



IMPROVING EFFICIENCY IN THE CANADIAN HEALTH CARE SYSTEM

Achieving value in health care systems is an important objective for all nations.¹ Health care systems in Canada and elsewhere are examining ways to address inefficiencies to make the system more cost-effective and sustainable while improving the quality, continuity, and comprehensiveness of care. This policy statement puts forth recommendations for system sustainability and improving quality of care. All system stakeholders including providers, funders and patients bear responsibility to ensure the health care system is as efficient as possible. Physician input is a necessary condition for meaningful system improvement and innovation.

1. Introduction

Health care systems in Canada and elsewhere are examining ways to address inefficiencies to make the system more cost-effective and sustainable while improving the quality, continuity, and comprehensiveness of care. The concept of efficiency in health care has two applications. The most common is technical efficiency, which is defined as producing maximum output for a given level of inputs, or minimizing input for a given level of output.² The difference between actual output and the maximum achievable output may be attributed to inefficiency within the system.

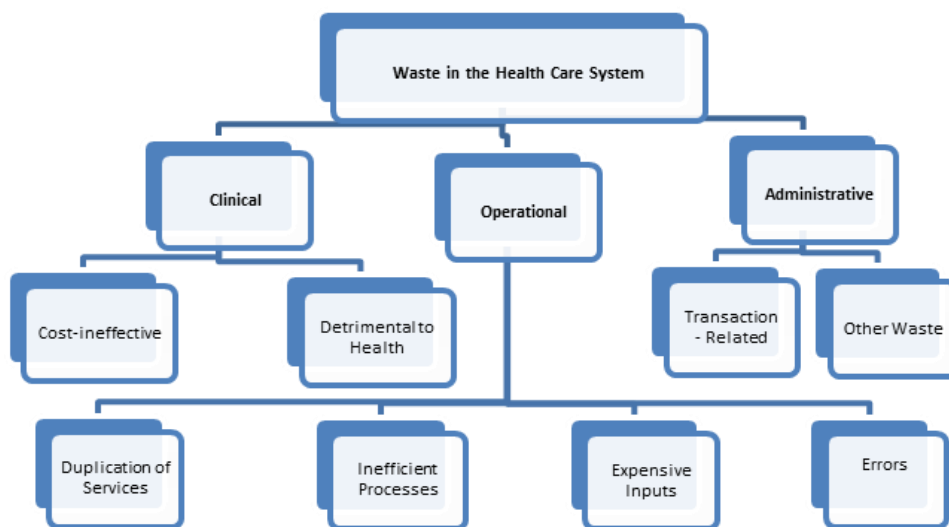
The second is called allocative efficiency, which refers to optimizing resource allocation to produce maximum outputs that fulfill societal demands. Canadian research suggests that increasing technical and allocative efficiency rather than increasing spending could solve some of the current challenges regarding health care quality and sustainability. Based on a macro system-level approach to estimating efficiency among its member countries, the Organization for Economic Cooperation and Development (OECD) has estimated that all of its member countries could achieve better value from their health care spending—Canada could save 2.5% of Gross Domestic Product in public spending by 2017 if it were to become as efficient as the most efficient OECD countries.³

2. Health care inefficiencies

The various inefficiencies in the Canadian health care system may be categorized and visualized using the conceptual framework developed by Bentley et al in 2008 for the U.S. health care system⁴ (see Figure 1). In Canada, no such framework exists.

The framework of Bentley et al contains three main categories of inefficiencies – clinical, operational, and administrative. Clinical inefficiencies relate to practice variation challenges including, the provision of inappropriate care. Operational inefficiencies include duplication of health care services, inefficient processes, overly expensive inputs, and errors in data collection and processing. Administrative inefficiencies may be generally thought of as excess transaction costs associated with claims payment and excess costs of administration and management over and above what is required to deliver front-line health care.

Figure 1. Typology of health care inefficiencies



Source: Adapted from Bentley et al, 2008.

