



Anne Silber. *In Burgundy: Misty Morning*. Serigraph, © 1988.  
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*A "performance improvement cycle"  
has been shown to improve  
cancer care outcomes in Ontario.*

## Creating a System for Performance Improvement in Cancer Care: Cancer Care Ontario's Clinical Governance Framework

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**Background:** Good governance, clinician engagement, and clear accountabilities for achieving specific outcomes are crucial components for improving the quality of care at both an organizational and health system level.

**Methods:** This article describes the benefits and results reported by Cancer Care Ontario (CCO) in transforming from a direct provider of cancer services to an organization whose responsibilities include improving the quality of care across the province's cancer system. The significant challenges in establishing accountability in the absence of direct operational authority are discussed. Case examples illustrate how the structures and processes created through CCO's clinical governance framework achieved measurable improvements in cancer care outcomes.

**Results:** Challenges in establishing accountability were addressed through the creation of a clinical governance framework that integrated clinical accountability with administrative accountability in an ongoing performance improvement cycle. The performance improvement cycle includes four key steps: (1) the collection of system-level performance data and the development of quality indicators, (2) the synthesis of data, evidence, and expert opinion into clear clinical and organizational guidance, (3) knowledge transfer through a coordinated program of clinician engagement, and (4) a comprehensive system of performance management through the use of contractual agreements, financial incentives, and public reporting.

**Conclusions:** CCO has succeeded in developing a clinical governance and performance improvement system that measures and improves access to care in the treatment phase of the care continuum. Future efforts will need to focus on expanding quality improvement initiatives to all phases of cancer care, measuring the appropriateness of care, and improving the measurement and management of the patient cancer care experience.

### Introduction

In 2003, cancer services in Ontario faced serious challenges.<sup>1</sup> Wait times for access to radiation therapy were too long, with Ontario residents often traveling to the

United States for care. Information about the quality of cancer care was limited and focused primarily on radiation therapy to the exclusion of other treatment modalities.<sup>2</sup> The limited data available suggested fragmented patient care and regional variability in quality and access.

In response to these challenges, the Ontario government restructured the cancer system. As part of this restructuring, the mandate of Cancer Care Ontario (CCO), the province's lead cancer agency, changed from being a direct provider of cancer services to a purchaser of services and manager of system quality. With this restructuring, CCO was faced with the challenge of driving accountability and quality improvement in the cancer system in the absence of direct operational authority.<sup>3</sup> The challenge was addressed through the creation of

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a clinical governance framework that integrated clinical accountability with administrative accountability in an ongoing performance improvement cycle. In this article, we describe the structures and processes created through CCO's clinical governance framework and illustrate how the use of this framework led to measurable improvements in cancer care outcomes.

### The Organization of Cancer Services in Ontario

CCO is the provincial government agency responsible for continually improving cancer services by driving quality, accountability, and innovation.<sup>4</sup> As the government's principal cancer advisor, CCO works with its partners — cancer care professionals and organizations — to reduce the number of people diagnosed with cancer and to ensure that patients receive the best possible care across the continuum of cancer care. It oversees the allocation of just under CaD \$700 million annually to hospitals and other cancer care providers to deliver high-quality, timely cancer services and prevention and screening programs.

The delivery of cancer services in Ontario is organized into 14 regional cancer programs (RCPs) — networks of providers and institutions that deliver cancer prevention, screening, diagnostic and treatment services, and supportive care within a defined geographic area. Each RCP has a regional cancer center, usually located within a large hospital, that helps organize care within the region and handles the most complicated cases. Each RCP is led by a regional vice president (RVP) with dual accountability — to CCO and to his or her host hospital CEO. The RVPs are the executive leads for both the RCP and the regional cancer center, located in their specific region. The RVPs work with health services providers and administrators as well as with patient and community groups in a regional network that implements and manages improvements to cancer services throughout Ontario. The RVPs hold clear accountability for cancer system performance in their region.

### CCO's Clinical Governance Model

The quality improvement literature has identified that successful health systems capable of high-quality performance and continuous quality improvement develop a clear system strategy, tie quality improvement initiatives specifically to the strategy, and identify clear accountabilities for implementation.<sup>5</sup> At CCO, the strategy is articulated through the 3-year Ontario Cancer Plan (OCP), and the implementation process and accompanying accountabilities are specified through the CCO's clinical governance model where quality and evidence-based decision making are the central goal and the driving force of the cancer system. Building on early clinical governance initiatives of the United Kingdom's National Health System reform,<sup>6,7</sup> CCO created a system where *clinical accountability* for treatment decisions is integrated with *administrative accountability* for performance, quality and cost control and *public accountability* for performance,<sup>8</sup> where in this instance,

“clinical accountability” refers to the clinical responsibility for providing safe and effective care to patients or groups of patients, “administrative accountability” refers to the responsibility for ensuring the effectiveness and efficiency of health care delivery before health system governors, and “public accountability” refers to the responsibility to the taxpaying (or premium-paying) public for the overall quality and performance of the health care system they finance.<sup>9</sup> The clinical governance model was implemented at the time of CCO transition by setting up new governance structures and the performance improvement cycle through which they work. This allowed CCO to meet the challenge of ensuring high-quality cancer care without direct operational control over the system. The strategy, structures, and processes of the clinical governance model are described below.

