2011 Quality Improvement Plans: An Analysis for Learning

Ontario

Health Quality Ontario

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Executive Summary

In April 2011, Ontario hospitals developed their first Quality Improvement Plans (QIPs), as required under the *Excellent Care for All Act* (ECFAA) (2010). According to the Act, these plans were to be submitted to Health Quality Ontario (HQO) in a format established by HQO that permits province-wide comparison of and reporting on a minimum set of quality indicators.

HQO presents this analysis of the 152 QIPs submitted. The main purpose is to identify examples of plans that stood out for having a clear vision and strategy for improvement, so that other organizations can learn from them. This analysis also identifies areas for improvement in the plans submitted. In doing so, the aim is to learn from past experience. The most constructive approach is to describe problems, identify their possible root causes and suggest improvements for the future. It is important to acknowledge that this is the first year that hospitals have submitted these plans, and, as such, gaps or problems in the QIPs may have arisen due to the newness of the process or issues with the templates developed, the QIP guidance documents or clarity about expectations.

The three key messages to learn from this year's submissions are as follows:

1. **Priority Setting:** Organizations should have a limited set of priorities — not too few, not too many. The average hospital chose 4.5 Priority 1 (highest priority) topics. The "right" number of priorities is not known, but in the future, we will look at the relationship between the achievement of goals and the number of priorities chosen.
2. **Target Setting:** It is important for organizations to set stretch targets for improvement. Good examples of stretch targets showed the following patterns:
   - Aim for the theoretical best (e.g., 100% adoption of a best practice, or zero defects)
   - Aim for the best achieved elsewhere
   - Aim for the 90th percentile among peers
   - Aim to cut a defect or waste in half in the current planning cycle
   - Aim to match a rate of improvement achieved by other organizations
   - Aim to match the average (*only* in situations where an organization is far below the average)
3. **Change Ideas:** The best plans provided a broad range of change ideas to implement best practices, including:
   - Measuring quality and feeding data back to providers
   - Redesigning or standardizing processes
   - Providing clinical decision supports, reminders
   - Developing or verifying staff skills
   - Ensuring infrastructure, capacity or resources are properly configured
   - Engaging patients
   - Creating the right accountability mechanisms.

This document also recommends changes to the guidelines for QIPs to improve clarity, and includes a list of resources specific to each indicator (Appendix I) and a technical report with methodology and data sources for each indicator (Appendix II).

Background

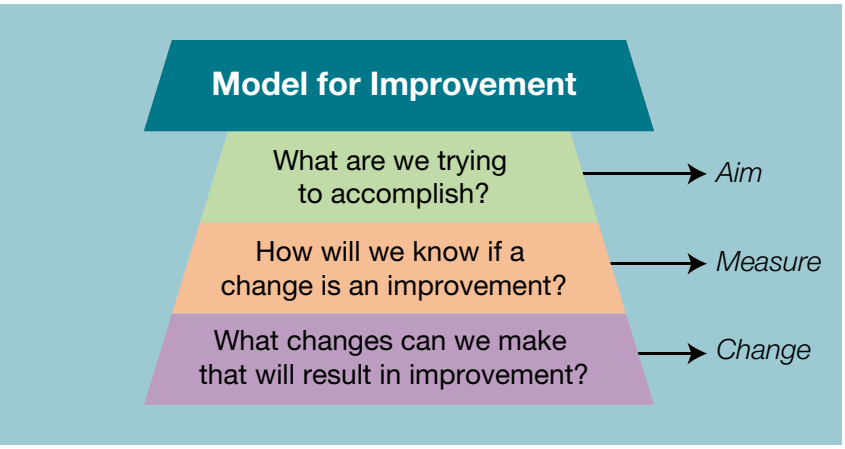
QUALITY IMPROVEMENT PLANS: WHAT ARE THEY? WHY DO THEY MATTER?

Under ECFAA, every hospital in Ontario (as defined in the *Public Hospitals Act*) is required to submit an annual QIP that includes annual performance improvement targets and the justification for those targets. The hospital's Quality Committee must oversee the preparation of the QIP, which must be certified by the Board Chair and the Chief Executive Officer, and submitted to HQO. The plan must also be made available to the public.

The requirement to develop an annual QIP is only one aspect of the legislation, but it is key to driving quality. A strong plan is an indicator of strong organizational leadership for quality. It helps an organization focus on a limited number of priorities and pick a few things that it will change or do differently in any given time period, rather than trying to "boil the ocean."

APPROACH TO QUALITY IMPROVEMENT PLANS

Ontario's vision for QIPs is based on the Model for Improvement framework for quality initiatives developed by thought leaders at the Institute for Healthcare Improvement (IHI), which asks three simple questions:



The first two questions — "What are we trying to accomplish?" and, "How will we know if a change is an improvement?" — are embodied in ECFAA. Hospitals are required to set clear aims: a specific numeric target for improvement to be accomplished by a specific time frame in the fiscal year.

The importance of a bold aim was perhaps best articulated by Don Berwick, former CEO of IHI, who used the statement, "Some is not a number, soon is not a time" to launch IHI's 100,000 Lives Campaign in December 2004. The campaign recruited hospitals across the United States to improve six interventions, including those associated with ventilator-associated pneumonia (VAP) and central line infection (CLI) (which also appear on Ontario's list of standard quality indicators), and reduce mortality by June 14, 2006. The campaign ultimately surpassed its goal, saving 122,300 lives.[1]

The answer to the third question — "What changes can we make that will result in improvement?" — describes the organization's change strategy. When developing their change strategies, hospitals should consider two change dimensions:

- Specific changes to clinical practices or activities that, according to scientific evidence, will lead to improvement (e.g., ordering the right drug or performing a test at the right time for a patient).
- Specific changes to organizational practices that will ensure best clinical practices are adopted not just some of the time but all of the time (e.g., ensuring that people have the right skills to perform a task or redesigning the way care is delivered to ensure that key information is always passed from one person to the next).

1. Tanne JH. US campaign to save 100,000 lives exceeds its target. *BMJ*. 2006 Jun 24;332(7556):1468.

ANALYSIS OF YEAR-ONE QIPS: A LEARNING CURVE

QIPs are a new process for Ontario hospitals. To help guide their design, the Ministry of Health and Long-Term Care (MOHLTC) established a working group made up of representatives of the ministry, HQO, the Ontario Hospital Association (OHA) and the Local Health Integration Networks (LHINs) in the fall of 2010. To streamline reporting, the working group recommended that the QIPs focus on four key attributes of quality care: safety, effectiveness, access and patient-centred care. It also developed a standard template for QIPs, which would make it easier to compare quality improvement activities across hospitals.

By April 1, 2011 — less than a year after the passing of the new legislation — hospitals were required to submit their QIPs (a short-form narrative and accompanying Excel file) to HQO. HQO subsequently reviewed the QIPs submitted by 152 hospitals, which provided a snapshot of hospital activity and performance across the province.

PURPOSE OF THE ANALYSIS FOR LEARNING

The analysis is designed to be a learning tool. Its purpose is to:

- Confirm compliance with the legislation — that hospitals did submit QIPs with targets and timeframes.
- Highlight examples of plans that stood out for having a clear vision and strategy for improvement.
- Identify any challenges that hospitals experienced developing their QIPs and explore their possible root causes.
- Provide information that will help hospitals improve next year's QIPs and set the stage for success in future years.

This information is being made public in a spirit of transparency, to maximize the spread of good ideas for improvement across the hospital sector.

The Analysis for Learning examined the following aspects of quality improvement plans:

Priority Setting: How many priorities did hospitals typically choose in their QIPs, and what topics did they choose? How can hospitals improve their priority setting?

Target Setting: What types of targets did hospitals set? Are there examples of well-articulated "stretch" targets? How can hospitals improve their target setting?

Change Ideas: What types of change ideas do hospitals describe? How can hospitals strengthen their change ideas?

All terms used in this analysis and in sources are identified in Appendix II.

Lessons Learned

Priority Setting

A QIP is an important place to identify key priorities for improvement. Priorities help organizations focus on what they want to accomplish. In their QIPs, hospitals were asked to identify indicators or areas for quality improvement and rank them as Priority 1, 2 or 3. They were asked to include in their QIPs a standard, core set of indicators for safety, effectiveness, access and patient-centredness, but were also encouraged to include indicators representing local priorities for improvement.

To be successful in improving quality, how many priorities should a QIP have? The answer to this question is challenging. Too many priorities may lead to diluted efforts; too few may mean some key areas of quality are neglected. It may take several years of reviewing QIPs and analyzing whether a hospital's success in attaining its targets is related to the number of priorities, to answer that question.