2.1 *Clinical Inefficiencies*

Clinical waste and inefficiencies refer to services that provide marginal or no health benefit compared with less costly alternatives. This may include practice variation and the provision of inappropriate and cost-ineffective care, or the underuse of more appropriate care. There is overlap between clinical inefficiencies (e.g., providing the wrong service) with operational inefficiencies (the inefficient production of services).

The chief contributor to clinical inefficiencies or waste in the health care field is practice variation—the reduction of unwarranted care variation is the foundation of the quality movement. John Wennberg and colleagues have pioneered the main body of work in this area through their studies on small area variation in care delivery.⁵ Over the last quarter century, technical studies on clinical practice guidelines (CPGs) have been developed in increasing numbers to address issues of appropriateness of care and care variation.

CPGs are defined as “systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances”.⁶ CPGs should contribute to better health, enhance the quality of care by reducing practice variation, and contribute to better value and lower costs by encouraging more appropriate use of resources by care providers.⁷ Although there has been no systematic approach in Canada to developing and disseminating CPGs, or to ensuring the quality of the CPGs produced, various organizations have developed initiatives to tackle this issue.⁸

Since the early 1990s, the Canadian Medical Association (CMA) has developed and maintained a CPG Infobase, which contains roughly 1,200 guidelines.⁹ The uptake of CPGs is a crucial component and insufficient resources are applied to necessary clinical practice change processes. Moreover, CPGs should be distillable to actionable points-of-care recommendations suited to the intended end user (e.g., family physicians).

In January 2012, the Council of the Federation (CoF) established the Health Care Innovation Working Group, which comprises all provincial and territorial health ministers, to determine practical and innovative ways to increase the value and effectiveness of care.¹⁰ The group’s CPG recommendations focused on cardiovascular disease and diabetes – two of the most prevalent and highest-costing chronic diseases in Canada (see Appendix A for list of CPGs). In accordance with the CoF, the CMA recommends:

1. Developing chronic disease management and other supportive strategies for vulnerable patients at risk of frequent readmission to the acute care system.
2. Integrating clinical practice guidelines with electronic medical records.
3. Implementing a pan-Canadian clinical practice guidelines strategy.
4. Using evidence-informed clinical practice guidelines to evaluate patient outcomes, appropriateness, and cost-effectiveness.
5. Developing deployment strategies to ensure maximum use of clinical practice guidelines by physicians.

Clinical practice guidelines need regular updating as new evidence emerges. Therefore, a Pan-Canadian strategy should include a system of regular review and updating using development methods that would exclude the possibility of industry bias. Canada’s physicians are taking a leading role on this matter through such initiatives as Choosing Wisely Canada (see below).

2.1.1 Appropriateness

There is an increasing trend in health care utilization in areas such as medical procedures,

drugs, and physician services.¹¹ Questions remain about whether or not people are receiving care that is appropriate and based on the best available scientific information.¹² Inappropriate care, such as the hospitalization of patients who need community-based services or prescribing antibiotics for upper respiratory infections that are likely viral in origin, is another source of clinical inefficiency, using scarce resources for marginal or no health benefit.

The CMA recently defined appropriate care as the right care, provided by the right provider, to the right patient, in the right venue, at the right time:

- “right care” is based on evidence for effectiveness and efficacy in the clinical literature, and not only implies appropriateness of use, but inappropriateness of failure to use;
- “right provider” is based on ensuring the provider’s scope of practice adequately meets but does not far exceed the skills and knowledge to deliver the care;
- “right patient” acknowledges that care choices must be matched to individual patient characteristics and preferences;
- “right venue” emphasizes that some settings are better suited in terms of safety and efficiency to delivering a specific type of care than others;
- “right time” indicates care is delivered in a timely manner consistent with agreed upon bench marks.

As a corollary to this definition, if all five components are present, high quality care has been delivered with the optimal use of resources, that is, waste has been eliminated and the best value has been obtained.

Appropriateness is primarily determined by analyses of the evidence of clinical effectiveness, safety, and other health system impacts.¹³ The practical application of appropriateness is made when these analyses are qualified by (a) clinician judgment, particularly in atypical circumstances¹⁴ and (b) societal and ethical principles and values, including patient preferences.

