



Evaluation of IC 5:

Improving Continence Care in Complex Continuing Care

Report for the Ontario Women's Health Council

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In addition to the participating hospital teams, many organizations and individuals contributed to the success of the IC 5 Collaborative Project. We would especially like to recognize the following individuals/organizations that provided funding support, and/or shared their expertise, time and energy with the project.

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EXECUTIVE SUMMARY

Urinary incontinence (UI) is a common problem that affects women across all age ranges. Studies have shown that women with UI report lower quality of life and are more likely to be depressed. Women are at great risk of developing UI throughout their lifetime with events such as child birth, menopause or aging having an impact on their ability to maintain control. It is said that *one in four* women versus *one in ten* men will experience problems with bladder control at some point in their lives. Despite 20 years of research, the high prevalence rate of UI remains unchanged due to many barriers including:

- *Misperceptions about UI and aging;*
- *Lack of use of clinical practice guidelines pertaining to UI and*
- *Organizational cultures that do not support improvement in this area*

The *IC 5 Collaborative Project* (IC 5: Improving Continence Care in Complex Continuing Care) was the first multi-hospital quality improvement project conducted by the Hospital Report Research Collaborative (HRRC) aimed at the Complex Continuing Care (CCC) sector. The overall *aim* of IC 5 was to improve continence care processes, practices and outcomes for patients in CCC programs across Ontario. A coincident aim of IC 5 was to develop knowledge and skills for making improvement for all participants.

In addition, the IC 5 Project Team conducted research to evaluate the uptake of IC 5 and its impact on care processes, systems and outcomes at participating hospitals. Quality Improvement Collaboratives such as the *Breakthrough Series* are increasingly being used in many countries to achieve rapid improvements in healthcare. The evidence to date is that some collaboratives have stimulated improvements in patient care and organizational performance, however, despite their face validity; there is little independent evidence that collaboratives are more cost effective than other quality improvement approaches and little knowledge about how they could be made more effective.¹ By evaluating IC 5, our intention was to contribute to this field of knowledge.

RESEARCH METHODOLOGY FOR THE EVALUATION OF IC 5

The evaluation of IC 5 was built around a pre-post design with a comparison group. In other words, the organizational, unit-level and individual patient care activity was measured before and after the introduction of IC 5 at each of the participating hospital sites to determine if there were changes made and whether the changes led to improvement.. In addition, data was collected from a group of hospitals that did not participate in IC 5 to determine whether or not there was a difference in the level of continence care activity for IC 5 participants versus non-IC 5 participants.

The research questions for the *Evaluation of IC 5* included the following:

¹ "Quality collaboratives: lessons from research"; Ovretveit et al; Qual Saf Health Care 2002; 11: 345-351

1. What was the degree of uptake and implementation of continence care interventions?
2. How effective was IC 5 in stimulating change and improvement in processes and outcomes of continence care?
3. What were the factors/determinants associated with success for IC 5 teams?
4. What were the costs associated with participating in IC 5?

For research question #4, the IC 5 Project Team reached the conclusion that measuring the costs associated for each participant required a sophisticated level of analysis that was beyond the scope of the project. Tracking costs associated with each team's activity required an inordinate amount of detail that was not feasible for the IC 5 Project Team to collect within the parameters of this particular initiative.

For the remaining research questions, survey methods such as the Knowledge, Attitudes & Beliefs about Continence Care (KAB) Survey, IC 5 Team Leaders questionnaire and a chart audit.were used.

FINDINGS

Overall, IC 5 helped teams to make changes to continence care practices within their settings. By providing the clinical and improvement knowledge, IC 5 was able to stimulate improvement in both process and outcomes as demonstrated by improved KAB scores and the number of assessments and treatment options implemented across the hospitals that participated in the IC 5 Collaborative Project.

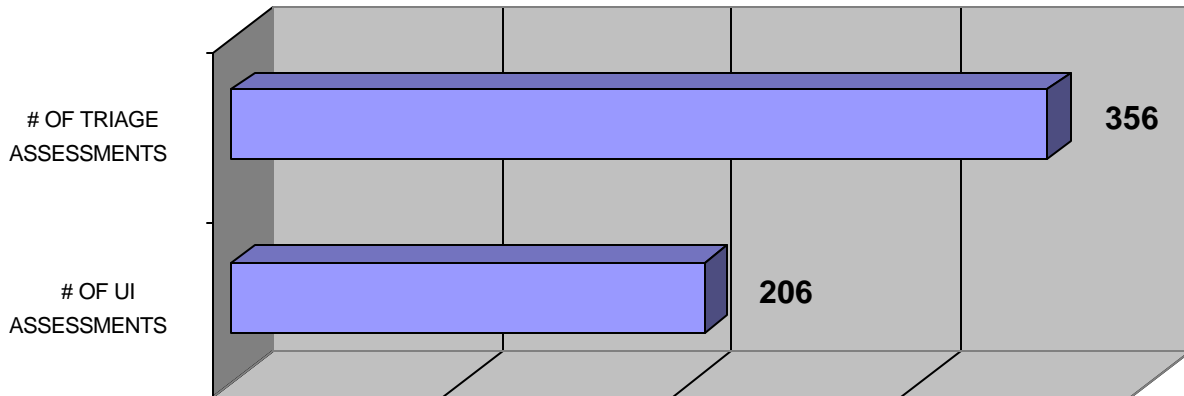
1) What was the degree of uptake and implementation of continence care interventions?

As a result of IC 5:

- **92%** of the participating hospitals have written guidelines/protocols/procedures about management and treatment of UI
- **83%** of the participating hospitals regularly promote urinary continence for their patients
- **100%** of the participating hospitals have implemented formal or informal education sessions related to UI for their staff

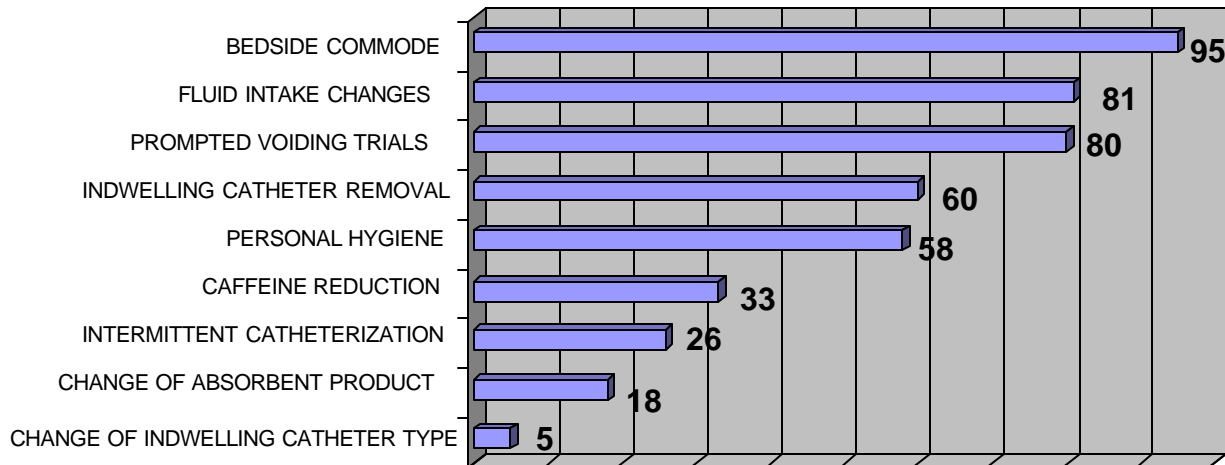
With regards to practice changes related to continence care, the following two figures depict the number of assessments and management or treatment options trialed for the 12 participating hospital teams as reported by the IC 5 Team Leaders.