For 2011 QIPs, the analysis looked at the Priority 1 indicators identified by hospitals, and the change ideas they offered. This document provides a descriptive analysis of the number and type of Priority 1 indicators, summarizing the information submitted by hospitals.

FINDINGS

Number of Priority 1 Indicators

The number of Priority 1 indicators chosen by a hospital ranged from a high of 15 to a low of one. The provincial average was 4.5 Priority 1 indicators per hospital. As Figure 1 illustrates, acute teaching hospitals identified, on average, more Priority 1 indicators than small community hospitals, rehabilitation or mental health hospitals.

FIGURE 1: AVERAGE NUMBER OF PRIORITY 1 INDICATORS BY TYPE OF HOSPITAL

Peer Group	Average Number of Priority 1 Indicators
Province	4.5
Acute Teaching	5.3
Large Community	5.0
Small Community	3.9
CCC & Rehabilitation	3.8
Mental Health	2.5

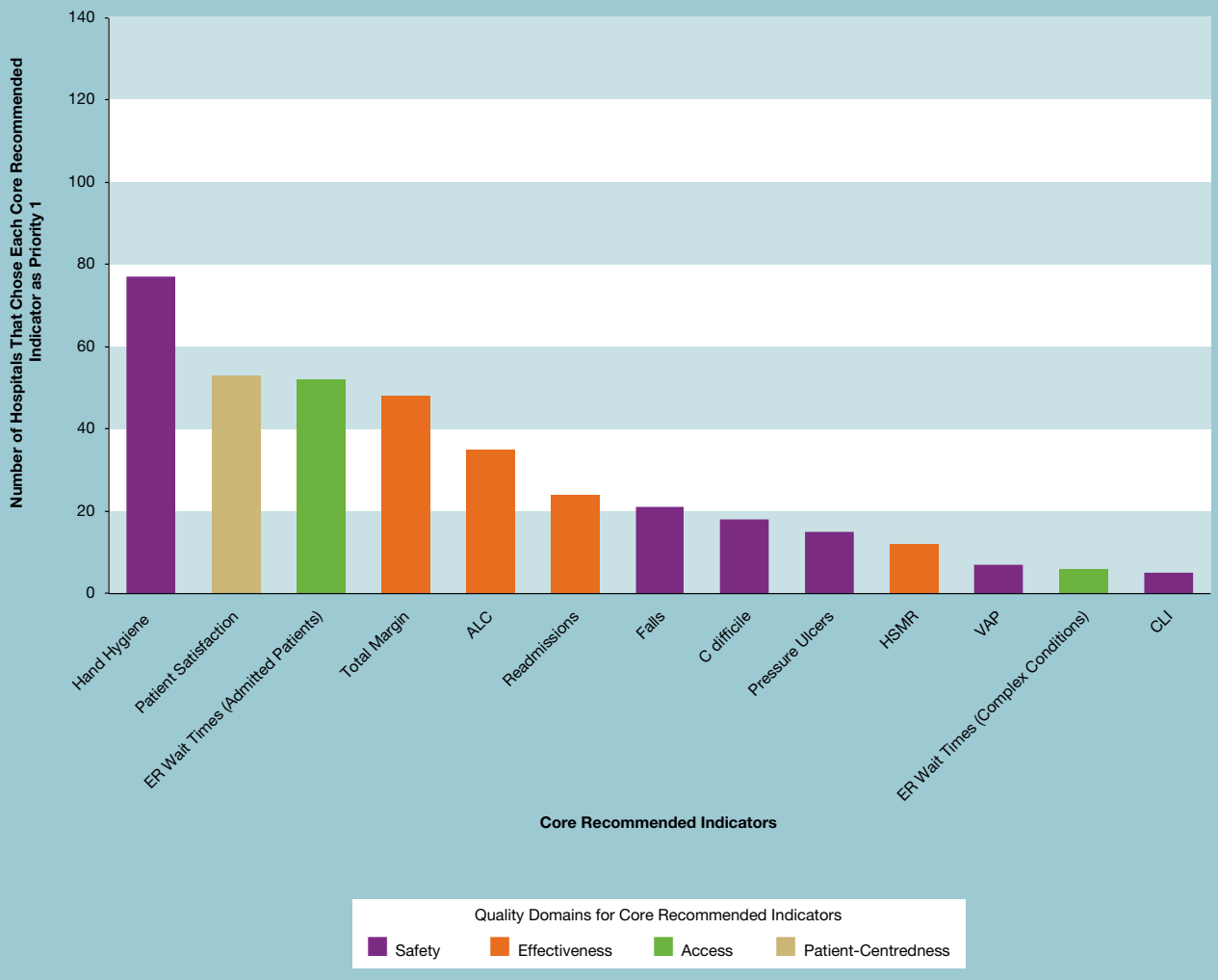
Most Frequent Priority 1 Indicators

From the core set of indicators provided to hospitals, Figure 2 displays the frequency with which they selected each as a Priority 1.

The most popular choices for Priority 1 topics for improvement were hand hygiene, patient experience, emergency department (ED) waits and total margin.

It is interesting to note that, among the top four topics, there is a least one for each key attribute of quality care: safety (hand hygiene), effectiveness (total margin), access (ED waits) and patient-centred care (patient experience). There were slight differences in the popularity of other topics between large and small hospitals; for more details, see Appendix II.

FIGURE 2: FREQUENCY OF TOPICS CHOSEN AS PRIORITY 1 IN 2011/12 ONTARIO HOSPITAL QUALITY IMPROVEMENT PLANS (N = 152)



There were many other Priority 1 topics for improvement suggested by hospitals; these are summarized in Figure 3. The number in brackets is the Priority 1 frequency count.

For patient experience, organizations were asked to include an overall indicator for improvement (percentage who would definitely recommend the hospital to family or friends). In order to achieve success, however, it is important to identify a specific area for improvement. The common areas chosen by hospitals included:

- Pain management
- Communication to patients
- Streamlining of intake admission, transfer and discharge processes
- Call bell responsiveness
- Food experiences

Target Setting

Hospitals were asked to provide baseline measures and set targets for improvement in their QIPs. Having a clear goal or target and a specific time frame to reach that target is essential to success. The responsibility for adopting aims and overseeing measures belongs to the Board and senior leaders, and cannot be delegated. What the Board or leaders pay attention to gets the attention of management, physician leaders and, ultimately, the entire organization.

Hospitals are more likely to achieve their quality improvement targets when they set a "stretch target" — that is, one that is challenging but achievable — rather than having no stated target or a vague or minimal target (e.g., "Just do your best" or, "Do better"). The effectiveness of setting stretch targets has been well

FIGURE 3: ADDITIONAL INDICATORS SELECTED BY HOSPITALS

Safety	Effectiveness
• Surgical safety checklist compliance and implementation rate (20) • Medication reconciliation (19) • Methicillin-resistant *Staphylococcus aureus* rate (12) • Venous thromboembolism prevention (11) • Vancomycin-resistant *Enterococci* rate (9) • Medication incidents/errors (9) • Hand hygiene compliance rate after patient contact (7) • Surgical site infection rate (7) • Safe work environment (6) • Physical restraint (5) • Cleaning compliance on high-touch surfaces (5)	• Staff satisfaction (7) • Compliance rate with established guidelines and standards (7) • Overtime pay, sick time and vacancy rate (4) • Non-value added work in process (e.g., unnecessary time spent in acute care, continuing care and rehabilitation) (4) • Average length of stay (3)
Access	**Patient Experience**
• ED wait time for non-admitted low-complexity patients (7) • CT scan wait time (6) • MRI scan wait time (4)	• Patient satisfaction rate regarding the overall quality of care and services received at a hospital or an emergency department (6) • Number of complaints addressed by patients and their families (4)

documented in Edwin Locke's exhaustive review of psychological literature from 1969 to 1980.[2] Stretch targets can be inspirational. They motivate staff and, when accomplished, can engender confidence in their ability to tackle the next major challenge.

But what is a stretch target? For some indicators, hospitals may not have benchmarks to help them set targets. The QIP guidance document (January 2011) offered some examples of possible criteria for stretch targets, which were largely based on the concept of aiming for the best that had been achieved elsewhere. These examples are promising because they demonstrate that a certain level of improvement is definitely possible.

While the quality improvement process encourages hospitals to set stretch targets, those targets must be focused and realistic. For example, it is unrealistic for a hospital to set breakthrough targets across the entire spectrum of performance. In fact, it is highly unusual for any organization, in or out of health care, to achieve breakthrough targets in more than one or two priority areas during any one year.

