Innovation as the core strategy for the future success of academic health centres

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Tough economic times pose challenges for all sectors of the economy, and academic health centres are no exception.[1] Health care reform in the United States will also pose additional challenges for academic medicine.[2] What is the future role for academic health centres? Innovation, productivity and prosperity (particularly in the health sector, which includes health care, education, research and industry) are important contributions not only to the health status of the population but also to the well-being of society.[3] We propose that innovation should be a core strategy for academic health science centres (AHSCs) and propose strategies to enhance that historical strength. What is needed in order for AHSCs to develop that strength?

The AHSCs or teaching hospitals have a tripartite mission of research, education and clinical care.[4] Through research, AHSCs aim to develop new and better methods of caring for patients and improve the health care outcomes of the broader population; we, like many others, would argue that AHSCs have an imperative or social responsibility to do so. Thus, innovation is an implicit goal of every AHSC and is essential to fulfilling their academic mission. Whereas attention has been focused on improving research innovation, little attention has been directed to the development and evaluation of specific strategies to promote innovation in the academic health sector. The AHSCs should consider turning to the private sector if they want to implement tactics that have been shown to promote and sustain a culture of innovation.[5] Although some might question the relevance of the private sector to academic centres, many of the strategies merit attention, testing and even implementation.

Whereas AHSCs strive to generate Nobel prize–worthy discoveries, this lofty goal cannot be the only driver of innovation within the organization. The need for innovation has spread beyond research to many areas, including the education of health professionals and patients through new technologies, such as e-health, e-learning or simulation. Innovative methods for managing institutions and increasing efficiency have also become essential for effective and financially viable AHSCs. Leadership has a key role to play in promoting innovation.[5] Innovation needs to be explicitly integrated in 1 or more of the institutional vision, mission or values. However, while explicit statements by leaders about the importance of innovation are essential, alone they are insufficient. Rather than focusing exclusively on research, the promotion of innovation should occur in all spheres of activity, including clinical services, support services, educational activities and administration. Leaders also need to create the necessary structures, processes and reward systems. For example, leaders play a unique role in developing a workplace where staff members feel comfortable bringing forward and testing new ideas and investing resources to promote innovation. Although this does entail an element of risk in that new innovations may not succeed or may not be more cost effective than current approaches, this should not curtail the innovation imperative of leading AHSCs.

How people are organized may also have a substantial influence on creativity and innovation. The traditional departmental organizational structure provides comfort in groupings of like disciplines and allows administrative simplicity for performance management and fiscal accountability, but has the potential to create institutional silos that may constrain interactions and

potentially create competitiveness that stifles creativity. Alternative models of organization that focus on integration, such as interdepartmental units, centres of excellence or institutes, bring multiple disciplines together around a single theme, such as the heart or nervous system, but may replace one silo by another. Matrix organizations create overlapping or intersecting organizational designs. For example, a surgeon may belong to a university or hospital department of surgery but may also be a member of a centre or institute focused on an organ, such as the heart, or another discipline, such as transplantation or regenerative medicine. Because matrices will be more complicated to administer, institutions will need to create clear lines of accountability and financial responsibility. They will also need to ensure that the matrix approach enables interdisciplinary and interprofessional creativity.

The skills and attitudes of people working in AHSCs will affect performance, culture, direction and willingness to change. While people who innovate tend to be independent, think more expansively, combine concepts and more willingly take risks,[5] an organization that rewards only such high-octane risk-takers would not derive the full value of the innovation chain across the skill mix of its staff complement. Multidisciplinary approaches are needed to create new approaches to problems.[6] Thus, the ability to work collaboratively and share ideas is likely to foster creativity. Creating a climate that encourages brainstorming and welcomes ideas will tend to bring out innovative ideas from most but will require identification of formal roles for individuals or groups of individuals to generate, discuss, test and disseminate ideas. Newer generations will have different attitudes toward interaction and collaboration, evidenced by a high degree of comfort with the Internet and social networking, which has the potential to bring broad input from large numbers of individuals, particularly over dispersed geographic areas, and minimize social constraints and hierarchy.

The organization must find ways to recognize and reward innovation across all activities — research, clinical, educational or administrative.[5] Such rewards need not be financial or only financial, but should include celebration of innovation, more protected time or time to pursue professional development. Furthermore, recognition should include both small and large innovations and reward both groups and individuals. Keeping in mind that results may be slow in coming, reward should be targeted toward creativity rather than production goals. Equally important as appropriate rewards is avoidance of criticism of failed attempts at innovation, since some, if not many, of the ideas or initiatives will not be successful. Clinical innovations pose unique challenges. Specifically, "failed" innovation can adversely impact patient outcomes with associated liability risks. Encouraging clinical innovation will require processes for introducing innovations in a way that does not jeopardize patient safety.[7]

Innovation requires support.[8] First and foremost, individuals require time to be creative. A fully committed day with stressed individuals is almost certainly not going to lead to creativity. Finding the appropriate balance between work and creative time is not straightforward in a for-profit, competitive market or in a constrained publicly funded model. A separate stream of dedicated time may also address the potential tension between the discipline of quality improvement based on standardization and the disruptive nature of innovation.[8] Developing and evaluating innovative ideas will often benefit from seed money or innovation funds.

An enduring theme of research is that physical colocality — placing offices of individuals or groups of researchers together — strongly influences the probability of collaboration. "Who to place where" should be a key feature in designing work spaces. Physical design also needs to consider the use of open spaces and types of common areas. Open spaces provide more opportunity for interchange but pose challenges for personnel privacy and security of health information. Industries that value creativity create informal common areas to encourage creative thought through casual interaction. This later concept, the equivalent of a modern "water cooler," should influence the placement of major equipment and eating and working areas.

In summary, the time is ripe for innovation as a key strategy to preserve and enhance the clinical and academic mission of teaching hospitals. While yet to be tried in the academic setting, the private sector has tested and implemented many strategies that have direct relevance to AHSCs. Teaching hospitals will be challenged to grapple with complex issues, including measuring innovation and developing methods to evaluate promotion strategies. However, the current climate provides an opportunity and mandate to exploit the implicit strength of AHSCs to innovate.

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