**# of UI assessments completed from
December 2004 – September 2005
(Cumulative total from 12 hospitals)**



Note: "Triage" assessment tools wholly associated with UI were independently developed by 3 of the 12 hospitals for their internal use. The hospitals stated that the triage tool was necessary to accommodate the high-level of admissions in their CCC units. In addition, the tool allowed them to ensure that every new patient was at least screened for UI whereas with previous practice, this critical process may have been omitted.

**# of Treatment & Management Options for UI trialed
from December 2004 – September 2005
(Cumulative total for 12 hospitals)**



2) How effective was IC 5 in stimulating change and improvement in processes and outcomes of continence care?

Whereas the first research question for the evaluation of IC 5 focused almost exclusively on degree of uptake for each of the participating hospitals, the purpose of the second research question was to determine if *changes made by hospital teams lead to improvement*.

Since staff knowledge and attitudes about the assessment and management of UI for patients are significant factors affecting the success of improving UI status for patients, improving both domains are critical. The impact of IC 5 on *Knowledge, Attitudes and Beliefs about UI* are demonstrated in the following table:

Impact of IC 5 on Knowledge, Attitudes & Belief about UI

Proportion of participants who selected correct responses for each domain

Timeframe	Knowledge	Attitudes/Beliefs
Pre-IC 5 (Jan 05)	65.4%	80.7%
Post-IC 5 (Sept 05)	74.2%	83.6%
Change	+ 8.8%	+2.9%

Note: For both dimensions (Knowledge versus Attitudes/Beliefs), the increase in scores is statistically significant.

The results of the *Patient Chart Reviews* suggest that IC 5 had an impact on not only the number of assessments completed at the participating hospital sites, but on the depth (and thus quality) of the UI assessment itself which arguably should have a direct link to improving patient outcomes.

Impact of IC 5 on # of UI assessments completed

Proportion of patients who had a UI assessment completed since admission

Timeframe	Participating Hospitals	Comparator Hospitals
Pre-IC 5 (<Dec 1 2004)	80%	55%
Post-IC 5 (>Sept 30 2005)	87%	62%
Change	+7%	+7%

Note: For Participating hospitals only, the increase in scores is statistically significant.

Impact of IC 5 on DEPTH of UI assessments completed

Proportion of patients who had >7 assessment criteria related to UI completed

Timeframe	Participating Hospitals	Comparator Hospitals
Pre-IC 5 (<Dec 1 2004)	9%	0%
Post-IC 5 (>Sept 30 2005)	24%	0%
Change	+15%	0%

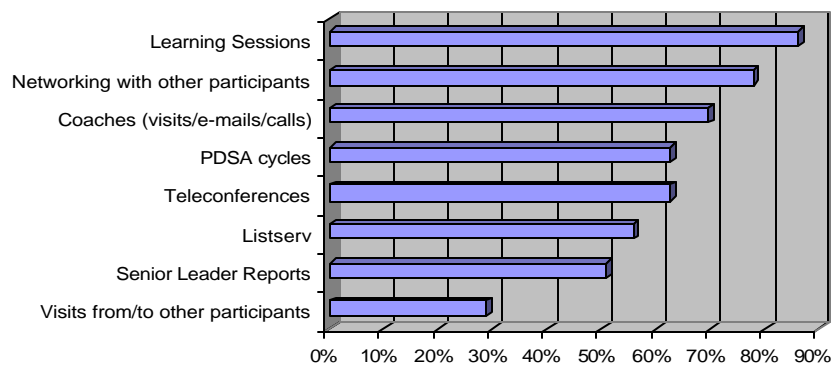
Note: For Participating hospitals only, the increase in scores is statistically significant.

3) What were the factors/determinants associated with success for IC 5 teams?

The value placed on the *Learning Sessions* and *Networking* opportunities is abundantly clear based on the responses to one of the evaluation surveys for the study.

“To what extent did the following help your team in its work to improve continence care?”²

Proportion of participants who selected “A Fair Amount” or “A Great Deal” for each of the activities below:



Comments from various participants expressed appreciation for the quality improvement concepts and clinical model brought to their attention through IC 5 and the structure of the project that allowed them direct access to the expert faculty including Dr. Jennifer Skelly and Jim Handyside. The following are a sample of recurrent comments from the participants when asked “**In your opinion, what were the most important facilitators to your team’s work on the IC 5 Collaborative Project?**”

- “Working in collaboration with other similar facilities”
- “Availability of the coach”
- “Education material provided”
- “Support from IC 5 Collaborative”

When asked about the “obstacles” that participants encountered when trying to improve continence care within their facilities, most comments appeared to be related to organizational issues rather than the IC 5 initiative itself. The following sample of comments reflects the most consistent messages shared by participants when asked “**In your opinion, what were the most important obstacles to your team’s work on the IC 5 Collaborative Project?**”

² Data Source: Team Evaluation of IC 5 (RAND Instrument)

- *“Senior management not consistently supporting the project”*
- *“No committed time”*
- *“Resistance from staff”*
- *“Other priorities that were competing for time commitment of clinical staff...”*

Recommendations

The following is a summary of the key recommendations and next steps based on our experience with IC 5. The full report contains a series of detailed recommendations under each of the headings.

1) Recommendations for future QI Collaboratives

Based on the observations of the IC 5 Project Team coupled with feedback from the participating hospital teams, the following suggestions should help increase the success of a team’s participation in any future quality improvement collaborative effort.

- Ensure senior management is on-board
- Ensure appropriate team composition
- Ensure teams have measurable targets and submit regular reports
- Ensure teams make the leap to process changes versus patient-level changes

2) Recommendations for future research opportunities related to IC 5

For a project of this magnitude, it is important to understand what happened after IC 5 officially ended. Specifically:

- Did process improvements lead to better outcomes for patients?
- Were improvements associated with IC 5 sustained and spread?
- Did the experience of participating in IC 5 build better habits for change?

In addition, there exists an opportunity to examine the true costs associated with participating in a collaborative of this nature.

3) Recommendations for future work aimed at addressing UI

- Spread the tools, learnings and resources developed by the participants and expert faculty of IC 5 to other sectors in order to improve the processes and outcomes related UI for other patients

4) Recommendations for future work aimed at addressing Women’s Health Issues

- There are opportunities to build off the lessons learned from the IC 5 experience and apply these to other areas for Women’s Health that are ripe for improvement (i.e. A topic that is “ripe for improvement” would have the

following characteristics: evidence of effective interventions; real examples of how improvements have been made in practice; professionals feel it is important; subject is strategically important; ideas and suggestions about it can be applied in different types of settings.³⁾

- Ongoing investment in structured quality improvement initiatives such as IC 5 is strategically important given an increasing focus on system-level improvement in Ontario.

CONCLUSION

Improving continence care processes within organizations requires both *will* and *skill*. “*Will*” on part of the team members and more importantly, the senior leaders of the organization, to build and sustain the momentum for making improvement. “*Skill*” with regards to the improvement knowledge required to make change.

From our observations and in the views of the participants, it is evident that IC 5 helped teams to improve continence care practices within their settings. By providing the clinical and improvement knowledge, IC 5 was able to stimulate improvement in both process and hopefully in the long-term, the improved processes will lead to better patient outcomes.