In this analysis, HQO looked specifically at the types of targets hospitals set, to identify examples of stretch targets and ways to help hospitals develop more effective targets. The following section is meant to assist hospitals in target setting that is designed to drive improvement. This analysis will help enable better results for the next phase of QIPs.

FINDINGS

This analysis of the 2011 QIPs identified several good examples of stretch targets that organizations put forward that appear to be stretch goals, based on one of six guidelines for setting targets.

1. Aim for the Theoretical Best

For certain indicators, there may be a theoretical best that hospitals can aim for, particularly in areas that measure defects, wait times or use of a best practice. For example, a theoretical best could be to aim for zero defects, zero wait time or 100% adoption of a recommended clinical practice. However, for some indicators — particularly those that are related to part of the disease process — it is not realistic to aim for a theoretical best because the indicators can be reduced but not eliminated. For example, readmissions can be reduced but not eliminated because some people may legitimately need to come back to hospital for an unavoidable complication. It is also likely impossible to eliminate *C. difficile*-acquired infection because some patients may be natural carriers of the bacteria and, if they receive certain antibiotics, could develop *C. difficile* diarrhoea, even if the hospital did everything it could for infection control.

Several hospitals set realistic stretch targets based on theoretical bests. For example:

- The Mental Health Centre Penetanguishene and the Dryden Regional Health Centre are aiming to complete medication reconciliation on 100% of patients.
- Campbellford Memorial Hospital is aiming for 100% compliance with its antibiotic stewardship protocol.
- Kirkland and District Hospital is aiming to move the use of VTE prophylaxis from <50% to 75% in 2011/12 and to 100% in 2012/13.
- Windsor Regional Hospital is aiming to reduce high-alert medication incidents from 18 to zero.
- Georgian Bay General Hospital and Hamilton Health Sciences Centre are aiming to increase use of the surgical safety checklist from 97.6% and 93.7%, respectively, to 100%.

2. Locke, Edwin A, Shaw, Karyll N, Saari, Lise M, Latham, Gary P. (1981). Goal Setting and Task Performance: 1969–1980. *Psychological Bulletin* (American Psychological Association) 90 (1): 125–152. http://datause.cse.ucla.edu/DOCS/eal_goa_1981.pdf. Accessed October 17, 2011.

2. Aim for Best Achieved Elsewhere

Another option is to set targets on the best achieved elsewhere. There are now many precedents for hospitals attaining zero VAP and CLI rates. For example, almost all ICUs in Michigan signed onto the Keystone project and, after implementing the CLI bundle, the majority have maintained a zero infection rate.[3] In the Rhode Island ICU collaborative, more than half of participating units have now attained a zero VAP rate.[4] As noted in HQO's 2011 *Quality Monitor*, North York General has maintained a zero VAP rate for two years and Windsor Regional Hospital has also brought its CLI rate to zero.

Several hospitals set stretch targets that aim for the best achieved elsewhere. For example:

- Queensway Carleton is aiming to reduce VAP from 0.57 to 0 and CLI from 0.51 to 0.
- Grand River is aiming to reduce VAP from 2.55 to 0 and CLI from 1.33 to 0.
- St Thomas–Elgin is aiming to reduce VAP from 3.17 to 0.

3. Aim for 90th Percentile Among Peers

The Centres for Medicare and Medicaid recently suggested aiming to be in the 90th percentile among peers as a stretch goal.[5] Within Ontario, this could be a good stretch target if the hospital's starting point or baseline falls well short of this level.

In the 2011 QIPs, no hospital set a 90th percentile target, but some are aiming to be in the top third among their peers.

4. Aim to Cut a Defect or Waste in Half in the Current Planning Cycle

While the theoretical best target (option 1) may be ideal, aiming to reduce a problem by a specific amount may be more realistic and achievable, and a step on the way towards achieving the more theoretical target. This type of target works best with those indicators where the theoretical maximum can be readily defined, such as zero defects, zero wait times and 100% adoption of a best practice or zero wait.

Several hospitals appear to have used this principle in setting targets for hand hygiene compliance, essentially reducing the amount of non-compliance by roughly half. Examples include those outlined in Figure 4.

FIGURE 4: HAND HYGIENE TARGET EXAMPLES

Hospital	Baseline	Target
St. Michael's	65%	80%
Guelph General	65%	80%
Bluewater	45%	75%
St. Thomas-Elgin	63%	80%

5. Aim to Match the Rate of Improvement Achieved By Other Organizations

For some quality indicators, there are no well-defined benchmarks for performance (e.g., best achieved elsewhere). In other instances, a hospital cannot compare its performance to that of other hospitals because of differences in case mix. For patient experience, the theoretical best may be 100%, but there is no precedent for achieving this even in other industries and, historically, organizations that have attempted to improve this indicator have been able to achieve slow but steady improvements over time.

One possible approach to setting targets for these indicators is to look at the best rates of improvement achieved by organizations that have focused on these problems. For example, there are precedents in Canada and abroad of hospitals that have been able to achieve a 5- to 10-point-per-year reduction in their hospital

3. Pronovost PJ, Goeschel CA, Colantuoni E, Watson S, Lubomski LH, Berenholtz SM, Thompson DA, Sinopoli DJ, Cosgrove S, Sexton JB, Marsteller JA, Hyzy RC, Welsh R, Posa P, Schumacher K, Needham D. Sustaining reductions in catheter related bloodstream infections in Michigan intensive care units: observational study. *BMJ*. 2010 Feb 4;340:c309. doi: 10.1136/bmj.c309.

4. DePalo VA, McNicoll L, Cornell M, Rocha JM, Adams L, Pronovost PJ. The Rhode Island ICU collaborative: a model for reducing central line-associated bloodstream infection and ventilator-associated pneumonia statewide. *Qual Saf Health Care*. 2010 Dec;19(6):555-61.

5. U.S. Department of Health and Human Services. Report to Congress: Plan to Implement a Medicare Hospital Value-Based Purchasing Program. http://www.cms.gov/AcuteInpatientPPS/downloads/HospitalVBPPlanRTCFINALSUBMITTED2007.pdf. Accessed October 17, 2011.

standardized mortality ratio (HSMR). Examples of hospitals that have followed this principle include the following:

- Windsor Regional Hospital, which is aiming to reduce HSMR from 101 to 90 by focusing on reducing sepsis.
- Niagara Health System, which is aiming to reduce HSMR from 105 to 95 by focusing on sepsis, venous thromboembolism and an early warning.

6. Aim to Match the Average (Only in Situations Where an Organization is Far Below Average)

One approach to setting targets is to look at average or median performance in the sector. *We caution, however, that, in most instances, average quality is not desirable and far from the optimal or best demonstrated elsewhere*. This approach should be considered only in instances where an organization's baseline falls far below the average for quality. For example, one hospital set its target at the provincial average of 66%, as its baseline rate was at 52%. Even then, this type of target should be considered in the short term, and the long-term target should to be to exceed the provincial average, using some of the examples above.

AREAS FOR IMPROVEMENT IN TARGET SETTING

A number of 2011 QIPs — across all types of hospitals, from large teaching centres to small rural hospitals — did not include stretch targets for all their priorities. The analysis identified three main problems: the targets set were lower than the baseline performance, the targets represented insignificant or minimal improvement, and/or baseline measures and targets were missing.

This section describes the problems seen in the QIPs, possible root causes for these problems and suggested strategies to overcome them. It is important to note that the root causes listed are not definitive, and were obtained from consultations with the field at educational forums and discussions with hospital leaders, not from the hospital QIPs themselves. Hospitals should always conduct their own internal root cause analysis, and are encouraged to think of root causes that are unique to their organizations. The ones listed here are offered as a starting point for discussion. Similarly, the suggested strategies for consideration are based on HQO's analysis of the plans, but hospitals are encouraged to brainstorm their own ideas for strengthening their plans.

1. Targets Lower Than Baseline Performance

Several hospitals set targets that were below their baseline performance. This gap occurred for indicators at all priority levels. Examples of this include the following:[6]

- ER 90th percentile wait for admitted patients
  – Baseline 21.4 hours, target 25.0 hours (Priority 1)
- ED time to physician assessment
  – Baseline 2.9 hours, target 3.2 hours (Priority 1)
- Hand hygiene
  – Baseline 77%, target 75% (Priority 2)
- CLI
  – Baseline 0, target 1.2 (Priority 2)
- HSMR
  – Baseline 83, target <100 (Priority 3)
- *C difficile*
  – Baseline 0.14, priority 0.34 (Priority 3)
- VAP
  – Baseline 1, target 2 (Priority 3)

Hospitals described at least two root causes for this phenomenon in the comments section of the template:

- A belief that "average" performance was the target, even though current performance was already better than average. This was particularly common in the case of HSMR, where it was assumed that 100 was the target.
- The organization intended to maintain quality at its current level because the indicator was not a major priority; however, the hospital set a goal below baseline performance to allow for random variation in the indicator.

