

Stroke Rehabilitation in Ontario: An Opportunity for Health Care Transformation

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ABSTRACT: In this article, Ontario's stroke rehabilitation system is used to exemplify the challenges faced by rehabilitation and healthcare systems across Canada who are attempting to provide quality care to patients in the face of increasing demands. Currently, Ontario's rehabilitation system struggles in its efforts to provide accessible and comprehensive care to patients recovering from stroke. We begin our exploration by identifying both the primary stakeholders and the underlying factors that have contributed to the current challenges. The framework put forward in the Canadian Medical Association's recommendations for transformation is then used to suggest a vision for a more patient-focused system incorporating three key principles: a broader perspective, a patient-first approach, and greater unity. The use of health information technology, proper incentives, and greater accountability are discussed as mechanisms to improve the quality and efficiency of care.

RÉSUMÉ: La réadaptation après un accident vasculaire cérébral en Ontario : une occasion de transformation des soins de santé. Dans cet article, le système de réadaptation de l'accident vasculaire cérébral (AVC) en Ontario est utilisé comme exemple des défis rencontrés en réadaptation et en soins de santé à travers le Canada par les organismes qui tentent de fournir des soins de qualité aux patients dans un contexte de demande sans cesse croissante. Actuellement, le système de réadaptation de l'Ontario lutte pour fournir des soins accessibles et complets aux patients qui récupèrent d'un AVC. Nous identifions d'abord les différentes parties prenantes et les facteurs sous-jacents qui ont contribué aux défis actuels. La structure proposée par les recommandations de l'Association médicale canadienne est ensuite utilisée pour suggérer une vision d'un système plus centré sur le patient, avec trois principes clés : une perspective élargie, une approche centrée sur le patient et une plus grande unité. Nous discutons de l'utilisation de la technologie de l'information dans le domaine de la santé, des incitatifs adéquats et d'une plus grande imputabilité comme moyens d'améliorer la qualité et l'efficacité des soins.

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In a recent report on the state of the Canadian healthcare system entitled "health care transformation in Canada: Change that works. Care that lasts" (2010), the Canadian Medical Association (CMA) suggested a pathway toward a more patient-focused, sustainable health care system¹. Their report identified current problems in the system, discussed a vision for the future and presented a framework for transformation by which this vision can be achieved. The authors of the report suggested that proper incentives and greater accountability could be used to bring about the desired changes.

In this article, Ontario's stroke rehabilitation system is presented as an example of the challenges faced by provincial healthcare systems that are struggling to provide quality care in the face of increasing demand. Post-stroke rehabilitation is a complicated system where involvement of multidisciplinary teams that include physicians, therapists, nurses, social workers and many other professionals is required. In order to be effective,

these professional services must be available from the time of acute discharge through to community reintegration, posing tremendous challenges.

In Ontario, Canada's most populous province, the stroke rehabilitation system must accommodate the needs of patients from densely populated urban centers to scarcely inhabited rural

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regions and everything in between. As such, many of the challenges faced by healthcare systems across Canada are also likely experienced by at least one region of Ontario's stroke rehabilitation system. In this paper, discussion will focus on the challenges that have arisen in trying to meet the need for post-stroke rehabilitation in Ontario and how application of the principles described by the CMA can help Ontario's stroke rehabilitation system become both patient-focused and sustainable.

Access to rehabilitation is regularly identified as one contributor to the backlogs experienced by patients in acute facilities². In 2007/08, 23% of stroke patients in Canada spent at least one day in alternative level of care (ALC) status (indicating that they no longer required acute medical management), and waiting for access to a rehabilitation bed was cited as the reason for 19% of these patients². Approximately 20,000 people experience a stroke or transient ischemic attack annually in Ontario³ and many of these patients require some form of post-stroke rehabilitation⁴. As such, a well integrated stroke system that seamlessly incorporates stroke rehabilitation has the potential to help alleviate some of the burden experienced by acute medical facilities. Unfortunately, Ontario's current stroke rehabilitation system has been identified as a "weak link" in the stroke care continuum⁵, characterized by a narrow focus, a culture of provider-driven care and an inability to adapt to the changing needs of patients along the care continuum. The result has been a failure to maximize both resource utilization and patient outcomes⁵.

Part 1 – The Problem

Canada's universal healthcare system was founded on five principles: universality, accessibility, portability, comprehensiveness and public administration⁶. The CMA recommendations suggest that re-exploration of these principles is necessary to adjust to the modern needs of Canadians¹. Our examination of Ontario's stroke rehabilitation system suggests that two of the five principles are not being applied, namely accessibility and comprehensiveness.