The results and comments from the *Team Evaluation of IC 5 (RAND Instrument)* suggest that the determinants of success for teams that were able to accomplish more improvement activity in comparison with their peers is more attributable to the context within which the changes were made as opposed to the methodology itself. This conclusion is based upon the fact that the activities or interventions provided by the IC 5 Project Team were the same for all participating teams yet the depth and/or scope of activity varied by site. Supported by findings from previously run collaborative projects, the receptive contexts at the individual, team and organizational level play a significant role in determining both outcomes and experiences of initiatives such as IC 5.⁴

Based on the feedback from the participants and observations of the IC 5 Project Team, and further supported by evidence in the literature, we suggest that the following factors strongly determine the degree of success for the teams:

- Strategic importance of improving continence care in their organization
- Skills and enthusiasm of the day-to-day team leader
- Team dynamics of the improvement team
- Degree of support from management

To validate our findings, a qualitative study is currently being conducted by a researcher at the University of Toronto to gather further insights into the teams’ and coaches’ experiences with the project that could usefully inform future efforts to organize

³ Ovretveit

⁴ “Summary lessons from phase 1 of the Cancer Services Collaborative”; Robert et al; School of Public Policy; Health Services Management Centre; The University of Birmingham

improvement initiatives within organizations. The qualitative approach is based on in-depth interviews with multiple individuals in a select group of participant organizations as well as the three project coaches.

The challenge now for participants is to maintain the momentum from the project by ensuring the spread and sustainability of change concepts associated with better continence care practices. In addition, our hope is that the quality improvement techniques and processes taught to the participants will be applied to other areas within their organization and will help build significant improvements across all services.

NEXT STEPS - DISSEMINATION OF RESEARCH FINDINGS

Over the next few months, researchers at the University of Toronto will be using the evaluation results of IC 5 to develop academic papers for publication. The various topics will include:

Deliverable	Description
Continence care in Complex Continuing Care	Description of continence care issues and model for best practice in a CCC setting
IC 5 Case Studies	Descriptive paper on IC 5 including case studies from 4 different sites that includes information on their experience, challenges and success stories associated with IC 5
Organizational characteristics as correlates for teams' success/challenges in implementing changes and making improvements	Description of relationship between organizational/team characteristics and implementation of components of IC 5

Please note: The purpose of this report is to share the findings of our evaluation of IC 5. More information about the IC 5 Project including “The Model for Excellence in Continence Care” and improvement stories from the various hospitals is available in the “*IC 5: Improving Continence Care in Complex Continuing Care*” booklet that was produced for the IC 5 Quality Congress in November 2005.

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1. AIMS AND OBJECTIVES OF IC 5

The *IC 5 Collaborative Project* (IC 5: Improving Continence Care in Complex Continuing Care) was the first multi-hospital quality improvement project conducted by the Hospital Report Research Collaborative (HRRC) aimed at the Complex Continuing Care (CCC) sector. Applying the Institute for Healthcare Improvement's (IHI) *Breakthrough Series Collaborative Model*, IC 5 brought together 12 teams that worked together for ten months under the guidance of Faculty that included a Quality Improvement consultant and a Continence Care expert (refer to Appendix for list of participating hospital sites.) To support improvement, this method is based on enhancing an understanding and application of BOTH content knowledge and improvement knowledge. The overall aim of IC 5 was to improve continence care processes, practices and outcomes for patients in CCC programs across Ontario. A coincident aim of IC 5 was to develop knowledge and skills for making improvement for all participants.

In addition, the IC 5 Project Team conducted research to evaluate the impact of IC 5 on the hospital participants. Quality Improvement Collaboratives such as the *Breakthrough Series* are increasingly being used in many countries to achieve rapid improvements in healthcare. The evidence to date is that some collaboratives have stimulated improvements in patient care and organizational performance, however, despite their face validity, there is little independent evidence that collaboratives are more cost effective than other quality improvement approaches and little knowledge about how they could be made more effective.

The objectives of the research study included finding answers to the following questions:

1. What was the degree of uptake and implementation of continence care interventions?
2. How effective was IC 5 in stimulating change and improvement in processes and outcomes of continence care?
3. What were the factors/determinants associated with success for IC 5 teams?
4. What were the costs associated with participating in IC 5?

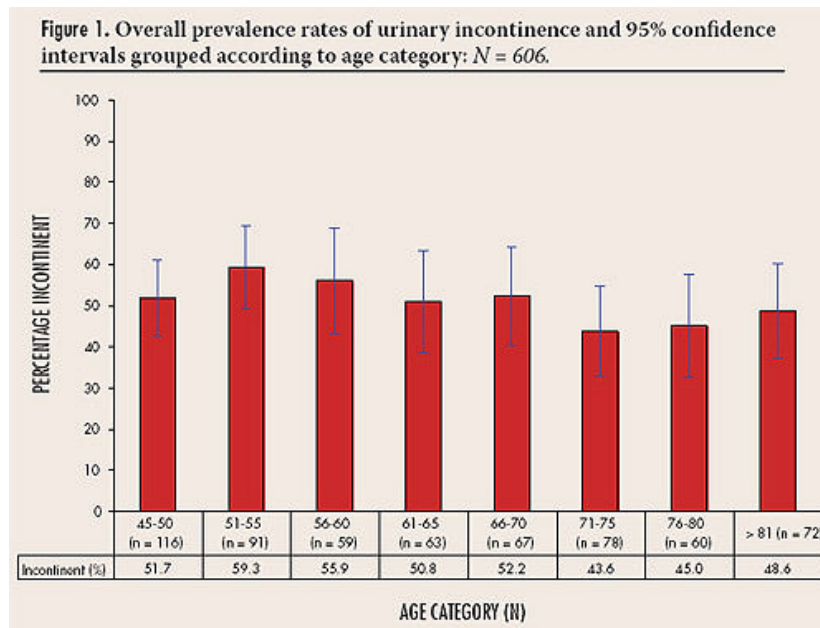
2. BACKGROUND

2.1 Contenance Care – Ripe for Improvement

One in four women will experience problems with bladder control at some point in their lives...

Urinary Incontinence (UI) is a demoralizing and costly problem with widespread human, social and financial implications. Those affected come from all age groups but seniors are at particularly high risk of developing incontinence and women are more likely to be affected than men. It is said that *one in four women* and *one in ten men* will experience problems with bladder control as some point in their lives. Women are at great risk of developing incontinence throughout their lifetime with

events such as child birth, menopause or aging having an impact on their ability to maintain control. Figure 1 depicts the prevalence rate of UI for women living in the community.⁵



For those who suffer from UI, fear of accidents and embarrassment often leads to social isolation. While UI is an important health issue, it is not being adequately addressed due to lack of knowledge about the condition and available treatment. Extrapolating from US figures, the total direct and indirect costs of UI in Canada are probably about \$2.6 billion /year.

During the last 15 years, much has been learned about UI and its management. Today, several excellent systematic literature reviews on UI treatment are available, providing

⁵ "Urinary incontinence: common problem among women over 45"; Swanson et al; Canadian Family Physician; Vol 51, January 2005

consensus by multidisciplinary experts on the quality of the evidence and recommendations for research and practice. Despite the substantial evidence base on UI management and the wide scale release of clinical practice guidelines such as the *Canadian Continence Guidelines for Continence Care*, many cases of UI continue to be under detected, under diagnosed and under treated across all practice settings.