6. Some numbers have been rounded from the original source.

While these perceptions are understandable, they pose a significant problem in that the public or employees may look at the target numbers and misunderstand the intent, which may have a negative impact on the hospital's reputation.

Considerations

HQO suggests that organizations consider the following in future years:

1. QIP guidelines encourage hospitals that are already "above average" to set targets that at least maintain the status quo. By maintaining superior results, hospitals can continue to set the pace for other organizations.
2. For organizations that do wish to maintain the status quo, the QIP template provides an option that allows them to enter "maintain current level plus or minus random variation" as their target. This would eliminate the need to set a below-current-performance target, to allow for random variation.

2. Targets That Represent Insignificant or Minimal Improvement

Some hospitals set targets that represented minimal improvement compared to baseline. In some cases, the relative improvement was less than 1%; in others, the goal was identical to current performance. These types of targets will not be helpful to organizations that are seeking to improve their performance. Examples of this include the following:

- Hand hygiene
  – Baseline 79%, target 80% (Priority 1)
- Readmission rate
  – Baseline 14.4%, target 14.6% (Priority 2)
- VAP
  – Baseline 1.10, target 1.10 (Priority 1)
- Surgical checklist compliance
  – Baseline 93%, target 93% (Priority 2)

The possible root causes for this phenomenon include:

- Lack of clarity about what constitutes a stretch target.
- Reluctance to set a stretch target in a year when executive compensation is tied to quality (in accordance with ECFAA) but overall compensation has been frozen (in accordance with public sector wage restraint legislation). Because this is the first year of this fundamental shift, Boards may have been new to managing executive compensation tied to performance.

Considerations

To ensure that bold stretch targets are set in the future, HQO suggests that organizations consider:

1. Engaging clinicians in the target-setting process, to ensure that targets are challenging but realistic. This encourages ownership of targets and buy-in for performance improvement initiatives.
2. Carefully considering what the overall QIP targets should be, to describe what the organization aspires to achieve and what the target should be for executive compensation. There is no explicit legislative requirement that these two types of targets be exactly equivalent to each other. It is possible for some but not all improvement targets to be tied to executive compensation. For example, when a hospital wants to set a stretch goal to reduce alternative level of care (ALC) days, part of that reduction depends on things that the hospital can do, while part depends on the actions of other partners, such as home care and primary care. A CEO can influence but cannot manage the actions of those partners. In that case, it may be reasonable to tie CEO compensation to those actions that he or she can manage, but not to those that he or she can influence but does not control.

3. Missing Baseline Measures or Targets

For some priorities, hospitals did not set a specific numeric target. Instead, they stated that the target was to be "better," "meet the average" or "meet the average for the peer group." In these cases, the hospitals did not provide a clear explanation for the lack of a numeric target.

In other cases, hospitals did not provide a baseline performance measure with the target, so it was difficult to assess whether the target would be a stretch. This situation occurred most commonly when a hospital was aiming to improve in an area where no data had previously been collected. Lack of baseline data makes it difficult to set a realistic target.

Considerations

To avoid this gap in the future:

1. QIP guidelines should place more emphasis on the fact that numeric targets are essential to comply with the legislation.
2. Guidelines can include examples of good stretch targets that other hospitals can emulate.
3. If a hospital does not have baseline data, the guidelines should suggest that the hospital, as part of its QIP, set a specific time when it will finish collecting the baseline data and make available to the public an updated plan with a numeric target.

Change ideas

In their QIPs, hospitals were asked to identify change ideas for all their Priority 1 indicators.

Change ideas are important. They help an organization develop its strategy for improvement, identify key evidence-based best practices to be implemented, anticipate common barriers to implementation and create a plan to address those barriers. When identifying change ideas, hospitals should think of change strategies in two ways:

1. What are the specific practices or activities that, according to the scientific evidence, would lead to improvement? This could include certain treatments, drugs or tests that need to be given for certain types of patients, and are often found in clinical practice guidelines.
2. What are the changes or approaches in organizational management that will ensure that certain clinical best practices are adopted not just half the time but all the time? This is important, because there is a huge body of evidence that suggests that best practices are often not implemented consistently — in fact, many are only implemented half the time, 15 to 20 years after the evidence becomes clear.[7]

To develop effective change ideas, hospitals must understand the root causes that affect consistent practice as well as any organizational issues that limit consistent use of best practices.

7. Balas EA, Boren SA. Managing clinical knowledge for health care improvement. In: *Yearbook of Medical Informatics 2000: Patient-Centered Systems*. Stuttgart, Germany: Schattauer; 2000:65-70.

Figure 5 illustrates some of the common root causes behind poor quality as well as the types of change ideas that can address those root causes. For organizations to be successful in their quality improvement efforts, they need to address multiple root causes, starting with those that are the most important and tackling them in order of priority.

FINDINGS

Several 2011 QIPS included excellent examples of change ideas that addressed root causes and were tailored to fit the specific problem. In the area of patient-centred care, one example of a QIP that incorporated a broad range of these elements was Trillium Health Centre's pain management plan (see Figure 6).

FIGURE 5: ROOT CAUSES BEHIND POOR QUALITY AND SUGGESTED CHANGES

Root Cause	Changes
• Providers unaware of how poor performance actually is	• Measurement and feedback systems
• Easy to forget, busy, too complicated, unaware of best practice	• Reminder systems, clinical decision supports
• Poor processes, non-standardized	• Redesigned processes
• Lack of skill to perform best practice, or deterioration over time	• Training AND skills verification, "on-boarding" of new staff, or creation of specialized staff or teams
• Wrong, or lack of, resources or capacity	• Targeted investments or shifting of capacity to where it is needed
• Patients unaware of their role or options, not engaged	• Patient engagement — education, involvement in design
• No incentive or motivation to change	• Recognition, rewards, inspiring leadership, account-ability, executive compensation tied to quality

FIGURE 6: TRILLIUM HEALTH CENTRE'S PAIN MANAGEMENT PLAN

Change Concept	Pain Management Ideas	Process measures
Measurement and feedback systems	Pain management database	N/A
Reminder systems, clinical decision supports	Standard order sets	Chart audits on use
Redesigned processes	Pre-procedure protocols, pain management plans, narcotics standardization	Chart audits on use
Training AND skills verification	Pain assessment skills training; create pain team available for consults	Number of consults, percentage satisfied with team
Patient engagement — education, involvement in design	Patient teaching on participating in pain assessment	Number of patients attending training
Recognition, rewards, inspiring leadership, accountability, performance incentives	Pain committee accountable to MAC	Number of meetings, percentage attendance

1. HAND HYGIENE

There were many good examples of plans for hand hygiene that incorporated a broad range of different change ideas, such as the plan prepared by St. Michael's Hospital. As Figure 7 shows, pooling the best ideas together from many different hospitals results in a rich plan that addresses all change categories.

FIGURE 7: CHANGE IDEAS TO IMPROVE HAND HYGIENE COMPLIANCE

Change Concept	Change Idea	Process Measure	Process Target	Hospital
Measurement & Feedback	Test novel hand hygiene monitoring technology on one unit	Percentage compliance on the intervention unit	Improvement in compliance by 10%	St. Michael's
	Post-unit-specific compliance feedback on each unit	Percentage of in-patient units with a visible poster per quarter	100%	St. Michael's
	Inclusion of physician HH rates as part of the MAC scorecard	Percentage compliance for moment #1	93%	Hotel Dieu Grace Hospital – Windsor
Reminders, Clinical Supports	Create a hospital-wide code word, to be used when missed hand hygiene opportunities are observed	Percentage compliance with hand hygiene before patient contact	5% increase in pilot unit	Chatham Kent Health Alliance
	Awareness campaign includes scheduled innovative methods to raise awareness regarding hand hygiene compliance (e.g., "It's OK to Ask," "Take a Moment," etc.)	Percentage completion of awareness campaign	90%	Collingwood General and Marine
	Implement hand hygiene screen-saver prompts	Percentage of nursing station computers the screen-saver prompts are loaded onto	100% of the 14 inpatient units	Toronto Rehabilitation Institute

FIGURE 7: CHANGE IDEAS TO IMPROVE HAND HYGIENE COMPLIANCE (CONTINUED)

Change Concept	Change Idea	Process Measure	Process Target	Hospital
Process Improvement	Installation of "empty flags" on all hand sanitizer dispensers	Percentage installation	100%	University Health Network
	Prepare a workflow pattern and risk assessment to facilitate placement of products and stations.	Percentage of clinic/department assessments completed	100%	Women's College
Skills Development	Educate new hires via e-learning	Percentage of new hires completing hand hygiene education	80%	St. Michael's
	Educate current staff via e-learning	Percentage of current staff completing hand hygiene education	70%	St. Michael's
Patient Engagement	Post new signs in patient rooms: "Remind me to clean my hands, if I have not."	N/A	N/A	Southlake
Incentives/ Motivation	Awards for units with top or most improved performance	Number of quarters where awards are given out	Award given to two units quarterly	St. Michael's

2. READMISSIONS

Using the same method of combining change ideas from different hospital QIPs yields a similarly robust plan for readmissions, as shown in Figure 8.