Accessibility

The Canada Health Act defines accessibility as insurance that provides "health services on uniform terms and conditions and on a basis that does not impede or preclude ... reasonable access to those services by insured persons" (p.8)⁶. Unfortunately, many patients who experience a stroke in Ontario are unable to access the care that they need. In a recent Ontario-based trial of a standardized screening tool, 37% of patients discharged from an acute facility were identified as candidates for inpatient rehabilitation⁷, while the Ontario Stroke Network (OSN) used a generalized benchmarking strategy to suggest 39%²; however, in 2007/08, only 23% of stroke patients discharged from an acute facility were identified as having been admitted to inpatient rehabilitation across the province. Furthermore, the proportion of patients admitted to rehabilitation in different Local Health Integration Networks (LHINs) ranged from 14% to 32%, suggesting inequality of access by geographic region across the province³.

Gaps in accessibility are even more evident among patients who have been discharged to the community. In 2007/08, only 33% of stroke patients discharged to the community had access to occupational therapy (OT), 25% to physical therapy (PT) and 10% to speech language therapy (SLT)³ in the community. Moreover, the average number of visits received by patients who did access services was only 2.8 for OT, 3.8 for PT and 3.0 for SLT³.

Comprehensiveness

Comprehensive coverage in Canada's healthcare system means that all medically-necessary health services are available to patients¹ and that the costs of such services are covered⁶. For many patients, post-stroke rehabilitation is a necessary component of optimal care⁸. Timely access to inpatient rehabilitation⁹⁻¹¹, appropriate therapy intensity¹²⁻¹⁵ and facilitated discharge to the community¹⁶⁻²⁰ have all been shown to improve patient outcomes and to help utilize existing resources most efficiently. However, many patients who would benefit are unable to access rehabilitation in a timely manner, if at all³, and a recent survey suggested that one of the primary patient complaints regarding the continuum of stroke care was that community rehabilitation programs were not able to adapt to their changing needs²¹. When patients do not have access to the level of care they require, they are often left to pay for such services out-of-pocket.

System Challenges

We believe that challenges with accessibility and comprehensiveness in Ontario's stroke rehabilitation system are the result of a number of influences that are likely to exist in other provinces and other healthcare sectors across the country. As an example, nearly all provinces in Canada are struggling with the issue of ALC bed days in acute care²², which can be in part caused by insufficient resources for post-acute rehabilitation. Our discussion of Ontario's rehabilitation system is therefore designed to address issues that are likely to exist across the country. We leave it up to the reader to identify its applicability to their particular area of interest.

It has been well established in organizational research that when individual reward systems are not in line with desired outcomes, inefficiency and undesirable outcomes result²³. Although the goal of Ontario's stroke rehabilitation system is to provide optimal and efficient patient care, the system is comprised of numerous stakeholders who have different motivations for action. Over time, the system has responded to the influence of these stakeholders in ways that appear, from a broader perspective, to be maladaptive.

Organizational research also tells us that promotion of change must begin with an understanding of the *status quo*²⁴, which means identifying all of the stakeholders in the system and what motivates them. In the stroke rehabilitation system there are five key stakeholder groups: patients, family and friends, clinicians, program administration and the funder (in this case the Ministry of Health and Long-Term Care, MOHLTC).

The patient, their family and friends all hope for a speedy recovery. Yet, they are often apprehensive about losing the support provided to them by rehabilitation professionals and

often lobby for extended access to services. Unfortunately, in a system where resources are scarce, this additional care may result in missed opportunities to provide rehabilitation to other patients.

In a similar fashion, rehabilitation clinicians (physicians, therapists, nurses, social workers etc.) develop personal relationships with their patients and want to maximize their recovery. Yet, clinicians are also responsive to workplace incentives, which influence their daily activities. We suggest that under the current system, three factors have led clinicians to provide care in a way that is not in the best interest of the broader system. First, clinicians never have to account for the efficiency or cost of the care they provide; second, they receive limited information about the broader impact of their care; and third, they function within a provider-driven culture that often does not prioritize active rehabilitation over non-therapeutic activities. These factors all contribute to patients remaining in stroke rehabilitation programs for extended periods of relatively low intensity rehabilitation, even though evidence derived from care in inpatient rehabilitation suggests that greater therapy intensity¹²⁻¹⁵ and facilitated discharge to the community¹⁶⁻²⁰ would improve outcomes and efficiencies.