Barriers to Improving Continence Care Practices and Outcomes

Although considerable research to control and manage UI exists, translation into practice remains challenging. Schnelle and colleagues⁶ have identified barriers that prevent the adoption of research-based protocols to control and manage UI. They include:

a) Knowledge and Attitudes of Staff about UI and Aging

Staff knowledge and attitudes about the assessment and management of UI for patients are significant factors affecting the success of improving UI status. Common staff misperceptions include accepting incontinence as a normal part of aging, decreasing fluid intake to address UI and feeling that providing incontinent care is more efficient than toileting patients.

It has been found that staff education is not totally effective in improving staff compliance with toileting protocols. Rather, the problem is in changing long-established beliefs and patterns of behaviour of nursing staff that care for patients who are incontinent. As part of any facility's quality improvement program for UI, staff knowledge and attitudes regarding UI should be assessed and monitored. All nursing staff should have opportunities to attend education programs to obtain the knowledge and skills needed to provide evidence-based UI assessments and interventions.⁷

b) Acceptance and Transfer of Evidence-Based Practice

A clear contributing cause of the high prevalence of UI in health care settings is the lack of awareness and use of evidence-based clinical practice guidelines for UI. Several research studies find that UI management practices are not consistent with advocated clinical practice guidelines and procedures. The first step in adopting clinical guidelines is recognizing their existence and subsequent value.

The literature recommends that every facility should have access to evidence-based clinical practice guidelines for UI. The guidelines should be used to update and revise policies and procedures for UI assessment and management and to develop standards for monitoring quality of care for UI; and they should be shared with staff through staff development programs.⁸

⁶ "Developing rehabilitative behavioural interventions for long-term care: technology transfer, acceptance and maintenance issues" ; Schnelle et al; 1998; 46:771-8

⁷ "Quality improvement and incontinence in long-term care", C. A. Mueller; Clinics in Geriatric Medicine, 20 (2004), 539-551

⁸ Ibid

However, much attention needs to also be focused on the transfer of UI guidelines into daily practice. The mere presence of guidelines does not necessarily guarantee that new practices will be adopted – appropriate and explicit support related to quality improvement methodologies (e.g. PDSA cycles) are critical to helping staff incorporate the evidence-based practice into their routine.

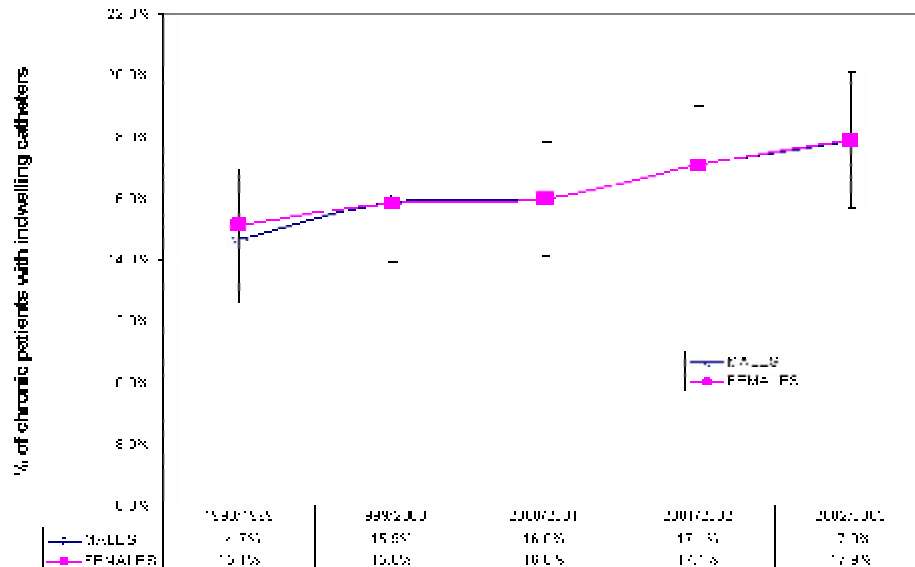
c) Organizational Culture

No continence program will succeed unless there is a commitment from the organization to improve and/or maintain continence. It is helpful to guide the facility in drafting a philosophy of continence care that incorporates an understanding that incontinence is not inevitable but can be treated successfully. Commitment means allocating resources and support to the continence program, not just verbal affirmation. The support of the senior leadership team, middle managers and physicians is essential to implementing a successful UI program.⁹

2.2 Current State of UI in Ontario’s CCC Hospitals

Findings from *Hospital Report 2003: Complex Continuing Care* (Figure 2) showed that there were variations in processes and outcomes in continence care across Ontario (e.g. utilization of indwelling catheters and worsening of UI) that supported continence care as a critical improvement opportunity. Based on the evidence of existing gaps between current and optimal practices and processes in continence care in CCC in Ontario, availability of existing tools such as guidelines and expertise such as continence care experts to inform improvements, and consultation with CCC leaders, it was agreed that continence care in CCC was ripe for improvement.

Figure 2: Findings from Hospital Report 2003: Complex Continuing Care



⁹ “Geriatric Incontinence: The Long-Term Care Challenge”, D. Thompson, Urologic Nursing, August 2004, Volume 24 Number 4

2.4 Quality Improvement Collaboratives – A Recipe for Improvement

Collaboratives are a quality-improvement approach based broadly on the principles of continuous quality improvement (CQI) and service redesign and involve a network of organizations working together for a fixed time period on a specific clinical area. There are different types of multi-organizational structured collaboratives which use quality methods. The most well-known is the *Breakthrough Series* model developed by the Institute for Healthcare Improvement (IHI) in 1996. Since then, this method of quality improvement has increasingly been used in the US, UK, Scandinavia and elsewhere with many hundreds of teams taking part.

Collaboratives vary in the subject chosen for improvement, the number of organizations involved, the resources available and the process through which teams work and in other respects. The following features are consistent with all type of quality improvement collaborative models:

- The participation of a number of multi-professional teams with a commitment to improving services within a specific subject area and to sharing with others how they made their improvements
- A focused clinical or administrative subject (e.g. reducing caesarean sections or wait times and delays etc.)
- Evidence of large variations in care, or of gaps between best and current practice
- Participants learn from clinical and scientific experts about the evidence for improvement and about change concepts and actions which have worked at other sites
- Experts in quality improvement and change processes introduce participating teams to quality methods
- Participants use PDSA cycles (The Model for Improvement) to plan, implement and evaluate many small changes in quick succession
- Teams set measurable targets and collect data to track their performance
- Participants meet at least two times for one to three days to learn methods, share their changes and results, share experiences and consider how to spread their innovations to other services and
- Between meetings, participants continue to exchange ideas and collaborative organizers provide extra support, sometimes through site visits, emails and teleconferences.