FIGURE 8: CHANGE IDEAS TO REDUCE READMISSION RATES

Change Concept	Change Idea	Process Measure	Process Target	Hospital
Measurement & Feedback	Provide quarterly data to physicians regarding readmissions; inclusion in MAC meeting and minutes	Number of days data are provided to physicians within the time it is available	Within 30 days of availability	Nipigon District Memorial
Process Improvement	Book follow-up appointment within five days of discharge or home visit by CCAC prior to discharge	Percentage of booked appointments within five days of discharge prior to discharge (via chart audit)	None identified	South Bruce Grey Health Centre
	Creation of a virtual ward. Case managers assess virtual ward patients through regular phone calls and provide case management	Percentage of unplanned emergency readmissions	Reduction of 5%	Toronto East General
	Improve patient outcomes for congestive heart failure patients discharged home through follow-up call from nurse practitioner within four business days	Audit congestive heart failure charts for percentage of patients discharged with follow-up phone call note on chart	Current CKHA congestive heart failure readmission rate = 20.2% for calendar year 2009. Decrease CHF readmission rate to 19% in 2011	Chatham Kent Health Alliance
Skills Development	Review effectiveness and use of the COPD teaching packages by completing a chart audit on all patients with COPD	Percentage of COPD readmissions per quarter	20% reduction in COPD readmissions	Woodstock General

FIGURE 8: CHANGE IDEAS TO REDUCE READMISSION RATES (CONTINUED)

Change Concept	Change Idea	Process Measure	Process Target	Hospital
Reminders, Clinical Supports	Use of standard order sets for admitted COPD patients, and establish baseline	Percentage of use of pre-printed order sets for patients admitted with COPD	50% of COPD patients have standard order sets completed on chart.	Cambridge Memorial
	Development of a discharge checklist for use by physicians	Turnaround time for discharge summaries, and percentage of medication reconciliation at discharge	None identified	Timmins and District
Targeted Investments	ED/FHT EMR Access Project provides the hospital ED physicians with secure access to the community records of patients rostered with the local FHT	Percentage downtime (secure access to FHT EMR)	<10% downtime	Collingwood General and Marine
Incentives/ Motivation	No examples found			
Patient Engagement	Education strategy for caregivers related to the COPD patient passport and increase awareness of the goal to reduce readmissions for COPD patients	Percentage of care providers in ER and medical units who attended COPD continuing education sessions	60% of care providers attended sessions (nurses, allied health and family physicians)	Cambridge Memorial

3. PATIENT EXPERIENCE

Figure 9 illustrates a robust plan to improve patient experience, based on change ideas identified by a number of hospitals.

FIGURE 9: CHANGE IDEAS TO IMPROVE PATIENT EXPERIENCE

Change Concept	Change Idea	Process Measure	Process Target	Hospital
Measurement & Feedback	Incorporate indicator question, "Would you recommend this hospital to your friends and family?" into all PDPC telephone logs	Percentage of areas incorporating the indicator question	100%	Toronto East General
	Inhouse patient satisfaction surveys tabulated weekly. Performance tracked weekly by staff during daily performance huddles at performance audit boards	Percentage responding definitely yes to the question, "Would you recommend this hospital to your friends and family?"	70%	St. Thomas Elgin General
Process Improvement	Improve response time to call bells through implementation of the Releasing Time to Care program on acute units at both sites. Focus to be on the shift handover module as well as developing and implementing a just in time inpatient survey that identifies specific areas of improvement that affect patient recommendation	Percentage positive response rate to NRC Picker survey question, "Wait time after call bell reasonable." Current performance: 49.4% at end of September 2010	20% improvement, to 59.3%	Markham Stouffville
	Post-discharge phone surveys to improve discharge practices to create a better patient experience in medicine and ED	Percentage of post-discharge phone calls made within 48 hours to high risk patients in medicine and ED areas	10%	York Central

FIGURE 9: CHANGE IDEAS TO IMPROVE PATIENT EXPERIENCE (CONTINUED)

Change Concept	Change Idea	Process Measure	Process Target	Hospital
Skills Development	Implement a customer experience expo to share best practices. The expo will give staff the opportunity to learn more about current practices implemented in-hospital and explore other best practice opportunities	The event will be implemented by March 31, 2012	100% implemented	Sunnybrook
	Implement a hospital-wide customer service program. This program consists of tools including self-reflective exercises and role playing geared to improving communication with customers	Percentage of organization's leaders that have attended a customer experience training session	85%	Sunnybrook
Reminders	Use of a discharge checklist to create a better patient experience in medicine and ED, ultimately improving the continuity and transition score	Percentage of discharge checklist completed in medicine and ED areas	70%	York Central

FIGURE 9: CHANGE IDEAS TO IMPROVE PATIENT EXPERIENCE (CONTINUED)

Change Concept	Change Idea	Process Measure	Process Target	Hospital
Incentives/ Motivation/ Accountability	Standards of behaviour implemented for all staff and physicians	Percentage of behaviour standards implemented	100%	The Ottawa Hospital
	Develop and implement the Office of Patient Experience. This office will develop and implement a variety of tools and services that contribute to enhancing the patient and family experience	Percentage implementation of the Office of Patient Experience	100% by March 31, 2012	Sunnybrook
Patient Engagement	Family Leadership Program — gives family members an opportunity to advise Holland Bloorview on hospital policies and programs, share their healthcare story and provide peer support to other families	The number of clients and families trained in leadership program and number participating in quality and safety agenda/initiatives	60 clients or families participate in Family Leadership program	Holland Bloorview Kids Rehabilitative
	Implement Patient and Family Advisory Council work plan, which includes populating planning and decision groups with Patient Experience Advisors (PEAs)	Number of PEAs on key planning/decision making forums	15 PEAs as members on committees & councils	Kingston General

AREAS FOR IMPROVEMENT IN CHANGE IDEAS

In the analysis of change ideas in the 2011 QIPs, HQO identified a number of challenges that hospitals faced in developing change strategies:

- not identifying change ideas or identifying only one change idea;
- including an analysis of root causes but not the change ideas to address those causes; and
- not specifying a process indicator or target to describe the successful implementation of a change idea.

1. Unspecified or Limited Number of Change Ideas

Many QIPs either did not clearly specify their change ideas or listed only one change idea. The most common change idea identified across hospitals was staff education or in-service training, such as:

- Offer in-services on best practices for patient experience.
- Offer learning opportunities to managers and staff.
- Provide mentoring and coaching, team exercises and/or corporate training.

The problem with over-reliance on staff education as a change strategy is that it assumes that lack of knowledge is the only root cause, and does not tackle issues such as process improvements. Hospital leaders who do want to use staff education as a change idea may wish to elaborate on the implementation and monitoring of the education initiative to ensure that they answer the following questions:

- Do staff attend?
- Even if they attend, do they absorb information?
- Even if they absorb information, will they carry it out?
- Even if they learn about a skill, do we know for sure they can perform the skill correctly?
- Even if they carry out the activity well, will they forget the skill over time?

The lack of breadth of change ideas in the 2011 QIPs may be due to the fact that, in the first year of this process:

- Hospitals were not certain about the ideal level of detail to include when describing the change ideas.
- Organizations may be accustomed to using education as the primary or only lever for change.
- Organizations may not be aware of the breadth of options available to them.

To encourage hospitals to include a broader range of change ideas in future plans, next year's QIP guidelines should ask hospitals to consider all the root causes and related change ideas in their plans, and to include some examples of comprehensive change plans that address all change concepts.