### Strategy

Every 3 years, CCO leads the development of the OCP — coordinating input from clinical and administrative leads and supporting decision making through data and modeling activities. The OCP is a jurisdiction-wide cancer control plan that sets out a comprehensive 3-year strategy for action, with annual updates that publicly report progress against measurable targets for each stated goal. It is based on an analysis of quantitative and qualitative data regarding the state of the Ontario cancer system, emphasizing its pressures and opportunities, and sets programmatic priorities with explicit performance targets to address gaps. The current OCP sets out six overall system goals around which planning and prioritization occurs for Ontario cancer system initiatives.<sup>10</sup>

### Structures

CCO's clinical governance model is implemented in practice through three key governance structures, each with its core set of accountabilities.

**The Clinical Council:** Clinical accountability for the safety and effectiveness of cancer care is the primary responsibility of CCO's Clinical Council, which brings together clinical leadership from each phase of the cancer care continuum to set clinical policies and quality improvement priorities for the Ontario cancer system. It does this by identifying quality gaps, setting annual performance targets, developing performance indicators, monitoring and reviewing performance data, and developing quality improvement strategies. The Council is composed of the Provincial Clinical Leads of 11 clinical areas covering the stages of the cancer care continuum (prevention, screening, imaging, lab medicine, family medicine, surgery, systemic therapy, radiotherapy, nursing and psychosocial care, palliative care, and patient education), the Director of the Program in Evidence-Based Care (PEBC), and the Chairs of 10 disease site groups (breast, gastrointestinal, genitourinary, gynecology, head and neck, hematology, lung, melanoma, neuro-oncology, and sarcoma cancer disease site groups).

**The Provincial Leadership Council (PLC):** Administrative accountability for regional cancer system performance lies with the PLC. The PLC is composed of the 14 cancer system RVPs and the CCO Executive Team. Its responsibilities include implementing the OCP in the regions, participating in structured regional performance reviews to identify performance gaps, recommending actions to address these gaps, fostering alignment between community, regional, and provincial cancer services, and developing plans for new programs, policies, or innovations that will help move the quality agenda forward.

**The Cancer Quality Council of Ontario (CQCO):** The CQCO is an arms-length body responsible for monitoring system-level quality and stimulating quality improvement across the cancer continuum through annual

public reporting on the performance of the cancer system and special studies on priority aspects of quality. The Council works in partnership with CCO to identify and assess gaps in cancer system performance and quality, and it provides policy advice to inform CCO's planning and strategic quality improvement priorities. For example, one of CQCO's first projects in collaboration with the provincial clinical leads was the publication of a benchmark report documenting the strengths, weaknesses, and data gaps in the cancer system and making recommendations to CCO about priority actions.<sup>11</sup> Fig 1 illustrates the interaction and responsibilities of each.

**Processes**

With the three governance structures in place, a series of interrelated processes were developed to create an