The virtues of the Breakthrough Series approach is the claim that by harnessing the collective wisdom of participants and an advisory panel of experts, this methodology provides the necessary clinical, technical and social support needed to help a health care organization make dramatic improvements.¹⁰

In the literature, the verdict varies on the true effectiveness of this type of quality improvement methodology and there is clear indication that more evaluations are

¹⁰ www.ihl.org

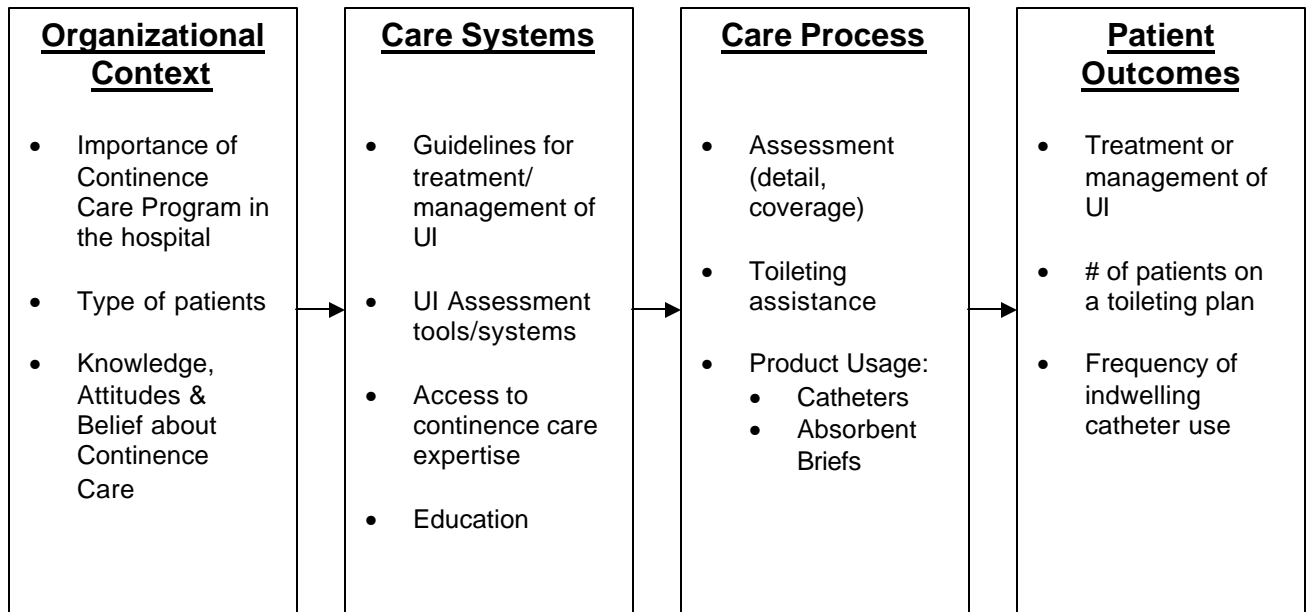
needed. Despite the appealing face validity, there are few controlled studies of its effectiveness.¹¹ Organizations that participated in prior collaborative projects had varied success in achieving collaborative goals. These mixed effects have been attributed to differences in external environment, organizational culture, available resources and abilities of organizations to implement interventions. The need remains for further investigation of the determinants of successful collaborative improvement.¹²

3. Research Methodology and Framework

The IC 5 Project Team conducted research to evaluate the impact of IC 5 on the hospital participants. The objectives included finding answers to the following questions:

1. What was the degree of uptake and implementation of continence care interventions?
2. How effective was IC 5 in stimulating change and improvement in processes and outcomes of continence care?
3. What were the factors/determinants associated with success for IC 5 teams?
4. What were the costs associated with participating in IC 5?

Research questions 1 and 2 served as a guide to identify a conceptual framework with regards to continence care in organizations as depicted in the following illustration:



The conceptual framework thus allowed the team to construct the appropriate data collection instruments for the study including the *Knowledge, Attitudes & Beliefs (KAB) about Continence Care Survey*, *Chart Audit Tool* and the *IC 5 Team Leaders*

¹¹ "An Evaluation of Collaborative Interventions to improve Chronic Illness Care", Evaluation Review, Vol. 28 No. 1, Cretin et al; February 2004 28 - 51

¹² Ibid

Questionnaire. (Further details about each of these data collection instruments are outlined in the section 3.1)

For research question #3, a RAND instrument entitled the *Team Evaluation of IC 5* along with the *IC 5 Team Leaders Questionnaire* were used as data sources to identify factors/determinants of success for each of the hospital teams.

Finally, for research question #4, as the project progressed, the IC 5 Project Team came to the conclusion that it would be extremely difficult to ascertain the exact costs for each hospital team to participate in IC 5 for various reasons. The most compelling one being that there was difficulty in coming to agreement on which “costs” should be included in such analysis. The expenditures associated with the Learning Sessions, Teleconferences and salaries of the IC 5 expert faculty are simple to track. However, attempting to calculate the time and costs associated with each hospital’s internal work is much more complex and would require many assumptions that would therefore minimize any confidence in the statement of costs associated with the project (e.g. Is meeting time at hospitals included? If so, what hourly rate is used to calculate staff time associated with the meeting? Is the time associated with PDSA cycles, Formal education sessions, huddles included? If so, how is the cost calculated for each activity?) In order to quantify the exact costs or time devoted to IC 5 by the various hospital teams and ultimately generate a conclusion about the true cost-effectiveness of IC 5 would require a sophisticated level analysis that was beyond the scope of this project.

Over the next few months, researchers at the University of Toronto will be using the evaluation results of IC 5 to develop academic papers for publication. The various topics will include:

Deliverable	Description
Continence care in Complex Continuing Care	Description of continence care issues and model for best practice in a CCC setting
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3.1 Data Collection Instruments & Sources

The evaluation was built around a *pre-post design with a comparison group*.¹³ Organizational, unit-level and individual patient care activity was monitored at each of the participating hospital sites before and after the introduction of IC 5 interventions to assess the change in level of activity. In addition, specific data was collected from 4 comparator hospital sites (i.e. hospitals that did not participate in IC 5) to help determine if there was a difference in outcomes and/or processes related to UI between hospitals that participated in IC 5 and those that did not.

The following provides further detail about the data collection instruments and sources that were used to answer the research questions for this study:

a) Knowledge, Attitudes & Beliefs (KAB) about Continence Care Survey

As its' title implies, the purpose of this survey was to gauge the knowledge, attitudes and beliefs of staff in relation to continence care for patients. This survey was distributed at two different times, once at the beginning of the project and once again at the end. Team Leaders at each of the participating hospitals were asked to distribute the surveys to as many staff as possible on each of the pilot units.

b) Team Evaluation of IC 5 (RAND Instrument)¹⁴

This particular instrument asked the core team members from each of the participating hospitals to assess the impact of certain activities related to the IC 5 Collaborative such as the Learning Sessions, Listserv Discussions, Teleconferences etc. In addition, the participants were asked to list the most important *obstacles* and *facilitators* in relation to working on the IC 5 Project within their own organizations.

c) Patient Chart Reviews

Near the end of the project, a sample of retrospective chart reviews were conducted at both participating and comparator hospital sites. The purpose of the chart reviews was to assess the uptake of IC 5 interventions before and after participation in the collaborative to ultimately determine if the project had any impact for participating hospitals. In addition, the same chart review instrument was used at the comparator sites to help determine if there was a possibility that activity had changed at their facilities even though they did not participate in the collaborative.

A chart audit tool developed by the Royal College of Physicians (London, England) was slightly modified for the purposes of the IC 5 evaluation. After

¹³ Cook and Campbell, 1979

¹⁴ RAND

consultation with the Continence Advisory Group for IC 5, the tool was trialed at one of the participating hospital sites and revised before being used for the remainder of the hospital sites.

d) IC 5 Team Leaders Questionnaire

A decision was made at the beginning of the project to forego the idea of having the hospital teams submit monthly reports to the coaches or the IC 5 Project Team. The rationale for this decision was the fact that the Planning Team did not want participants to construe the monthly reports as a mandatory element that was for the benefit of external stakeholders as opposed to its' true purpose of being a measurement tool for their own internal use.