2. Root Cause Analysis Instead of Change Strategy

In some QIPs, hospitals did not specify any change ideas. Instead, they set out a plan to collect data, do a root cause analysis and then identify change ideas.

While it is good practice to identify root causes before specifying the change strategy, HQO recommends that this process be done before hospitals complete their QIPs. If this is not possible, then hospitals may consider specifying a target date for when specific change ideas will be put forward and commit to making them public at that time.

3. No Process Indicator or Target for Change Ideas

In many instances, hospitals identified a change idea but did not link it to a process indicator or target. It is important to make this link, because without these indicators or targets, an organization will have difficulty knowing whether a particular idea for improvement was implemented successfully. There may have been a number of reasons for this information gap, such as:

- Organizations were not clear about what was being requested.
- Hospitals may be unclear about the added value of measurement at this level.
- There are no clear standards or procedures for measuring adoption of the change idea.

To avoid this problem in the future, the next QIP guidelines should include more examples of possible process indicators and targets to measure the impact of change ideas, such as:

- Training/Skills:
  - percentage of staff that attend training (weakest)
  - percentage that achieve some certification
  - percentage that are observed to be implementing skills appropriately (strongest)

- Process improvements:
  - Audit process — report percentage of time process implemented, or implemented correctly the first time (e.g., first-time pass)
- Reminder systems:
  - percentage of time the reminder was actually used
- Patient engagement:
  - percentage of time patients, while undergoing care, understand care information when asked; consider gathering by mini-survey

Conclusion

This Analysis for Learning has highlighted the excellent work that 152 hospitals put into creating their first Quality Improvement Plans, as required under the *Excellent Care for All Act*, and identified examples of plans that stood out for having a clear vision and strategy for improvement. Many of the QIPs submitted by hospitals showed visions for improvement that will serve as templates for the next round of QIPs, slated to begin at the end of November 2011.

Three key messages came out of this year's process: the importance of setting the right number of priorities, setting clear stretch targets and creating a broad range of change ideas. Although a number of hospitals identified bold aims and innovative ideas for change, other hospitals did not set clear priorities or goals, achievable stretch targets or comprehensive change ideas. There are a number of reasons that their success was limited, and our analysis of this first-year effort identifies areas for improvement in the next phase of QIP planning that should help hospitals develop more thorough plans.

Congratulations to all of the hospitals that took part in this inaugural round of quality improvement plans. Their hard work and commitment to strengthening the quality of care in Ontario will be an important tool for hospitals involved in building the next set of QIPs.

Appendix I: Suggested Resources

C. Difficile Infection

IHI: Improvement Map — Antibiotic Stewardship
http://app.ihi.org/imap/tool/#Process=584d97d9-d698-478f-8a10-ee60362d7462. Accessed October 2011.

IHI: Improvement Map — Infection Prevention
http://app.ihi.org/imap/tool/#Process=33ad5993-cbdb-47c1-8013-35c6d4f1f9d7. Accessed October 2011.

OAHPP: Routine Practices and Additional Precautions In All Health Care Settings (revised July 2011)
http://www.oahpp.ca/resources/documents/pidac/RPAP%20-%20PHO%20template%20-%20FINAL%20-%202011-07-26.pdf. Accessed October 2011.

OAHPP: Testing, Surveillance and Management of Clostridium difficile in all Health Care Settings
http://www.oahpp.ca/resources/pidac-knowledge/best-practice-manuals/testing-surveillance-and-management-of-clostridium-difficile.html. Accessed October 2011.

OAHPP: Best Practices for Environmental Cleaning for Prevention and Control of Infections in all Health Care Settings
http://www.oahpp.ca/resources/pidac-knowledge/best-practice-manuals/environmental-cleaning-for-prevention-and-control-of-infections.html. Accessed October 2011.

Ventilator-Associated Pneumonia

IHI: Improvement Map — Ventilator Bundle
http://app.ihi.org/imap/tool/#Process=0f029d21-a307-4663-9d64-07da43f3f857. Accessed October 2011.

Safer Healthcare Now! Ventilator-Associated Pneunomia
http://www.saferhealthcarenow.ca/EN/Interventions/VAP/Pages/default.aspx. Accessed October 2011.

Hand Hygiene

IHI: Improvement Map – Hand Hygiene
http://app.ihi.org/imap/tool/#Process=f0e22d9b-e08d-4d96-9f5b-181fe63743d8. Accessed October 2011.

MOHLTC: Just Clean Your Hands
http://www.health.gov.on.ca/en/ms/handhygiene. Accessed October 2011.

OHA: Hand Hygiene
http://www.oha.com/Services/PatientSafety/Pages/HandHygiene.aspx. Accessed October 2011.

Central Line Infection

IHI: Improvement Map — Central Line Bundle
http://www.ihi.org/imap/tool/#Process=e876565d-fd43-42ce-8340-8643b7e675c7. Accessed October 2011.

Safer Healthcare Now! Central Line-Associated Infection
http://www.saferhealthcarenow.ca/EN/Interventions/CLI/Documents/CLI One Pager.pdf. Accessed October 2011.

Pressure Ulcer Prevention

Canadian Association of Wound Care
http://www.cawc.net. Accessed October 2011.

IHI: Improvement Map — Pressure Ulcer Prevention
http://app.ihi.org/imap/tool/#Process=cbe9c419-f6ae-49ed-8bb5-5d17844796e2. Accessed October 2011.

Pressure Ulcer Awareness and Prevention
http://www.preventpressureulcers.ca/professional/pro.html. Accessed October 2011.

RNAO: Best Practice Guideline: Risk Assessment & Prevention of Pressure Ulcers
http://ltctoolkit.rnao.ca/sites/ltc/files/resources/pressure_ulcer/BPStandards/RNAOPUBPG.pdf.
Accessed October 2011.

Falls Prevention

IHI: Improvement Map — Falls Prevention
http://app.ihi.org/imap/tool/#Process=3c061d92-9c22-42bb-af04-26ae02ed191c. Accessed October 2011.

RNAO: Best Practices Toolkit
http://ltctoolkit.rnao.ca. Accessed October 2011.

Safer Healthcare Now! Reducing Falls and Injury from Fall
http://www.saferhealthcarenow.ca/EN/Interventions/Falls/Pages/default.aspx. Accessed October 2011.

General Safety

Canadian Patient Safety Institute: Effective Governance for Quality and Patient Safety: A Toolkit for Healthcare Board Members and Senior Leaders
http://www.patientsafetyinstitute.ca/english/toolsresources/governancepatientsafety/pages/default.aspx.
Accessed October 2011.

Health Quality Ontario: Quality Monitor
http://www.hqontario.ca/pdfs/2011_report_-_english.pdf. Accessed October 2011.

OHA: Quality and Patient Safety Governance Toolkit
http://www.oha.com/leadership/gce/QPSGT/Pages/Default.aspx. Accessed October 2011.

Readmission Within 30 Days for Selected CMGs to Any Facility

Agency for Healthcare Research and Quality: Re-engineered discharge project dramatically reduces return trips to the hospital
http://www.ahrq.gov/research/mar11/0311RA1.htm. Accessed October 2011.

CMAJ: The LACE Index: prediction of unplanned readmissions
http://www.cmaj.ca/content/182/6/551.full#ref-10institute.nhs.uk. Accessed October 2011.

IHI: STate Action on Avoidable Rehospitalizations (STAAR)
http://www.ihi.org/offerings/initiatives/STAAR/Pages/default.aspx. Accessed October 2011.

Total Margin (Consolidated)

IHI: Increasing Efficiency, Enhancing Value in Healthcare
http://www.ihi.org/knowledge/Pages/IHIWhitePapers/IncreasingEfficiencyEnhancingValueinHealthCareWhitePaper.aspx. Accessed October 2011.

ER Wait Times

IHI: Improvement Map — Patient Flow for Efficient & Safety
http://app.ihi.org/imap/tool/#Process=70a70f96-a47c-444e-bae0-981d8aabfc39. Accessed October 2011.

IHI: Real Time Demand/Capacity Management to Improve Flow
http://www.ihi.org/knowledge/Pages/Changes/RealTimeDemandCapacityManagement.aspx. Accessed October 2011.

IHI: Shortening Waiting Times: Six Principles for Improved Access
http://www.ihi.org/knowledge/pages/improvementstories/shorteningwaitingtimessixprinciplesforimprovedaccess.aspx. Accessed October 2011.

Patient Flow Toolkit
www.patientflowtoolkit.ca. Accessed October 2011.