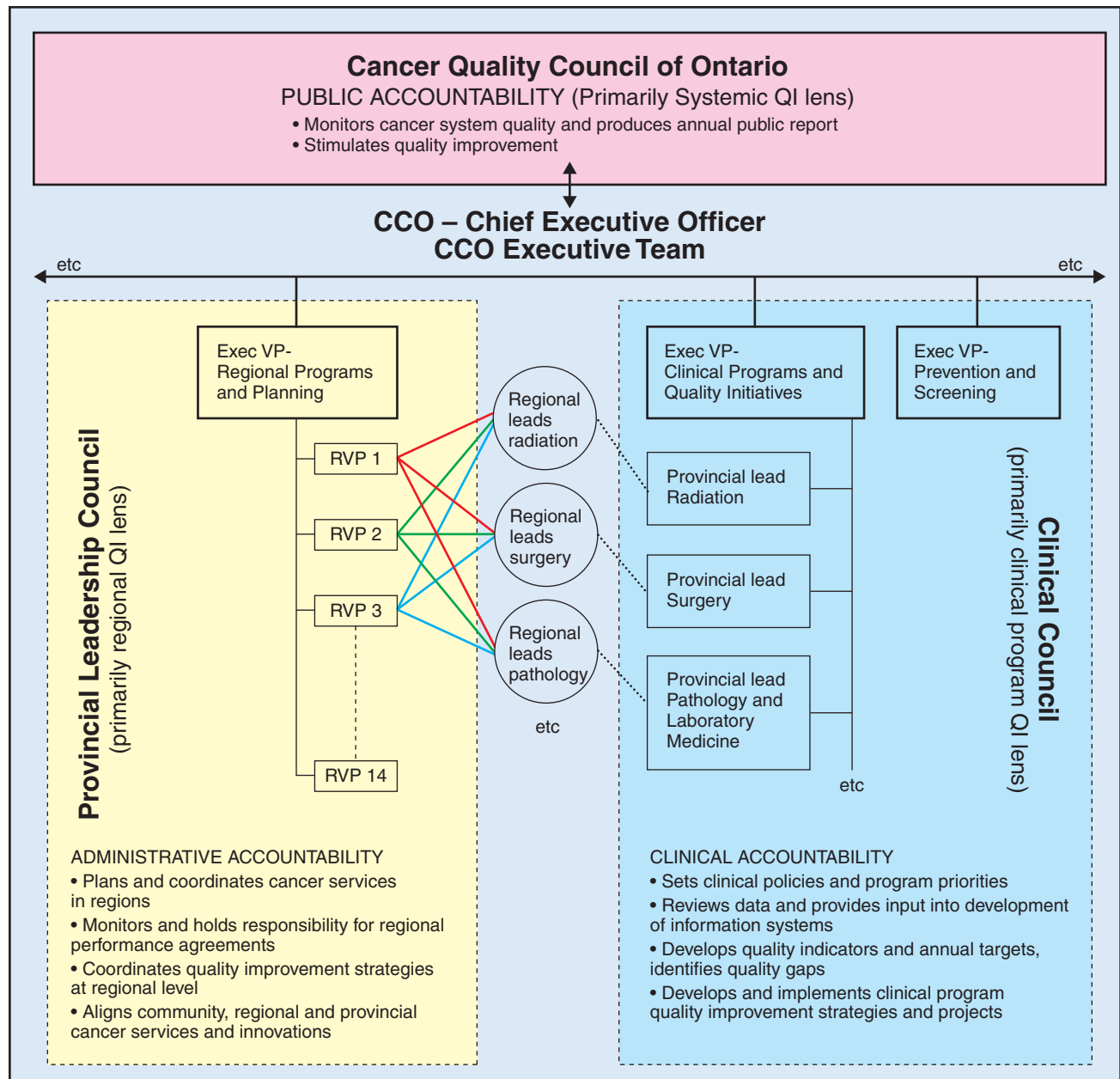


Fig 1. — Cancer care clinical and administrative accountability structures.

ongoing, coordinated system of quality improvement. These processes form the performance improvement cycle, a model that describes CCO's quality improvement work in a continuous iterative approach that includes four key steps discussed below.

Step 1 involves the collection of data and development of quality indicators that illustrate the current state of the system. To create a culture of continuous quality improvement and evidence-based decision making, CCO needed to make performance information readily available to clinicians and regional and provincial leaders. Thus, the collection of high-quality, timely, and easily accessible data became CCO's top priority. At the time of transition in 2003, CCO held little or no information on diagnostics or end-of-life care, only self-reported data on cervical and colorectal cancer screening, and less than half of the data on systemic therapy in the province. Stage information was also not routinely reported. Since 2003, as the foundation of all other quality improvement activity, CCO has focused tremendous efforts on continuously expanding its data stores to capture a greater breadth and depth of information about the quality of cancer services throughout the continuum of care. Most recently, the top priority has been on the capture of stage information province-wide, first from the regional cancer centers, and now from all Ontario hospitals. Data collection and information system development efforts have led to a significant increase in population stage capture from 30% in 2005 to the current rate of 68%.<sup>12</sup>

Clinical performance is monitored through the regular collection of quality indicators. Through regular reviews of current performance, the Provincial Clinical Leads, together with their regional counterparts, identify quality gaps and develop quality improvement projects to address them. Indicators (both process and outcome) are identified at the same time to evaluate progress against stated goals and performance targets of the quality improvement projects. This is a joint responsibility of CCO's Cancer Informatics department, the Clinical Council, and academic partners/researchers who are actively involved in the study and improvement of clinical practice.

The gathering of clinical data to populate quality indicators occurs in the regions. As part of their contractual agreements with CCO, each of the 14 regional cancer centers and, increasingly, their affiliated community hospitals are required to submit data through their information and clinical systems. To support high-quality data collection (accurate, timely, and reliable information), CCO developed a data dictionary (called DataBook) that articulates common data definitions and standards for the cancer system and ensures consistency in data submitted to CCO. Once submitted, CCO uses its data warehouse to enable linkages of CCO data, including the Ontario Cancer Registry, with other provincial and national administrative data sets to populate indicators for analysis in support of both planning and quality improvement (eg, linking hospital and

physician billing data with CCO's Activity Level Reporting and stage databases to determine guideline concordance for the treatment of colon cancer). To enhance the utility of CCO's data stores, CCO has also focused, as a priority, on the development of an extensive business intelligence system to allow for timely and user-friendly access to CCO's data. One important piece of this system is IPort<sup>TM</sup> — a Web-based analytic tool that offers users access to a host of information within the data warehouse and allows them to build customized reports to meet their analytic and planning needs. It also provides access to a series of preprogrammed analytic reports dealing with some of the more common uses of the data. These reports are used by CCO and its partners (eg, the regions, clinical program leads and committees, clinicians) for planning purposes or the regular monitoring and review of performance. IPort is available to all registered users.

The timeliness and completeness of required data submissions are reviewed on a regular basis through the PLC and remedial steps are taken, as necessary, in collaboration with the RVPs. The success of CCO's data collection initiatives has been the result of the ongoing collaboration between Informatics and the provincial and regional users that need the data to fulfill their performance improvement responsibilities. Linking data submissions to financial incentives and contractual agreements adds additional support to these endeavors.

Step 2 involves the synthesis of data, evidence, and expert opinion into knowledge, supported throughout by active clinician engagement. A critical component of establishing CCO's quality improvement culture is the development of a solid evidence base for clinical decision making. This is accomplished through the development and dissemination of practice guidelines and organizational standards with a priority placed on knowledge generation within the priorities identified in the OCP. Clinical practice guidelines and organizational standards are empirically based and developed through expert reviews coordinated by the academics/scientists of the PEBC. The PEBC is an academically based program whose mandate is to improve the quality of cancer care by helping apply the best scientific evidence in clinical practice and decisions.<sup>13</sup> For CCO, adherence to clinical practice guidelines and facility standards is binding as articulated through regional contractual agreements. Uptake of clinical practice guidelines and facility standards is monitored and reviewed on a regular basis using the quality of care indicators outlined above.