As a substitute, the Planning Team created the *IC 5 Team Leaders Questionnaire*. IC 5 Team Leaders were asked to complete the questionnaire within a few weeks after the final Learning session. The purpose of the questionnaire was to summarize the level of activity that each of the teams had undertaken as part of IC 5 including the number of patients that directly been impacted by IC 5, the number of improvement cycles pursued and other bits of information that may not have been available from the other data sources.

4. FINDINGS

The next few sections outline the findings from the evaluation of IC 5.. Even though the depth and scope of activities varied by hospital site, there is clear evidence that IC 5 had an impact and was effective in stimulating change and improvement activity as demonstrated by the improved KAB scores and the number of assessments and treatment options implemented across the hospital settings.

a) What was the degree of uptake and implementation of continence care interventions?

As a result of IC 5:

- **92%** of the participating hospitals have written guidelines/protocols/procedures about management and treatment of UI
- **83%** of the participating hospitals regularly promote urinary continence
- **100%** of the participating hospitals have implemented formal or informal education sessions related to UI for their staff

The basis of the first research question was to determine if participation in IC 5 caused participating hospital teams to change organizational systems and processes related to continence care. This was measured by the degree of uptake and implementation of continence care interventions at each of the participating sites.

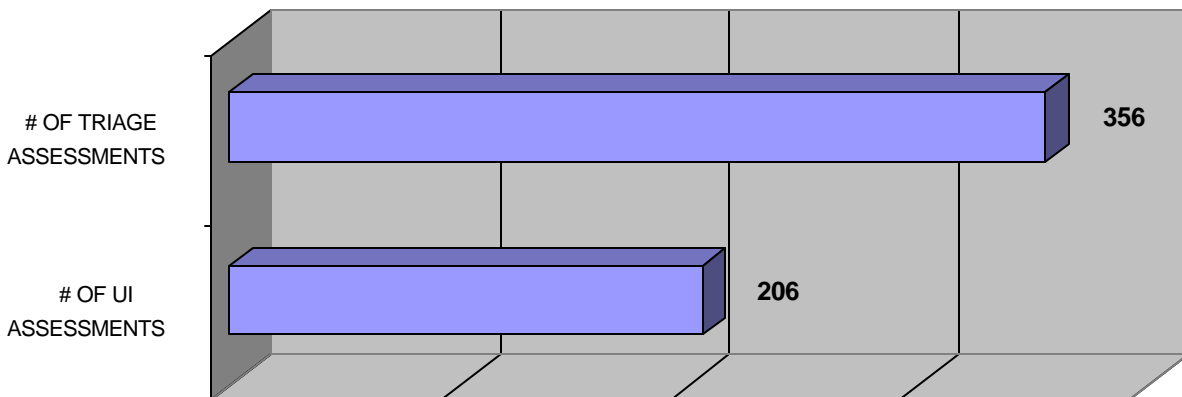
Based on self-reported results from the *IC 5 Team Leaders Questionnaire*, all but one of the hospitals (11/12) have written guidelines, protocols and/or procedures about the management and treatment of UI as a result of

IC 5. The one remaining hospital stated that it was at the stage of developing guidelines for their setting. When asked whether or not the guidelines were familiar to “all staff” within their facility, 67% (8/12) reported “yes.” As well, 83% (10/12) of the IC 5 Team Leaders reported that the promotion of urinary continence is regularly being monitored along with the prevalence of indwelling catheter usage through various strategies including weekly team meetings; random chart audit and customized tracking tools.

According to the same questionnaire, it was determined that almost 60% (176/299) of staff from the pilot units of all the participating hospitals were directly involved with implementing changes related to better continence care practices. In addition, 100% of the participating hospital teams stated that as a result of IC 5, formal or informal education sessions related to UI had been implemented at their settings. The choice of informal (e.g. huddles, PowerPoint slide deck) versus formal sessions (e.g. ½ day or full-day) were mainly determined by financial resources, however, a couple of organizations stated that the informal sessions were effective in reaching staff who worked outside of the regular day-time hours (e.g. evening and night shifts.)

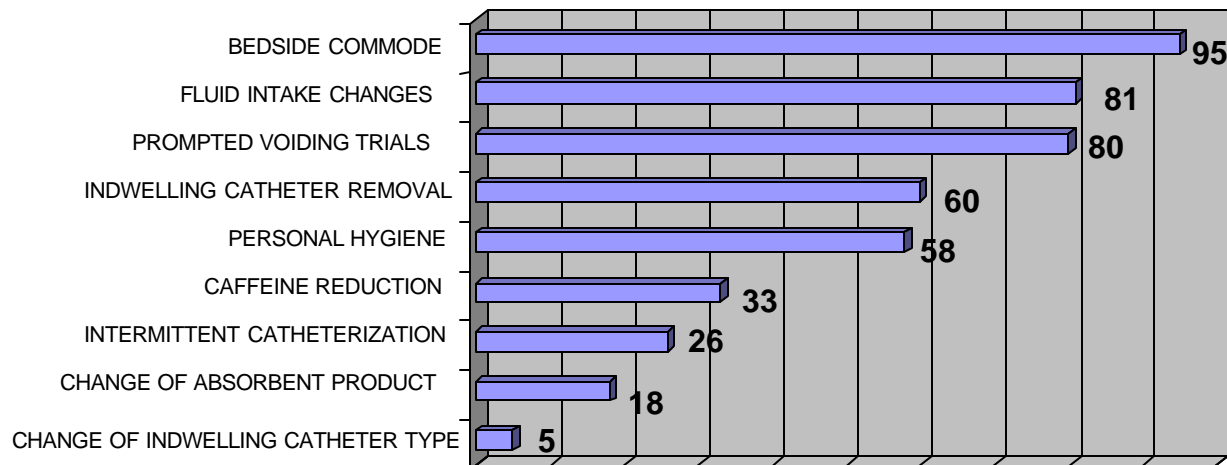
With regards to practice changes related to continence care, the following two figures depict the number of assessments and treatment interventions trialed for the 12 participating hospital teams as reported by the IC 5 Team Leaders.

Figure 3: # of UI assessments completed



Note: “Triage” assessment tools wholly associated with UI were independently developed by 3 of the 12 hospitals for their internal use. The hospitals stated that the triage tool was necessary to accommodate the high-level of admissions in their CCC units. In addition, the tool allowed them to ensure that every new patient was at least screened for UI whereas with previous practice, this critical process may have been omitted.

Figure 4: # of Treatment & Management Options for UI trialed



b) How effective was IC 5 in stimulating change and improvement in processes and outcomes of continence care?

Whereas the first research question for the evaluation of IC 5 focused almost exclusively on degree of uptake for each of the participating hospitals, the purpose of the second research question was to determine if *changes made by hospital teams lead to improvement*.

As outlined in the *Barriers to Improving Continence Care Practices and Outcome* section, staff knowledge and attitudes about the assessment and management of UI for patients are significant factors affecting the success of improving UI status for patients. The impact of IC 5 on *Knowledge, Attitudes and Beliefs about UI* are demonstrated in Figure 5:

Figure 5: Impact of IC 5 on Knowledge, Attitudes & Belief about UI

Proportion of participants who selected correct responses for each domain

Timeframe	Knowledge	Attitudes/Beliefs
Pre-IC 5 (Jan 05)	65.4%	80.7%
Post-IC 5 (Sept 05)	74.2%	83.6%
Change	+ 8.8%	+2.9%

Note: For both dimensions (Knowledge versus Attitudes/Beliefs), the increase in scores is statistically significant.