Patient Experience

IHI: Advancing the Practice of Patient- and Family-Centered care: How to Get Started
http://www.ihi.org/knowledge/pages/publications/advancingthepracticepfcchowtogetstarted.aspx. Accessed October 2011.

Institute for Patient- and Family-Centered Care
http://www.ipfcc.org/tools/downloads.html. Accessed October 2011.

NHS Institute for Innovation and Improvement: Experience-Based Design
http://www.institute.nhs.uk/quality_and_value/introduction/experience_based_design.html. Accessed October 2011.

OHA: Leading Practices in Emergency Department Patient Experience
http://www.oha.com/KnowledgeCentre/Library/Documents/Leading%20Practices%20in%20Emergency%20Department%20Patient%20Experience.pdf. Accessed October 2011.

Picker Institute
http://pickerinstitute.org. Accessed October 2011.

RNAO: Best Practice Guidelines for Assessment and Management of Pain
http://www.rnao.org/Page.asp?PageID=924&ContentID=720. Accessed October 2011.

RNAO: Best Practice Guidelines for Client Centred Care
http://www.rnao.org/Page.asp?PageID=924&ContentID=798. Accessed October 2011.

RNAO: Best Practice Toolkit for Pain
http://ltctoolkit.rnao.ca/resources/pain#Best-PracticesStandards. Accessed October 2011.

Appendix II: Technical Report

INTRODUCTION

The purpose of the Technical Report is to provide public access to details of the process used to generate indicator results. This information will be useful to others interested in replicating the indicators presented. Further details on the process and methods used to select the indicators on the HQO website can be obtained from HQO.

DATA SOURCES

The indicator results presented were provided to HQO by several sources, including the Canadian Institute for Health Information (CIHI) and the Ministry of Health and Long-Term Care (MOHLTC).

Discharge Abstract Databases (DAD)

DAD is a data-collection tool developed by CIHI to collect information on patients treated in acute care hospitals. Each time an individual is discharged from an acute care hospital, the hospital submits to CIHI an electronic record that contains patient demographic, diagnostic and treatment data.

National Ambulatory Care Reporting System (NACRS)

NACRS is a data collection tool developed by CIHI to capture information on patient visits to emergency departments. The NACRS data used in this report are collected on a routine basis by all emergency departments (ED) in Ontario.

Continuing Care Reporting System (CCRS)

CCRS is a data collection tool developed by CIHI to capture demographic, clinical, functional and resource utilization information on individuals receiving continuing care services in hospitals or long-term care homes in Canada. Participating organizations also provide information on facility characteristics to support comparative reporting and benchmarking.

Critical Care Information System (CCIS)

CCIS is a data collection tool developed by MOHLTC to collect information on admitted ICU patients, interventions performed to address care needs and utilization of critical care response teams.

Web-Enabled Reporting System (WERS)

WERS is an easy-to-use online tool developed by MOHLTC for the complete preparation and tracking of reports prepared by hospitals and other institutional users.

Ontario Healthcare Reporting Standards (OHRS)

OHRS databases developed by MOHLTC provide the only integrated source of data on the actual financial and operational activities of hospitals in the province.

NRC Picker/HCAPHS

NRC Picker/HCAPHS provides measurement solutions tailored to hospitals, clinics or home health agencies and partners to create a patient-centred focus in the care provided to patients.

OHA CLASSIFICATIONS

The following is a brief description of the five hospital types used in this report, as defined by MOHLTC:

1. Acute Teaching Hospitals

Acute teaching hospitals are defined as those acute and pediatric hospitals that have membership in the Council of Academic Hospitals of Ontario (CAHO). Member hospitals provide highly complex patient care, are affiliated with a medical or health sciences school and have significant research activity and postgraduate training. (Source: http://www.hospitalreport.ca/downloads/2007/AC/acute_report_2007.pdf.)

2. Large Community Hospitals

Large community hospitals encompass those hospitals not defined as small or teaching. (Source: http://www.hospitalreport.ca/downloads/2007/AC/acute_report_2007.pdf.)

3. Small Community Hospitals

Small community hospitals are defined according to the guidelines set by the former Joint Policy and Planning Committee (JPPC). In general, these hospitals are a single community provider, and the total inpatient acute, CCC and day surgery weighted cases are under 2,700, based on 2005-2006 data. (Source: http://www.hospitalreport.ca/downloads/2007/AC/acute_report_2007.pdf.)

4. Complex Continuing Care (CCC) Hospitals and Rehabilitation Hospitals

Complex continuing care hospitals generally meet the following criteria: (a) do not have acute care patients; (b) report statistical, clinical and financial data separately (from other hospitals or facilities) to MOHLTC; (c) have their own chief executive officer (CEO) and Board; and (d) are physically separate buildings. (Source: http://www.hospitalreport.ca/downloads/2007/CCC/ccc_report_2007.pdf.)

Rehabilitation hospitals provide rehabilitation in publicly funded designated adult rehabilitation beds, either in free-standing specialty inpatient rehabilitation hospitals or in designated beds or units designated for rehabilitation purposes that are part of a general hospital. It does not include rehabilitation in acute care, outpatient settings or home-based settings. The facilities or units care for clients with a primary health condition that is physical in nature — for example, stroke, orthopedic conditions, brain dysfunction, spinal cord dysfunction or amputation. (Source: http://www.hospitalreport.ca/downloads/2007/rehab/rehab_report_2007.pdf.)

5. Mental Health Hospitals

Mental health hospitals serve individuals with more complex treatment and behavioural management needs, who typically require a longer length of stay. Specialty hospitals include both dedicated mental health hospitals and mixed-service hospitals (that also provide acute care for mental health and other conditions). Many specialty facilities are former provincial psychiatric hospitals. (Source: http://www.hospitalreport.ca/downloads/2007/MH/2007_MH_techman.pdf.)

TABLE 1: TECHNICAL INFORMATION ON INDICATOR DEFINITIONS

Attribute	Theme	Indicator	Numerator	Denominator	Data Source
Safety	Hospital infections	*C. difficile* infection (CDI) rate per 1,000 patient days Overall Acute teaching Large community Small community Chronic/ rehabilitation Mental health	**Inclusion:** The CDI count is the number of new nosocomial cases of CDI by month **Exclusion:** children under one years old	**Inclusion:** The denominator, patient days data, should be sourced from the hospital's daily bed census data **Exclusion:** children under one years old	MOHLTC

TABLE 1: TECHNICAL INFORMATION ON INDICATOR DEFINITIONS (CONTINUED)

Attribute	Theme	Indicator	Numerator	Denominator	Data Source
Safety	Hospital infections	Ventilator-associated pneumonia (VAP) rate per 1,000 ventilator days Overall Acute teaching Large community Small community Chronic/ rehabilitation Mental health	**Inclusion:** The total number of newly diagnosed VAP cases in the ICU after at least 48 hours of mechanical ventilation **Exclusion:** Any patient with a recorded incident of VAP within the first two calendar days of admission will be excluded	The number of ventilator days in that month Ventilator days are the number of days spent on a ventilator for all patients in the ICU 18 years and older	MOHLTC
Safety	Hospital infections	Hand hygiene compliance before patient contact Overall Acute teaching Large community Small community Chronic/ rehabilitation Mental health	Number of times hand hygiene performed before initial patient/patient environment contact by hospital type	Number of observed hand hygiene indications before initial patient/patient environment contact by hospital type	MOHLTC
Safety	Hospital infections	Rate of central line infections (CLIs) per 1,000 central line days Overall Acute teaching Large community Small community Chronic/ rehabilitation Mental health	**Inclusion:** Total number of newly diagnosed CLI cases in the ICU after at least 48 hours of receiving a central line **Exclusion:** Any patient admitted to the unit with an existing CLI	The number of central line days in that month, multiplied by 1,000. Central line days are the total number of days a central line was used in ICU patients 18 years and older	MOHLTC

TABLE 1: TECHNICAL INFORMATION ON INDICATOR DEFINITIONS (CONTINUED)