There are a number of perverse incentives that can contribute to the delivery of inappropriate care across the system. These exist at the system level (e.g., patients staying in hospitals longer than needed due to the lack of community services), as well as at the individual encounter level (changes in fee codes for insured medical services such as new consult fees to see a patient every six months). Physicians and payers such as governments need to work together to eliminate perverse incentives based on available medical evidence. Physician incentives should align with system needs. The challenge is getting governments, health authorities and provincial and territorial medical associations, and individual providers agreeing on system goals and objectives.

In the U.S., an innovative appropriateness initiative called Choosing Wisely was established in 2011 with the goal of improving care quality and reducing harm to patients by avoiding unnecessary interventions, with the added benefit of possible cost reductions.¹⁵ The initiative challenged specialty societies to identify five clinical activities in their field that are generally of

little value or are potentially harmful to patients.¹⁶

In Canada, CMA's 2013 General Council called for the formation of a collaborative working group to develop specialty-specific lists of clinical tests/interventions and procedures for which benefits have generally not been shown to exceed the risks. Choosing Wisely Canada was launched on April 2, 2014 with the release of eight lists produced by nine specialty societies (one list was released jointly by the CMA's Forum on General and Family Practice Issues (GP Forum) and the College of Family Physicians of Canada (CFPC)). Twelve additional medical specialty societies released lists in October 2014. The Choosing Wisely Canada campaign is endorsed and supported by over 35 national specialty societies representing a broad spectrum of physicians, as well as by all provincial medical associations, patient organizations, accrediting bodies and others (Website: www.choosingwiselycanada.org). Choosing Wisely Canada aims to promote physician-patient communication about unproductive care and conserve resources by eliminating unneeded activities. This initiative also serves as an example of the role of public education campaigns to help improve appropriate care.

The development of a Canadian version of the Choosing Wisely initiative assists in operationalizing the Institute for Healthcare Improvement's (IHI) Triple Aim concept of better care, better health, better value. Specific benefits include:

- Improving accountability by providing transparent, evidence-informed care;
- Facilitating patients to make the right care decisions;
- Enhancing physician-patient relationships: improve communication and decision-making between patients and their physician; and
- Reducing clinical inefficiencies.

The ultimate objective and impetus for adopting a Choosing Wisely initiative must be to improve patient outcomes. Cost savings to the system should occur as a byproduct. Physicians are in the best position to identify which medical services are unnecessary.

Both patients and providers need to be aware of the costs associated with each treatment option, recognizing there is a balance to strike between cost and value. To facilitate this process, the CMA recommends:

6. Making available data on the cost and cost-effectiveness of treatment options at the point of care.
7. Collecting information to evaluate cost-effective care.
8. Posting costs generated by requests for diagnostic and laboratory tests in electronic medical records.

Evaluation should take place to ensure the posting of costs is targeted to areas where it will be most effective.

2.2 Operational inefficiencies

Examples of operational waste include: undertaking tests or procedures more frequently than clinically necessary (e.g., duplication of tests); unnecessary time spent waiting for medical services or time wasted from processes that add little value; using brand drugs for patients who get equal benefit from generics; and health and cost consequences of medical errors or the use of defective medical devices.

These system inefficiencies can amount to very significant costs to the health care system, patients and the economy. For instance, lengthy waits can have serious health consequences for patient outcomes and result in the substitution of additional health care services while waiting (e.g., use of pain medication). A 2008 study calculated the economic impact of excessive wait times for five procedures (hip and knee replacement surgery, MRIs, CABG surgery and cataract surgery) in all 10 provinces. It found that, in addition to the obvious emotional, physical and financial toll endured by patients and their families, lengthy waits for these medical treatments cost Canada's economy an estimated \$14.8 billion overall in 2007 in reduced economic activity by patients (\$16.9 billion in 2014 dollars). This included a \$4.4 billion reduction in federal and provincial government revenues.¹⁷

Notwithstanding a shortage in health care infrastructure, there is general consensus that not all hospital infrastructure is used to its fullest capacity, contributing to lengthy wait times for many patients. This can include excessive turnover time between cases or limited operating room hours that can result in the last patient of the day being unable to receive their surgery at great cost to the patient and their family. In many instances, urban hospitals must cancel surgeries due to overbooked operating room time when in smaller and rural communities, operating rooms are not fully utilized. Strategies should be explored to enable greater use of health infrastructure resources in smaller community hospitals that will serve to enhance timely access to care for patients. This would also ensure that staff had a level of activity that would maintain their skills.