The results of the *Patient Chart Reviews* suggest that IC 5 had an impact on not only the number of assessments completed at the participating hospital sites, but on the depth (and thus quality) of the UI assessment itself.

Figure 6: Impact of IC 5 on # of UI assessments completed

Proportion of patients who had a UI assessment completed since admission

Timeframe	Participating Hospitals	Comparator Hospitals
Pre-IC 5 (<Dec 1 2004)	80%	55%
Post-IC 5 (>Sept 30 2005)	87%	62%
Change	+7%	+7%

Note: For Participating hospitals only, the increase in scores is statistically significant.

Figure 7: Impact of IC 5 on DEPTH of UI assessments completed

Proportion of patients who had >7 assessment criteria related to UI completed

Timeframe	Participating Hospitals	Comparator Hospitals
Pre-IC 5 (<Dec 1 2004)	9%	0%
Post-IC 5 (>Sept 30 2005)	24%	0%
Change	+15%	0%

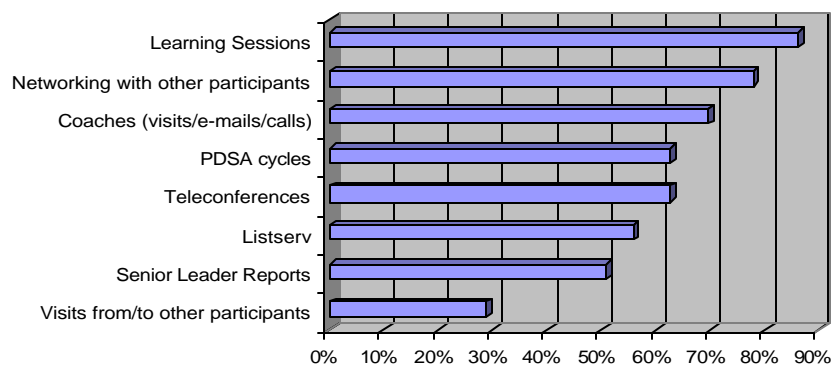
Note: For Participating hospitals only, the increase in scores is statistically significant.

c) What were the factors/determinants associated with success for IC 5 teams?

As demonstrated in the following figure 8, the value placed on the *Learning Sessions* and *Networking* opportunities is abundantly clear.

Figure 8: “To what extent did the following help your team in its work to improve continence care?”¹⁵

Proportion of participants who selected “A Fair Amount” or “A Great Deal” for each of the activities below:



¹⁵ Data Source: Team Evaluation of IC 5 (RAND Instrument)

Comments from various participants expressed appreciation for the quality improvement concepts and clinical model brought to their attention through IC 5 and the structure of the project that allowed them direct access to the expert faculty including Dr. Jennifer Skelly and Jim Handyside. The following are a sample of recurrent comments from the participants when asked **“In your opinion, what were the most important facilitators to your team’s work on the IC 5 Collaborative Project?”**

- *“Working in collaboration with other similar facilities”*
- *“Availability of the coach”*
- *“Education material provided”*
- *“Support from IC 5 Collaborative”*

When asked about the “obstacles” that participants encountered when trying to improve continence care within their facilities, most comments appeared to be related to organizational issues rather than the IC 5 initiative itself. The following sample of comments reflects the most consistent messages shared by participants when asked **“In your opinion, what were the most important obstacles to your team’s work on the IC 5 Collaborative Project?”**:

- *“Senior management not consistently supporting the project”*
- *“No committed time”*
- *“Resistance from staff”*
- *“Other priorities that were competing for time commitment of clinical staff...”*

5. DISCUSSION

Collaboration exercises such as the *Breakthrough Series* make it possible for subject matter and improvement experts to understand each others area of expertise and to package knowledge so that it is actionable – allowing front-line caregivers to put the science into practice. It accelerates the pace of improvement by exposing individuals and organizations to each other in a safe environment where sharing is the norm and which therefore, creates tremendous motivation for improvement.¹⁶

Efforts are under way around the world to improve the delivery of health care utilizing the quality improvement collaborative methodology. Unfortunately, the widespread acceptance of this approach is not necessarily based on scientific evidence but on shared beliefs and anecdotal information that may overstate the actual effectiveness of the method. At this point in time, there is only a modest quantity and quality of published evidence that supports its effectiveness.¹⁷

IC 5 was first and foremost, a quality improvement collaborative. In the background, research was conducted to draw lessons from the experiences of the 12 hospital sites

¹⁶ Ibid

¹⁷ “Creating the Evidence Base for Quality Improvement Collaboratives” B. Mittman; Annals of Internal Medicine; Volume 140, Number 11; June 2004

so that recommendations could be made to inform future collaborative efforts. Since improvement was the goal, stringent data collection activities were not imposed on the participating teams but rather, individual organizations were encouraged to collect data that were pertinent to their aims to help gauge improvement efforts.

The following will focus on the answers to the research questions outlined earlier in the report along with some theoretical explanations for each.

- a) What was the degree of uptake and implementation of continence care interventions?**
- b) How effective was IC 5 in stimulating change and improvement in processes and outcomes of continence care?**

Part of the success related to the uptake and implementation of continence care interventions at the participating hospital sites may be attributed to the ideas and materials generated prior to and during IC 5. For the project, there existed an evolving “knowledge bank” via a resource manual and webpage created for the project. The knowledge bank included clinical information; an overview of quality improvement principles and an archive of tools (both clinical and QI-related.) The goal was to make the resources available to all participants in the most efficient and effective manner possible in order to improve continence care in their settings.

Another positive attribute of the collaborative is the relatively efficient use of experts to facilitate and guide multiple teams to internalize best practice and translate the learnings to their own settings. This access to expertise may not have been available to individual hospitals otherwise.

In addition, the results of the *Team Evaluation of IC 5 (RAND Instrument)* inform us that the Learning Sessions and Networking opportunities had the most impact when it came to improving continence care practices. This suggests that the activities associated with IC 5 stimulated change and improvement in processes and outcomes of continence care.

Even though some may argue that the reported numbers do not appear dramatic, it should be acknowledged that IC 5 was dealing with participants who were new to the “science of improvement” along with its’ application. Building better habits for change does not come naturally to individuals or organizations, yet it is the critical foundation on which improvement efforts must be addressed.¹⁸ Organizations need to be receptive to change and contribute to accelerated improvement – as simple as these concepts appear to be, they need to integrate them into their routine behaviour.

The findings from the evaluation of IC 5 are congruent with that of other previously-run collaboratives from the UK and US. Participants’ positive response to the availability of

¹⁸ “The Vermont Oxford Network: Evidence-Based Quality Improvement for Neonatology”; J. Horbar; Pediatrics Vol. 103, No. 1 January 1999

reference materials, networking opportunities and access to expert faculty are congruent with the evaluation of other previously-run collaboratives in the UK and US.

c) What were the factors/determinants associated with success for IC 5 teams?