One of the most important prerequisites of successful adoption of best practice is clinical buy-in and leadership. CCO clinical leads are involved throughout all phases of the knowledge creation process: they provide input into the priorities of the OCP and its targets and are involved in the implementation of quality improvement initiatives coming out of it. CCO clinical leads at the provincial and regional levels, as well as disease site groups, initiate the guideline development process by identifying areas of need based on regional

performance variability or quality gaps and ensuring coverage across disease sites and the phases of the cancer continuum. Clinical expert panels including disease site heads and clinician experts from the field review existing evidence from the literature and synthesize it into statements about best practice. Once developed, the guidelines and standards are reviewed using a rigorous practitioner “feedback loop” to ensure the relevance and utility of the guidelines for clinical practice. After this careful multistep review, the guidelines are published for uptake into practice. All guidelines and standards, as well as the methods used for their development, are posted publicly and available on-line. This transparency of the guideline/standard development process and its ultimate conclusions helps ensure buy-in in the regions and assists in successful implementation. As of 2009, more than 230 evidence-based reports were produced. Traditionally, the production of guidelines and standards has focused on cancer treatment (85% of the total), but in recent years, the greatest rate of growth has been in the diagnostic and end-of-life phases of the cancer journey.<sup>14</sup>

Step 3 involves knowledge transfer through a coordinated program of clinician engagement. The dissemination and uptake of best practice occur through formal and informal means. The formal structures include the PEBC, disease site groups, and program-focused provincial committees (eg, the systemic therapy program committee that brings together heads of medical oncology from each cancer center). These are used to foster two-way communication with clinicians in the regions and develop champions for quality improvement. More informal mechanisms to engage clinicians include communities of practice (COPs) and targeted educational initiatives such as clinical mentoring, academic detailing, or rounds. As clinician buy-in is a prerequisite for successful implementation of best practice, these informal support mechanisms are critical in assuring successful quality improvement. The governance/accountability structure also plays a critical role. Provincial clinical program heads, regional clinical leads, and provincial program committees play a dual role within the cancer system: (1) a provincial role where they participate in the development of provincial standards, guidelines, indicators, and/or knowledge brokering strategies and (2) a regional role in championing best practice with their peers. These dual roles allow for continuous feedback on challenges and successes and create a culture of open communication and trust. Quality improvement at the front lines becomes easier because it is not implemented in a top-down manner but is addressed collaboratively using established governance structures created for this purpose.

Step 4 involves a comprehensive system of performance management. As the performance improvement cycle moves from problem identification and strategy development to the direct implementation of improvement projects and system change, the locus of responsibility of the performance improvement cycle shifts

from the Clinical Council to the PLC. The PLC ensures regional accountability for service volumes and quality through the use of a comprehensive package of policy levers, including contractual accountability agreements, financial incentives, pay for performance, performance reviews, and public reporting.

As a condition of funding, each regional cancer center has entered into a legally binding contract, called the Cancer Program Integration Agreement, with the provincial Ministry of Health and Long-Term Care and with CCO. These accountability agreements require the implementation of provincial standards and programs for cancer care, timely data submissions, and accountability for meeting annual performance targets. Regional leaders are expected to use performance data to identify gaps in quality of care and develop plans of action to address them. Quarterly reviews of performance data (described below) are used to monitor adherence to the agreements.

Funding levers are also used as part of the comprehensive approach to performance management. Funding is linked to quality of care through formal funding agreements between CCO and Ontario hospitals providing care (including, but not limited to the regional cancer centers). The most important of these are agreements for incremental funding increases from the Ministry of Health and Long-Term Care to address wait times for cancer surgery, systemic therapy, and colonoscopy. CCO has been able to leverage the wait times funding increases to not only improve access, but also require adherence with data reporting and quality standards from all participating hospitals as a condition of funding.

The formal performance review process takes place through quarterly reviews with each RCP. Each RVP is accountable for his or her region’s meeting set performance targets and is required to speak candidly about quality challenges in the region and develop explicit plans for addressing them that include regional partners. During the quarterly reviews, problems with data quality or reporting are identified and solutions discussed. In between the quarterly performance review meetings, CCO compiles a monthly scorecard that assesses regional performance against agreed-upon targets for all priority programs. The scorecard grades performance for each region relative to its targets in each area (ie, meeting target [yellow], above target [green], or below target [red]), and then ranks the overall performance of each region relative to all others. This scorecard is used as a key performance tool for the Board and Executive Team and within each region. Although designed as an internal performance report, RVPs are expected to share the scorecard information and performance data from the quarterly reviews with their regional cancer program partners to stimulate discussion and action on quality improvement. The combined process of quarterly reviews plus review of monthly scorecards allows CCO and the regions to constantly monitor performance and react to issues and problems on an almost real-time basis.

In addition to the internal scorecards and quarterly reviews, the public reporting of regional performance has consistently been one of the most important levers for performance management and quality improvement in Ontario. This is done through the Quality Council's Cancer System Quality Index (CSQI). The CSQI is a Web-based public reporting tool that highlights cancer system performance across 30 evidence-based measures spanning the cancer continuum from prevention to end-of-life care.<sup>15</sup> Through regional and time-trend analyses, the CSQI tracks Ontario's progress against provincial targets established by the Clinical Council and the PLC. Because the CSQI includes Clinical Leads and RVPs in indicator selection and reports publicly only on indicators that have been used internally for a number of years, it succeeds in motivating change by shining a light on quality gaps and creating an atmosphere of health competition. The Index is also useful in pointing out measurement gaps and feeding back into the Clinical Council indicator development process. For example, although the CCO can monitor the quality of cancer treatment, little is known about the quality of supportive and follow-up care provided to patients after they complete active treatment. This is an area planned for future indicator development and program implementation in the coming year.