Finally, program administration and the MOHLTC each struggle with similar challenges within the current system: the lack of meaningful measures for program evaluation and annual “siloed”, occupancy-based funding. With few measures that reflect actual overall program performance, most of the information used for evaluation is drawn from those patients admitted to rehabilitation. This process leads programs to focus only on the patients they admit and neglects patients who require rehabilitation but cannot access services. Making things worse, under the current “siloed”, occupancy-based remuneration system, programs receive funding based on previous occupancy; encouraging them to maintain full capacity at all times. Keeping relatively stable patients in care longer is the easiest way to ensure full occupancy and secure future funding, but is obviously inefficient. In the current system, the MOHLTC are unable to adequately assess rehabilitation efficiency and program administrators have little incentive to improve access.

Part II – The Vision

The Canadian Medical Association suggest a modernized version of the Canada Health Act that emphasizes patient-focused care¹. Our vision of a patient-focused system in stroke rehabilitation is one that encompasses three core principles: 1) a broader perspective for evaluation, 2) a patient-first approach to treatment provision, and 3) greater unity.

1. *Broader Perspective* – Current methods for program evaluation deal almost exclusively with those patients who are able to access inpatient rehabilitation services. A truly patient-focused system must address the needs of all stroke patients, starting with evaluation of patient needs, identifying patients who were not able to access the care they needed, and asking what can be done to meet those needs.

2. *Patient-First Approach* – Rehabilitation programs must be built on the principle that providing rehabilitation to the patient is the primary focus. Other responsibilities (meetings, training, documentation etc.) should not take precedence over the

provision of rehabilitation therapies and should only act to improve therapy quality.

3. *Greater Unity* – The system must be able to adapt to the needs of patients, not the other way around. Providing a diversity of services to patients is insufficient unless service providers are in regular contact with one another and patients are able to access the care they need seamlessly. Rehabilitation providers across the rehabilitation continuum must be encouraged to develop innovative ways to provide evidence-based care that meets patient needs.

Part III – The Framework for Transformation

We believe that in stroke rehabilitation, a patient-focused system can only be achieved through unified provision of care. Across the care continuum, the rehabilitation needs of patients who experience a stroke are so varied that they cannot be met by a single type of service. Therefore, inter-program collaboration is a necessity and must be promoted. It is our contention that this can only be achieved by removing incentives for inefficient care (“siloed”, occupancy-based funding) and promoting a system that incorporates a broader, patient-focused method for evaluation. If implemented properly, with the right incentives, this broader method for evaluation will naturally lead programs to find creative ways to improve system-wide efficiency.

The CMA recommend five pillars upon which to transform Canada’s healthcare system¹, each of which are pertinent to Ontario’s stroke rehabilitation system. Within these pillars they suggest a list of key enablers that must be in place. We believe that two of these enablers are the key to transformation in Ontario’s stroke rehabilitation system: health information technology and properly aligned incentives. These recommendations have been derived based on our direct observation of the current rehabilitation system in Ontario and evidence available at this time. It will be important to continue to explore issues and barriers in the system and to properly evaluate any and all policy changes to ensure they have the desired effect, if implemented.

Enabler #1 Health Information Technology (HIT)

The CMA recommendations suggest that health information technology be used to “monitor and evaluate organization and system performance” (p.7)¹. Through the efforts of the Canadian Institute for Health Information (CIHI) and the Canadian Stroke Network (CSN), many of the data collection strategies needed are already in place. This health information technology is important to informing our vision of a broader perspective for stroke rehabilitation in Ontario. We propose two modifications to current HIT to achieve our vision: 1) develop and collect a composite indicator that reflects patient outcomes and population-level efficiency, 2) incorporating appropriate peer groups for direct program-level comparisons.

Composite indicators for population-level efficiency

Assessing rehabilitation programs based entirely on the short-term outcomes of the patients admitted to these programs is too narrowly focused. These measures do not accurately reflect the ability of programs to serve their regional population or improve long-term patient outcomes. Ontario is divided into 14 Local

Health Integration Networks (LHIN) and rehabilitation programs are generally responsible for providing a specific form of rehabilitation (inpatient, outpatient, or community-based) to patients in a single LHIN (or a well-defined region within a LHIN). Therefore, LHINs and the stroke rehabilitation programs within them should be assessed on their ability to care for all regional patients who experience a stroke and require rehabilitation.

A composite indicator of population-level effectiveness should begin by compiling information about the proportion and characteristics of stroke patients not admitted to rehabilitation between regions; providing valuable information about regional accessibility to rehabilitation. Using data already routinely collected in Ontario, it is possible to develop statistical models to identify patients not admitted to rehabilitation whose characteristics are similar to those who were. Using these models it is possible to estimate how many of these patients might have received rehabilitation if they had lived in a different region. Higher numbers of possible candidates not being admitted would suggest poorer accessibility to rehabilitation in a given region and might indicate that it is not meeting patient needs. This method would provide valuable information to regional administration and the MOHLTC. Much of the information needed for this evaluation is already collected and similar methods have been applied elsewhere²⁵.