There has been significant uptake of operations research and quality improvement processes to help eliminate operational waste and address unnecessary waiting by patients. To this end, CMA will continue to work with its partners in the Wait Time Alliance to identify strategies to improve timely access to care for patients across the continuum. The CMA will also study the potential health applications of the Theory of Constraints within the Canadian health care system.¹⁸

There can also be system-wide inefficiencies in the various health systems operating in the country and in terms of how health systems interact with other systems such as economic and social support systems (e.g., lack of services to address homelessness). Changes in one component of the health care system can negatively affect the efficiency in another component. For instance, cuts made to home care services can lead to a rise in the number of alternate-level-of care (ALC) patients in hospitals, increased wait times in emergency departments, and elective surgery cancellations. A more recent source of system inefficiency has been occurring due to the piecemeal adoption of electronic medical records and information systems (EMR)

throughout the country. The multitude of systems adopted by different segments of the health care system has resulted in problems with system inter-operability that often exacerbate administrative and clinical inefficiencies such as preventing the electronic attachment of test results leading to the reordering of tests.

The Canadian Institute for Health Information (CIHI) developed a model to measure and evaluate “health system efficiency” within Canada. It measures the average efficiency of health systems in Canada’s health regions and the factors that help explain variations in estimates of system efficiency (measured as the reduction in potential years of life lost (PYLL) from treatable causes of death). The study found that equitable access to physician care is positively associated with efficiency.¹⁹ Unfortunately, over 4 million Canadians still do not have a regular family physician.²⁰

In addition, the CIHI study found that factors related to the social determinants of health can also affect system efficiency (e.g., missed prevention opportunities). Frequently, the health care system is relied on to address preventable health needs that are attributable to the social determinants of health (e.g., injuries or illnesses caused by lack of affordable housing or poverty). Furthermore, these factors can negatively affect the effectiveness of any treatment provided by the health care system.²¹

Governments and health administrators should focus on improving efficiencies where there is the highest volume of services as new models of efficiency do not always show results in low volume areas.

2.3 Administrative inefficiencies

Health programs can be funded and administered at a variety of levels: local, regional, provincial and federal, as well as through employers. According to CIHI, administration accounted for \$6.3 billion, or 3.1%, of health care costs in Canada in 2011—roughly middle of the pack among OECD countries²²—but this is only the cost of providing public and private health insurance programs and the costs associated with health departments’ operations.¹¹ Generally, differences in the level of health administration can be explained in part by the type of health system and financing used such as whether multiple insurance providers exist or the extent that complex funding and billing procedures are in place.^{23 1}

In terms of other administrative costs, we do not know how Canada has evolved over time in comparison to other sectors of the economy or how we compare internationally with respect to the effectiveness of administration expenditures.¹ There have been questions about the expansion and contraction of regional health authorities in Canada over the past two decades. However, Canada does not have a detailed set of health accounts that would permit such analysis. CIHI has recently begun to report the percentage of administrative services expenses (general administration, finances, human resources and communications) as a percentage of total expenses for over 600 hospitals as part of its Canadian Hospital Reporting Project (CHRP).²⁴

One source of administrative waste is the cost of duplicate collection and recording of health information. The health sector has been slow in adopting health information technology to help reduce this form of administrative waste.