### Putting It All Together: Examples From the Work of CCO

The steps of the performance improvement cycle are not implemented in a linear, step-by-step fashion, but rather occur continuously with various parts of CCO focusing on the different pieces in a coordinated fashion. The following examples illustrate the implementation of the performance improvement cycle in practice, with each highlighting the strengths of different quality improvement levers in measurably improving outcomes of cancer care.

### Improving the Quality of Colorectal Cancer Treatment: The Power of Clinical Engagement

**Step 1 (data):** Between 2004 and 2006, CCO initiated an intensive quality improvement project to increase adherence to the evidence-based provincial guideline for treating colorectal cancer. At this time, the Surgical Oncology Program (SOP) was increasingly engaged in building a culture of quality improvement. Andy Smith, MD, one of its early lead oncologists working at a regional cancer center, undertook an audit of pathology reports for several Ontario hospitals to monitor compliance with medical evidence linking improved cancer survival with the number of lymph nodes removed and sent for biopsy.<sup>16</sup> The results of the audit indicated extensive variability in practice as well as a general tendency in study hospitals to biopsy too few lymph nodes.

**Step 2 (knowledge):** Using this data, the SOP was able to capitalize on an individual research project to initiate an extensive quality improvement initiative. The PEBC published a clinical practice guideline for appropriate surgical treatment of colorectal cancer confirming that a minimum of 12 lymph nodes should be removed and examined to adequately stage colon and rectal cancer.<sup>17</sup> Concurrently, CCO built and implemented the Pathology Information Management System to allow for the regular collection and review of pathology data on an ongoing basis.

**Steps 3 and 4 (knowledge transfer and performance management):** The SOP Community of Practice identified both surgical and pathology clinical champions in each region to assess local challenges, lead ongoing discussions, and implement practice change. Regional leads were supported by Dr Smith and the Provincial Surgical Lead who worked throughout the province engaging hospital administrators, surgeons, and pathologists, implementing the practice

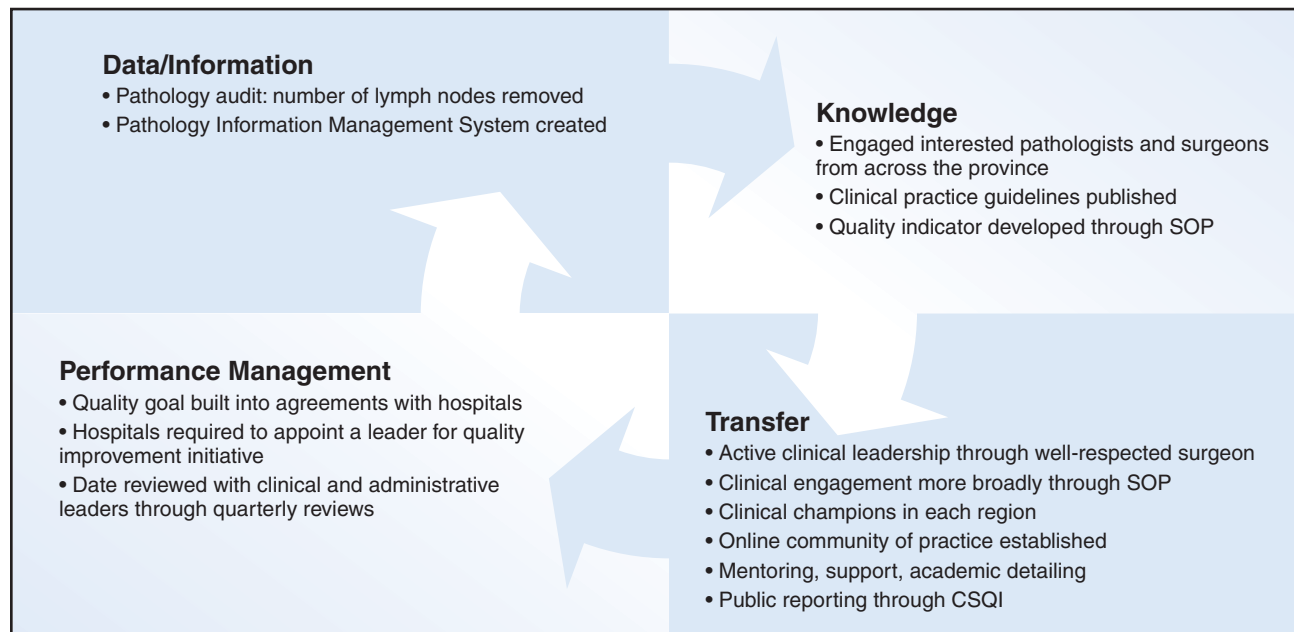


Fig 2. — Performance Improvement Model: quality improvement in colorectal cancer.

guideline, and championing practice change. The public reporting of results through the CSQI added an additional stimulus to quality improvement. Over time and with growing clinical support, the lymph node quality indicator was successfully incorporated into hospital performance agreements and regular performance reviews. Fig 2 illustrates the implementation of these steps as part of the performance improvement cycle.

As a result of the commitment and support of clinical leaders, guideline adherence rates increased from 60% in 2004 to 77% in 2006. Since 2008, with all regions reporting virtually 100% compliance, the colorectal quality work has turned its focus to analyzing rates of positive margins during colorectal surgery (Fig 3). The SOP credits the success of the project to the individual leadership of Dr. Smith and the Surgical Oncology leads, as well as the multidisciplinary nature of the improvement teams (including hospital administrators, surgeons and pathologists — groups that normally do not participate in joint projects).