Attribute	Theme	Indicator	Numerator	Denominator	Data Source
Safety	Avoiding harm in long-term care	Percentage of complex continuing care residents with new pressure ulcer in the last three months (stage 2 or higher) Overall Acute teaching Large community Small community Chronic/ rehabilitation Mental health	Include if any of the following apply: • M1b>0 on the target assessment • M1c>0 on the target assessment • M1d>0 on the target assessment	Include all assessments for chronic patients in fiscal 2006-07 that meet general inclusion/ exclusion criteria for incidence indicators. Assessment inclusion criteria for all chronic-stay incidence indicators. The assessment is for a chronic-stay patient. There is a prior assessment that was completed 45 to 165 days earlier (with which to compare against). Assessment exclusion criteria for all chronic stay incidence indicators. The assessment is more than 165 days after the previous assessment. The assessment is less than 45 days after the previous assessment. and if: • M1b=0 and M1c=0 and M1d=0 on prior assessment. EXCLUDE if any of the following apply: • M1b>0 on prior assessment • M1c>0 on prior assessment • M1d>0 on prior assessment	Continuing care reporting system (CCRS)

TABLE 1: TECHNICAL INFORMATION ON INDICATOR DEFINITIONS (CONTINUED)

Attribute	Theme	Indicator	Numerator	Denominator	Data Source
				• M1b, M1c or M1d is missing on the prior assessment • M1b, M1c or M1d is missing on the target assessment	
Safety		Percentage of complex continuing care residents who do not have a recent prior history of falling, but fell in the last 90 days Overall Acute teaching Large community Small community Chronic/ rehabilitation Mental health	Include if J4a=1 on the target assessment	Include all assessments for chronic patients in fiscal 2006-07 that meet general inclusion/ exclusion criteria for incidence indicators. Assessment inclusion criteria for all chronic stay incidence indicators. The assessment is for a chronic stay patient. There is a prior assessment that was completed 45 to 165 days earlier (with which to compare against). Assessment exclusion criteria for all chronic stay incidence indicators. The assessment is more than 165 days after the previous assessment. The assessment is less than 45 days after the previous assessment and if: J4a=0 on prior assessment.	CCRS

TABLE 1: TECHNICAL INFORMATION ON INDICATOR DEFINITIONS (CONTINUED)

Attribute	Theme	Indicator	Numerator	Denominator	Data Source
				Exclude if any of the following apply: • J4a=1 on prior assessment • J4a is missing on the target assessment • J4a is missing on the prior assessment	
Effectiveness	Mortality in hospitals	HSMR Overall Acute teaching Large community Small community Chronic/ rehabilitation Mental health	Observed deaths, or actual number of in-hospital deaths that occurred in a hospital or region	Expected deaths, or number of deaths that would have occurred in a hospital or region had the mortality of these patients been the same as the mortality of similar patients across the country, based on the reference year. Inclusion criteria: 1. Discharge between April 1 of a given year and March 31 of the following year 2. Admission to an acute care institution 3. Discharge with diagnosis group of interest (i.e., one of the diagnosis groups that account for approximately 80% of in-hospital deaths) 4. Age at admission between 0 and 120 years 5. Sex recorded as male or female	Discharge Abstract Database (DAD)

TABLE 1: TECHNICAL INFORMATION ON INDICATOR DEFINITIONS (CONTINUED)

Attribute	Theme	Indicator	Numerator	Denominator	Data Source
				6. Length of stay up to 365 consecutive days 7. Admission category is elective or emergent/urgent 8. Canadian resident Exclusion criteria: 1. Cadavers 2. Stillborns 3. Sign-outs (that is, discharged against medical advice) 4. Neonates (age of admission less than or equal to 28 days) 5. Records with brain death as most responsible diagnosis code 6. Records with palliative care as most responsible diagnosis code	
Effectiveness		Readmission within 30 days for selected CMGs to any facility Overall Acute teaching Large community Small community Chronic/ rehabilitation Mental health	The sum of readmissions for all index cases in a calendar year	**Inclusion:** Select all discharges among the selected CMGs with discharge dates for period in question and age restrictions as described in inclusions section. Include only typical and outlier cases (based on DAD RIW exclusion indicator) among the index cases. Acute inpatients in the specified CMGs, age restrictions are	DAD

TABLE 1: TECHNICAL INFORMATION ON INDICATOR DEFINITIONS (CONTINUED)

Attribute	Theme	Indicator	Numerator	Denominator	Data Source
				cohort-specific. The readmission hospitalization is deemed non-elective or unplanned if: a) the admission date is within 30 days of the index case discharge date b) the DAD field "admission category" is urgent **Exclusion:** Exclude deaths, transfers, patient sign-outs against medical advice; records with missing valid data on discharge/admission date, health number, age, gender.	
Effectiveness	Right service in right place	Percentage ALC days Overall Acute teaching Large community Small community Chronic/rehabilitation Mental health	Total bed days designated as alternate level of care	Inclusion: Total inpatient days in the year Exclusion: Invalid or missing discharge date from hospital Newborns Stillborns	CIHI-DAD
Effectiveness	Cost per service delivered	Total margin (consolidated) Overall Acute teaching Large community Small community Chronic/rehabilitation Mental health	Percentage by which total corporate (consolidated) revenues exceed or fall short of total corporate (consolidated) expense, excluding the impact of facility amortization, in a given year		MOHLTC

TABLE 1: TECHNICAL INFORMATION ON INDICATOR DEFINITIONS (CONTINUED)

Attribute	Theme	Indicator	Numerator	Denominator	Data Source
Access		ER wait times: 90th percentile ER length of stay for admitted patients Overall Acute teaching Large community Small community Chronic/ rehabilitation Mental health	90th percentile ER length of stay for admitted patients (ER length of stay is defined as the time from triage to registration, whichever comes first, to the time the patient leaves the ER)		National Ambulatory Care Reporting System (NACRS)
Access		ER wait times: 90th percentile ER length of stay for complex conditions Overall	90th percentile ER length of stay for complex conditions/conditions requiring more time for diagnosis, treatment or hospital bed admission (refers to the maximum amount of time 9 out of 10 patients with complex conditions requiring more time for diagnosis, treatment or hospital bed admission spent within the ER from the time they register to the time they leave the ER)		NACRS
Patient-Centred		Would you recommend this hospital to your friends and family? Overall Acute teaching Large community Small community Chronic/ rehabilitation Mental health	Number of respondents who responded, "Yes, definitely" (NRC Picker)	Number of respondents who registered any response to this question (do not include non-respondents)	NRC Picker/ HCAPHS

TABLE 2: BREAKDOWN OF ALL HOSPITALS AND EMERGENCY DEPARTMENTS (EDs)

	Acute Teaching	CCC and Rehab	Large Community	Mental Health	Small Community	Overall
ALL	16	16	63	4	53	152
ED	12	1	59	0	52	124

TABLE 3: FREQUENCY WITH WHICH A TOPIC WAS CHOSEN AS PRIORITY 1, FOR DIFFERENT TYPES OF HOSPITALS

Priority 1	Acute Teaching	CCC and Rehab	Large Community	Mental Health	Small Community	Province
CDI rate per 1,000 patient days	4	2	10	0	2	18
ER wait times for admitted patients	6	1	36	0	9	52
ER wait times for complex conditions	0	0	4	0	2	6
Falls	0	6	11	0	4	21
Hand hygiene compliance before patient contact	10	10	31	1	25	77
HSMR	3	1	8	0	0	12
NRC Picker/HCAPHS or in-house survey (if available)	4	5	24	2	18	53
Percentage ALC days	3	2	22	0	8	35
Pressure ulcers	0	7	6	0	2	15
Rate of central line blood stream infections per 1,000 central line days	2	0	3	0	0	5
Readmission within 30 days for selected CMGs to any facility	3	1	12	0	8	24
Total margin (consolidated)	2	5	31	0	10	48
VAP rate per 1,000 ventilator days	3	0	3	0	1	7

TABLE 4: FREQUENCY WITH WHICH A TOPIC WAS CHOSEN AS ANY PRIORITY (1, 2 OR 3), FOR DIFFERENT TYPES OF HOSPITALS

Any Priority	Acute Teaching	CCC and Rehab	Large Community	Mental Health	Small Community	Province
CDI rate per 1,000 patient days	8	11	32	1	20	72
ER wait times for admitted patients	8	2	52	1	30	93
ER wait times for complex conditions	2	0	10	0	6	18
Falls	1	11	23	0	16	51
Hand hygiene compliance before patient contact	12	14	48	2	34	110
HSMR	7	1	34	0	3	45
NRC Picker/HCAPHS or in-house survey (if available)	12	16	47	4	35	114
Percentage ALC days	10	3	50	2	36	101
Pressure ulcers	2	12	18	1	15	48
Rate of central line blood stream infections per 1,000 central line days	7	1	27	0	4	39
Readmission within 30 days for selected CMGs to any facility	11	1	45	0	27	84
Total margin (consolidated)	12	13	51	3	37	116
VAP rate per 1,000 ventilator days	7	1	26	0	3	37

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