Another cause of inefficiency is the increase in administrative burden faced by Canadian physicians and their patients. A major contributor is the rise in requests for physicians to complete third party forms from insurance companies and governments (see Appendix B for a list of examples of federal health programs and related medical forms). Different definitions of concepts are frequently used in these forms, but in many instances they are asking for similar information about the same patient. Physicians are also frequently requested to complete sick notes—the CMA believes such an absence does not require physician confirmation of illness and represents an inefficient use of scarce health care resources.²⁵

The cumulative effect of a physician being requested to complete several forms each day can result in significant administrative burden and take away time that physicians can spend providing direct patient care. Standardizing definitions and wording on third-party forms can save time and reduce administrative errors. Physicians fully support any efforts by the private insurance industry and governments to standardize their medical forms. In addition, consideration should be given to instances where other designated providers can be tasked with completing particular forms. Where suitable, electronic medical records (EMRs) can improve the completion and timely submission of third-party forms to the benefit of patients, providers and third-parties.

To address these administrative inefficiencies, the following actions have been recommended by CMA:

9. Federal and provincial auditors general design and implement a protocol for detailed enumeration of administrative costs within their health care systems, including tracking of these costs over time, and issue an annual public report.
10. CIHI conduct a detailed study of administrative costs of Canadian hospitals and regional health authorities and report the findings.
11. Harmonize and centralize, in electronic and written format, all administrative forms that physicians must fill out on behalf of their patients.

3. Innovating for efficiency

Since the late 1990s, the federal, provincial, and territorial governments, and other granting bodies have provided considerable funding for applied health services research to aid the implementation of pilot projects to improve the quality of care delivered in Canada. However, Canada is frequently criticized for its inability to move beyond pilot projects to full implementation. One often-cited reason is the lack of communication about promising innovations from one jurisdiction to another. Other reasons include regulatory barriers such as funding silos, and pilot project funding for a limited duration to prevent meaningful outcome evaluation. Physician input is a necessary condition for meaningful and sustained system innovation.²⁶

The CMA supports:

12. Developing and testing innovative structures or programs to demonstrate clear evidence of improvement in health care outcomes and fiscal sustainability before wide-spread adoption into the Canadian health delivery system.
13. Developing policy tools that provide criteria for identifying barriers to quality, efficiency and equity in emerging models of health care delivery.
14. Creating a registry of physician-managed health care transformation projects. This registry should outline the challenges and lessons learned associated with each project for those interested in adopting similar projects.

4. Conclusion

Addressing efficiency challenges in the Canadian health care system can improve the quality, continuity, and comprehensiveness of care, while making the system more cost-effective and sustainable. Many components of the health care inefficiencies set out by Bentley et al are now being considered by governments. Physician input is a necessary condition for meaningful system improvement and innovation. Physicians should practice high quality, evidence-informed health care, and advocate for cost-effective allocation of scarce resources. Canada's physicians are taking a leading role on this matter through such initiatives as Choosing Wisely Canada.

**Clinical Practice Guidelines (CPGs) recommended by
The Health Care Innovation Working Group of the Council of the Federation**

The group recommended each province and territory work with their health authorities to adopt the following CPGs:

- The C-CHANGE guidelines for cardiovascular disease published by the Canadian Cardiovascular Harmonization of National Guidelines Endeavour (C-CHANGE) to reduce guideline variations and confusion among care providers.
- Harmonized guidelines for diagnosis, which include:
 - Laboratory testing (e.g., urine analysis, ECGs)
 - Risk stratification strategies (e.g., family history, lifestyle choices, and diabetic patients).
- Harmonized guidelines for treatment, which include:
 - Establishing treatment targets (e.g., limiting alcohol consumption, healthy body weight, glycemic or glucose targets)
 - Health behavior interventions (e.g., balanced heart healthy diet, limiting salt intake, smoking cessation)
 - Pharmacological therapy (e.g., assessment of drug and drug interactions, co-morbidities).

Appendix B
**Examples of federal health programs and related medical forms
physicians are frequently requested to complete**

- Canada Pension Plan Disability
- Disability Tax Credit
- Employment Insurance (Sickness Benefits Claim)
- Non-Insured Health Benefits (for First Nations people and Inuit)
- Veterans Disability Pension
- Compassionate Care Leave
- Exception/Limited Use Drug Request Form (to permit access to drugs not on provincial formularies)
- Interim Federal Health Program
- Canadian Adverse Drug Reaction Monitoring forms

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