#### **Managing Surgical Wait Times: Leveraging the Power of Financial Incentives**

**Step 1 (data):** One of the highest priorities in Canada in the past 5 years has been improving access to care in response to unacceptable waits for a number

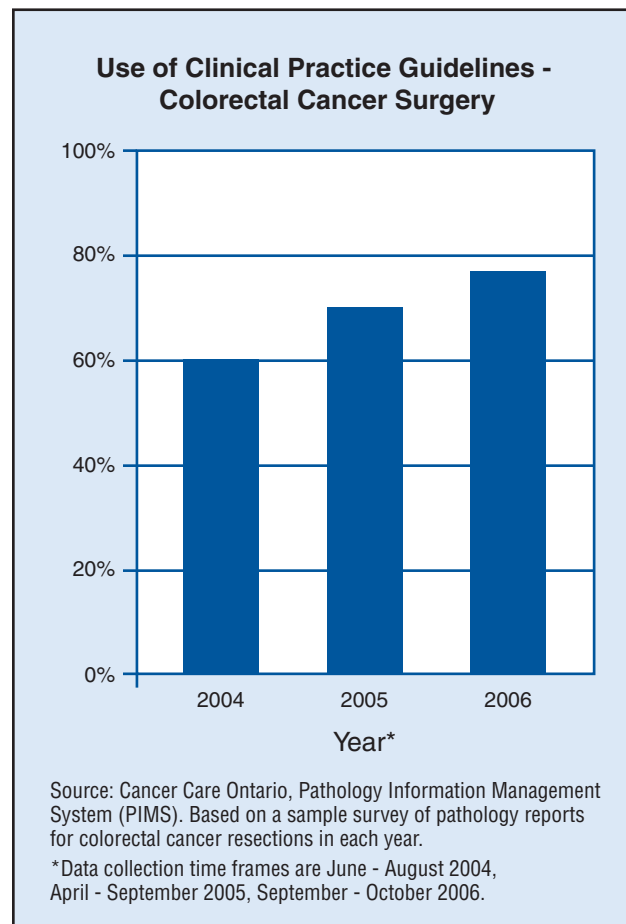


Fig 3. — Adherence with clinical practice guidelines. Percent of colorectal cancer resections with 12 or more lymph nodes reported (CSQI 2007).

of key procedures, including cancer surgery. At the provincial level, CCO has worked in collaboration with the Ministry of Health and Long-Term Care to establish the Wait Time Information Office and develop the information management infrastructure needed to collect and report on wait times.<sup>18</sup>

**Step 2 (knowledge):** This information was then used by the SOP together with practice leaders to analyze care patterns, identify pressure points in the care process, and establish targets for appropriate surgical waits by priority level that served as a benchmark for action.

**Steps 3 and 4 (knowledge transfer and performance management):** The surgical wait times reduction initiative succeeded largely as a result of its ability to leverage provincial funding increases to achieve quality improvement. CCO created cancer surgery accountability agreements with hospitals participating in the provincial Wait Times Reduction Strategy. Each participating hospital received incremental funding increases from the Ministry for increased surgical volumes and agreed, as a condition of funding, to measure and report cancer data (not only surgical wait times but also other quality indicators including stage), implement evidence-based care and organizational standards, and implement process improvement plans to shorten wait times. This has led to measurable results. As shown in Fig 4, since August 2005, when the results were first publicly reported, to December 2008, the 90th percentile for surgical wait times has decreased by 36% from 81 days to 52 days. In addition, regional variability in wait times has decreased. Initially, 90th percentile wait times for cancer surgery from one Local Health Integration Network to another varied by over 2 months between the longest and shortest waits, ranging from 112 to 47 days, respectively. Through the work of the SOP and regional surgical care leads, the regional variability has gone down by 25% to a range of 87 to 38 days at the end of 2008. However, the SOP is now reviewing current data indicating that the most urgent cancer surgeries may not be completed quickly enough. These data were reported publicly for the first time in the CSQI 2009. It remains to be seen whether current incremental funding increases coupled with process improvements will be enough to address priority wait times.

#### **Thoracic Surgery: The Development and Implementation of Province-Wide Organizational Standards**

The most ambitious and challenging example of CCO's work to date, requiring a strong evidence base, strong clinical leadership, public accountability through public reporting, financial incentives, and overall system change, is CCO's current initiative to develop and implement organizational standards for cancer surgery. These standards include requirements for provider training and experience as well as facility organization and capacity. Their implementation requires negotiating significant changes to the health services delivery system, including progressive changes in patterns of

care and patient transfers, establishment of new hospital models, and changes in surgical funding that support best practice.

**Step 1 (data):** Based on a systematic review of the performance data by regions, the thoracic surgery community of practice identified problems in surgical outcomes with significantly higher levels of postsurgical mortality in certain regions.

**Step 2 (knowledge):** The surgical leads then engaged the PEBC to review the research evidence and establish best practice. Through a systematic literature review and a consensus-based approach from an expert panel, the PEBC and the Clinical Council confirmed the existence of a volume-outcome relationship for several cancers that require complex surgery (including thoracic and hepatic, pancreatic and biliary tract [HPB] cancers), and published an organizational standard.<sup>19</sup> The Thoracic Surgical Oncology Standards establish mandatory requirements for performing thoracic surgery in Ontario. These include criteria for surgical training and support, hospital criteria, and expected minimum surgical volumes.