Regions must also be evaluated based on their ability to meet the long-term needs of patients who do receive rehabilitation. Random annual follow up should be conducted for a group of representative patients in each region who were admitted to rehabilitation. Information on lifespan, functional improvement, social integration, quality of life, and resource consumption (ie. acute visits, stroke recurrence, long-term care stays) would provide a broader perspective of how patients fare within a given region and could be adjusted for differences in patient characteristics. Meeting these data needs would require an extension of current data collection practices, but would likely reflect minimal costs compared to the opportunity for improvements in patient care and system-wide efficiency.

Appropriate peer group comparisons

With a standardized composite indicator in hand, more meaningful peer group comparisons could be drawn between regions and between the programs within them. Establishment of peer groups based on the size and type of program would allow for meaningful monthly and annual reports to be generated. Stroke rehabilitation programs could compare their accessibility and adjusted patient outcomes to similar programs and administrators and clinicians would have more meaningful information about where they need to make improvements. If based on appropriate outcomes, this information could help to promote a more patient-focused system.

Enabler #2 Promote Patient-Focused Care Through Incentives and Accountability

Rehabilitation is essentially a therapy delivery system. In line with the CMA's pillar of building accountability and responsibility at all levels, Ontario's stroke rehabilitation system requires appropriate incentives for efficient therapy provision and accountability for the care that is provided. These initiatives

must target individual clinicians as well as program administrators.

Clinicians

Provision of appropriately intense rehabilitation therapy must be the first priority of stroke rehabilitation. Clinicians and their respective colleges must begin by collectively developing benchmarks for therapy provision that reflect patient needs and the realities of the Canadian healthcare system. This process will not be easy but has been achieved in the United States where clinicians are held accountable for ensuring that patients receive a minimum of three hours of therapy every day during inpatient rehabilitation²⁶. Once established, the dose and duration of therapy could then be treated in the same way that they are in pharmaceutical administration. If an acute patient does not receive their medication according to prescription, checks in the system recognize the problem and the responsible clinicians are held accountable. A similar system needs to be implemented in stroke rehabilitation. Through this accountability, rehabilitation provision would receive higher priority and the system for rehabilitation provision would need to be reorganized accordingly.

Program Administration

In accordance with the CMA's recommendation of shifting public reporting from "shame and blame" to quality improvement, programs and their staff must be rewarded for providing efficient patient-focused care¹. If programs are provided appropriate comparative information and are evaluated on their ability to meet regional demand, this will naturally provide incentive to change. In line with the CMA recommendation, results should be made publicly available and programs that excel should be publicly recognized¹.

The CMA recommendations also suggest that more appropriate financial incentives, such as pay-for-performance, be put into place. Under this initiative, programs would be rewarded for achieving excellence. The MOHLTC and corresponding LHINs must begin by making a multi-year commitment to the annual budget for stroke rehabilitation with one important stipulation: funds saved through the provision of efficient patient-centered care will be retained by the program and must be re-invested in stroke rehabilitation. This will allow programs the opportunity and incentive to creatively coordinate a system of care without fear of losing funding. Coupled with performance evaluations that are based on regional accessibility and patient outcomes, programs will have incentive to promote more efficient care through coordination of inpatient, outpatient, and community-based services.

Once this multi-year commitment comes to an end, programs that have excelled in improving patient outcomes and their ability to meet patient demand must be publicly recognized and rewarded. Judging programs by their ability to *improve* patient outcomes is paramount, as demonstration of improved patient outcomes will indicate that there was indeed an opportunity to improve patient care. This will give credence to requests for increased stroke rehabilitation funding and will help inform the MOHLTC about the impact of investment. Once a program is no longer able to demonstrate improved outcomes, it can be assumed to have optimized patient care and their current budget

deemed appropriate. The strength of such a system is that it relieves many of the current constraints on rehabilitation programs, is based on patient-focused outcomes, and holds potential to inform budgetary decisions.

SUMMARY

The Canadian Medical Association has noted that Canada's healthcare system faces significant challenges, many of which are exemplified by Ontario's stroke rehabilitation system. These challenges reflect the actions of individuals in the system and the framework for transformation must therefore be tailored to target these individual stakeholders. Our vision for stroke rehabilitation in Ontario is a system built on a broader perspective, a patient-first approach, and greater unity. It is our contention that through application of the first two principles, regional rehabilitation providers will naturally be driven towards developing a more unified strategy. It is also our contention that this vision can be achieved through better use of health information technology, proper incentives, and greater accountability. With a global vision and a coordinated effort, Ontario's stroke rehabilitation system can lead the change in Canadian health care and serve as an example that a sustainable, patient-focused system is achievable.

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