
ensure faculty are actively participating in developing this
skill set and that learners note its significance. Learners in
all programs, especially those who are more senior,
encounter many situations that require change
management principles in clinical and non-clinical settings.
Any resident who serves on a residency program
committee for example will likely have been involved in
change management when new curricular or program
initiatives roll out. Many other learners need to
demonstrate effective change management when the
clinical institution where they are on rotation implement
changes to procedures and policies.

We recommend that change management not be
approached through assigning a single stand-alone change
management assignment. This approach, sometimes taken
to fulfill non-medical expert competencies, is ineffective as
it gives learners the sense of an additional burden of
activity. Kern’s six steps to curriculum design9 can readily
be applied to change management curricular design.
Performing a needs assessment and clearly outlining goals
and objectives are important initial steps. Carefully
considering educational strategies which we comment on
as well as implementation and evaluation methods can all
be done with learner engagement.

In addition to understanding change management theory,
there are arguably more important skill sets that are
important to foster during early medical education. An
inquisitive mindset, the knack to seek out opportunities
and see potential for change in everyday challenges and
situations are just some of the oft-described intangibles
that the curricular culture should aim to promote. To this
end it is important that trainees are afforded the
opportunity for authentic professional identity formation
(P IF). PIF can be defined as the transformative journey
through which one integrates the knowledge, skills, values,
and behaviours of a competent humanistic physician with
one’s own unique identity and core values. Supporting the
varied backgrounds and experiences that learners bring is
important in helping them feel empowered to undertake
change initiatives that are based on their lived experiences. A wide range of delivery methods from panel discussions to simulations can be utilized to stimulate discussion on fostering and supporting authentic PIF. Mentorship is also known to have significant effects on PIF and we return to mentorship as critical to change management development later in this paper.

**Deliberate engagement of learners in change processes**

All medical faculties and healthcare organizations should make it a priority for learners to be involved in change processes within medical education. Firstly, the learner voice is critical to helping ensure diversity in perspectives at planning and execution tables. As key stakeholders of change processes in medical education, it is critical that learners have the opportunity to be involved. Moreover, as future educators and health systems leaders, these opportunities serve as important springboards and learning experiences for the future.

Learner engagement must be deliberate and meaningful, acknowledging varying levels of previous experience learners enter medical school with. Further, medicine’s natural hierarchy can contribute to situations where even when learners are engaged, it is done in a more token manner, sometimes attributed to the fact that learners may have limited experience. In recent years, faculties of medicine and medical organizations in Canada have made strong advancements in learner engagement and involvement in committees and decision-making structures. They should be commended for their efforts and supported to continue this pattern as there continue to be areas where learner engagement can be strengthened. Continuing to create optimal learning and working environments which invite diverse learner input and participation is key to ensuring authentic and productive engagement and improving medical education.

Further to this, learners who are invited to committees and change making bodies should be supported with meaningful mentorship. Mentorship has been noted to be critical in academic medicine. Learners should be set for success when they enter leadership tables, and the importance of having mentors with whom to discuss their ideas, questions, and struggles cannot be overstated. Both formal and informal opportunities are welcomed.

**Opportunities for further enrichment in change management**

Lastly, for learners with special interest in change management and leadership, faculties should foster opportunities for them to develop additional skill sets. This can be accomplished through para-curricular educational opportunities and encouraging deliberate engagement in real-world change management opportunities outside of the medical faculty. Opportunities with the broader medical education community (e.g. national organizations), the health system (e.g. local health authority) and other unique settings (e.g. start-up healthcare companies) would greatly strengthen student learning experiences.

These can be done both through brief shadowing like experiences as well as through immersive experiences with both having the potential to further promote and develop change management leaders within medicine. Similar to curricular initiatives though, these opportunities must be carefully and deliberately planned. What exactly is the role of the learner in the change management project? How much responsibility will they have at the leadership table? What skill sets will they need prior to engagement?—to continue to develop as they participate? How will they be supported and mentored? Thoughtful consideration and co-development of learning goals with enthusiastic learners will increase the likelihood of the experiences being mutually beneficial.

**Conclusion**

Leadership, specifically change management, is a critical competency of being an effective physician. Although the importance of this concept is supported by medical organizations and faculties of medicine in Canada, there remain many areas of improvement to ensure that all medical trainees learn to lead change in their local and larger contexts. Herein we outline key recommendations to support the inclusion of change management principles throughout medical education in Canada, including systematic adoption of educational opportunities, thoughtful, authentic engagement in the medical education and healthcare systems, as well as supporting para-curricular opportunities for further enrichment. Only by training all physicians to be change makers will we be able to realize the full potential of our healthcare system in caring for Canadians.
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