**Steps 3 and 4 (knowledge transfer and performance management):** Once published, the SOP undertook a significant quality improvement project to endorse and implement the standard with the direct support and collaboration of the RVPs. The initial area of focus for CCO was the negotiation of system change to support implementation of the standard. This entailed a significant collaborative process between CCO executives, the SOP, regional cancer centers, thoracic surgeons, and hospital and Local Health Integration Network CEOs to monitor and encourage implementation of the thoracic standard, including negotiating the transfer of all thoracic surgeries to designated centers, to improve quality care and surgical outcomes. CCO

postsurgical mortality data for each hospital was regularly reviewed to support the reorganization of the system and move towards the establishment of “designated centers” for the performance of thoracic surgery. Designated centers are defined as either fully compliant or moving toward compliance with the standard, including conducting a minimum of at least 150 lung cancer surgeries and at least 20 esophageal cancer surgeries annually. To negotiate the establishment of these centers, CCO depended on the clinical governance model that brought together both the strong clinical leadership of the surgical program heads and the support of the regional administrative heads — the RVPs. As of the end of 2008, 13 of the 14 RCPs had established plans to meet the requirements in the thoracic standard by either designating a center within their boundaries or making the decision to partner with a level 1 center in a neighboring RCP to treat their patients. Fig 5 shows progress in moving thoracic surgery to higher-volume centers since the implementation of this quality improvement initiative.

The negotiation process led by the clinical and regional leads was facilitated by the modest financial lever available through existing contractual agreements with the regions. Hospitals receiving funds to carry out cancer surgeries under the Wait Times Reduction Strategy also agreed to be accountable for the implementation of the thoracic standard. CCO’s SOP is supporting a thoracic cancer community of practice composed of thoracic surgeons across the province. This group meets periodically to plan, discuss, and share information about thoracic standard implementation and quality improvements. Participation of practicing surgeons in endorsing the standard and planning and managing change is essential.

At the beginning of this initiative, the SOP developed indicators to monitor compliance with the stan-

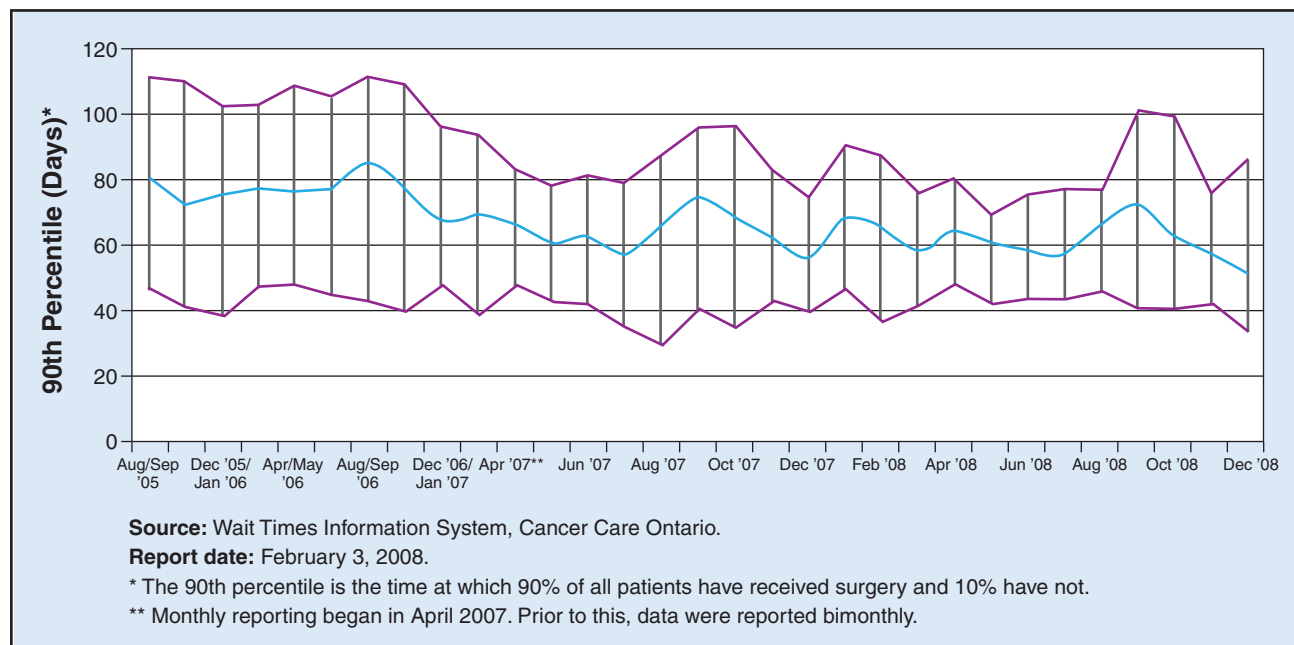


Fig 4. — Surgical waits: variability by region and over time (CSQI 2009).

dard. Results have been reviewed regularly with the regions through the Clinical Council and PLC — at first only internally. However, since May 2008, thoracic standard indicators have been reported publicly through CSQI. Currently, only compliance with expected volumes is publicly reported, by region and at the local hospital level, but plans are in place to monitor impact of the reorganization on surgical outcomes and report this publicly as well. Since the implementation of the thoracic surgery standard in 2007, compliance continues to slowly increase, with 82% of all esophageal and 78% of all lung surgeries in Ontario performed at a designated center.<sup>20</sup> Following a similar process, the CSQI will also begin publicly reporting on compliance with the HPB standard<sup>21</sup> for the first time this year. As with

the thoracic standard, public reporting will begin with reports of compliance at the hospital level with the volume requirements that should be met for safe and high-quality surgery and will move to outcome measures in future years.

### Conclusions

The literature has shown that successful health systems depend on the creation of an interrelated set of mechanisms that work together to support a quality improvement culture and continuously reinforce it as a system priority.<sup>5</sup> CCO, together with its partners, has succeeded in developing a clinical governance and performance improvement system that produces results. A review of CCO's performance improvement work in

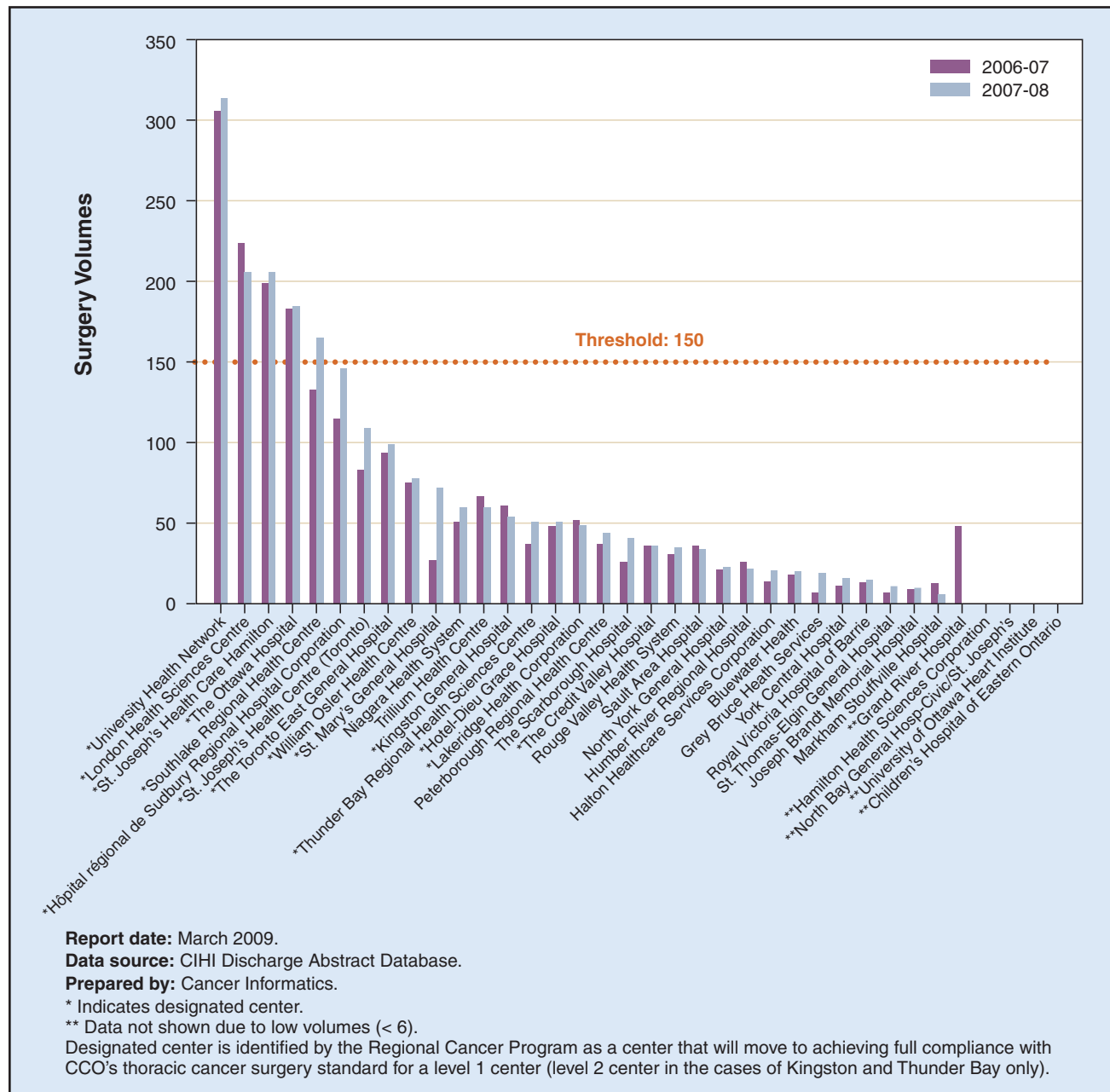


Fig 5. — Thoracic cancer surgery volumes by hospital (CSQI 2009), April 1, 2006–March 31, 2007, and April 1, 2007–March 31, 2008.

the past 5 years indicates the attributes enabling quality improvement in Ontario include (1) a clear, evidence-based strategy articulated through the OCP, (2) an organizational culture committed to evidence-based practice and decision making, (3) a regional structure to implement care and manage quality improvement, (4) regular collection, analysis, and reporting of data, including the public reporting of performance, (5) continuous involvement of provincial and regional clinical leaders, (6) formal and informal networks to disseminate and support best practice, (7) accountability agreements that link financial incentives to both data collection and adherence to quality standards, and (8) continuous interactions between the established governing bodies in an iterative performance improvement cycle. However, challenges remain. At CCO, as elsewhere, performance management and measurement frequently begin opportunistically, in areas where it is easiest to begin. CCO currently has a well-developed system to measure and improve access to care of the treatment phase of the care continuum. Future efforts will need to focus on (1) continuing to expand quality improvement initiatives to all phases of the cancer patient journey, including the time just prior to cancer diagnosis and the time after conclusion of cancer treatment, (2) measuring the appropriateness of care rather than just access, and (3) improving measurement and management of the patient cancer care experience. We believe the current governance structure and accountability framework offers a solid foundation with which to continue meet ongoing challenges.

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