It is difficult to disentangle the true effect of IC 5 from the influence of contextual factors for each of the hospital teams. However, the results and comments from the *Team Evaluation of IC 5 (RAND Instrument)* suggest that the determinants of success for teams that were able to accomplish more improvement activity in comparison with their peers is more attributable to the context within which the changes were made as opposed to the methodology itself. This conclusion is based upon the fact that the activities or interventions provided by the IC 5 Project Team were the same for all involved yet there was a variation with regards to the uptake and impact of IC 5 amongst the participating sites. Supported by findings from previously run collaborative projects, the receptive contexts at the individual, team and organizational level play a significant role in determining both outcomes and experiences of initiatives such as IC 5.¹⁹

Based on the feedback from the participants and observations of the IC 5 Project Team, we suggest that the following factors strongly determine the degree of success for the teams:

- Strategic importance of improving continence care in their organization
- Skills and enthusiasm of the day-to-day team leader
- Team dynamics of the improvement team
- Degree of support from management

A Continuous Quality Improvement (CQI) model developed by O'Brien and colleagues²⁰ proposes that an organization's CQI efforts can be characterized in terms of its *technical, cultural, strategic* and *structural* dimensions. The following table provides a summary of the characteristics associated with each of these dimensions:

The Dimensions of CQI and Characteristics of an Effective Organization-wide Effort

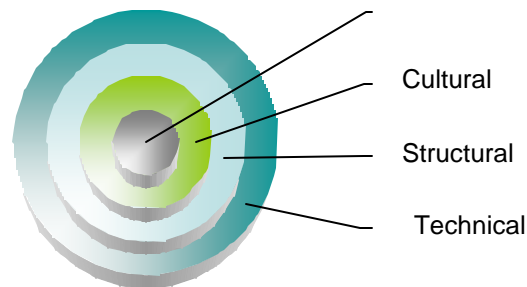
Technical Dimension	Cultural Dimension	Strategic Dimension	Structural Dimension
<ul style="list-style-type: none"> • Solid foundation of CQI expertise among staff • Ability to recognize opportunities for improvement • Comprehensive understanding of how services are produced and delivered • Routine use of expertise in daily work 	<ul style="list-style-type: none"> • Commitment to a shared purpose • Commitment to scientific principles and practices • Teamwork, cooperation and participation • Flexibility • Continuous Learning 	<ul style="list-style-type: none"> • Strategic plan and CQI efforts integrated • CQI efforts devoted to processes that are central to achieving strategic priorities • Roles and responsibilities defined in terms of integrated strategic and quality-related goals 	<ul style="list-style-type: none"> • Efficient and effective steering council • Information systems; easily accessible data • Single department to facilitate CQI • Structures in place to diffuse learning throughout the organization

¹⁹ "Summary lessons from phase 1 of the Cancer Services Collaborative"; Robert et al; School of Public Policy; Health Services Management Centre; The University of Birmingham

²⁰ "An Integrative Model for Organization-wide Quality Improvement: Lessons from the Field"; O'Brien et al; Quality Management in Health Care, 1995, 3(4), 19 - 30

From the perspective of the organization as a whole, their model proposes that CQI efforts will have the maximum effect when the characteristics of each dimension are addressed and fully aligned with one another (see Figure 7.)

Figure 9: Alignment of the dimensions of CQI for an effective organization-wide effort



If any of the four dimensions are under or overemphasized, the overall CQI efforts will be hampered. For example, if there exists problems with the *cultural* dimension, any CQI efforts will be minimal since the organization does not possess the attributes to sustain changes or because staff effectively block any implementation efforts. Alternatively, if there are no structures in place to transfer learnings across units or groups, CQI efforts will again flounder since the *structural* dimension is absent or ineffective.

The IC 5 Project Team attempted to address the *technical* dimension by providing the techniques and tools of quality improvement. In addition, IC 5 addressed the *structural* dimension by providing a forum for communication where the hospital teams could share their learning. However, without the *strategic* and *cultural* dimensions addressed, efforts by some hospital teams to improve continence care were hindered. Comments such as “lack of management support” or “no time for project” attest to this hypothesis.

6. RECOMMENDATIONS & NEXT STEPS

IC 5 itself was a learning process for the Planning Team at the HRRC. Based on our observations and experience, the following are some recommendations and next steps to be considered as a result of the project.

6.1 Recommendations for future QI Collaboratives

6.1.1 Ensure senior management is on-board

Earlier in the document, a reference was made to the fact that a continence care program will not be successfully implemented unless there is commitment from the organization. Commitment implies allocating resources and providing visible support - not just verbal affirmation.

Our experience with IC 5 confirmed this notion. For any future collaborative project, more preparatory work and ongoing liaison with senior management is recommended to ensure that teams receive the support required for any quality improvement endeavour such as a QI collaborative. Management needs to recognize how much resources, work and supporting conditions are needed to make improvements.

6.1.2 Ensure appropriate team composition

Even though the IC 5 Project Team provided general guidelines on the individual team compositions including a day-to-day team leader, at least one clinician, a quality specialist and a senior sponsor, many participating organizations either chose to ignore the advice and/or neglected to ensure the right mix of individuals were on the improvement team.

A structured orientation to all prospective teams to future collaboratives including expectations, time commitments, specific criteria for team composition prior to the beginning of the collaborative would be one effective strategy for ensuring appropriate team composition. In addition, involving coaches at the outset in guiding team selection and revisiting the team throughout the duration of the collaborative would also help to ensure the appropriate mix of team members.

6.1.3 Ensure teams have measurable targets and submit regular reports

The research indicates that there is value in agreeing to a set of common set of measures which all teams can track. This helps monitoring and evaluation, as well as enabling teams to learn from each other. It reduces the complexity which can come in a collaborative that tries to facilitate improvement on many different measures. To allow for differences among teams, teams can define a second set of measures which reflect their objectives.²¹ In addition, reporting progress on targets will help keep teams focused on the collaborative objective and on the need for measurement. It also can help collaborative organizers to track progress and decide which teams may need extra support.

For future collaborative work, establishing measurable targets and providing tools to support measurement (e.g. primary data collection forms, chart audit checklists, excel templates for development of run charts) would help useful for teams who struggle with the measurement.

6.1.4 Ensure teams make the leap to process changes versus patient-level changes

The concept of “process maps” was introduced to participants relatively early in the collaborative (within 3 months from the first Learning Sessions), however, the IC 5 Project Team witnessed a few teams still focusing on single patient-level interventions as opposed to improving current processes related to continence care (e.g. assessment of UI; removal of indwelling catheters etc.) by the end of the final Learning Session.

²¹ “Quality collaboratives: lessons from research”; Ovretveit et al; Qual. Saf. Health Care 2002; 11; 345-351

Organizers of future collaboratives should take into account the fact that teams they will be working with may be completely new to the science of improvement. A sufficient amount of dedicated time is required help develop a team's capabilities in this area. In addition,

6.2 Recommendations for future Research Opportunities

For a project of this magnitude, it is important to understand what happened after IC 5 officially ended. For example:

- Were improvements associated with IC 5 sustained and spread?
- Did the experience of participating in IC 5 change organizations way of making improvement?

This would entail doing a follow-up with teams at least one year after the final Learning Session to determine if the change concepts introduced by IC 5 were still in place at each of the participating hospital sites. Were they spread beyond the pilot units? Are participants still using the improvement techniques taught to them for other areas within the organization? (e.g. Was it applied to another clinical topic?)

Such a study would help provide important new insights into the collaborative methodology and potentially yield the effectiveness of a collaborative on transforming certain elements of health care.

6.3 Recommendations for future work aimed at addressing UI

For logistical reasons, IC 5 was targeted solely on hospitals that operate CCC beds. There still exists a huge opportunity to improve and restore urinary continence for hundreds, if not thousands, of other patients in other sectors by using the tools and resources that have been developed by the participating hospital teams and expert faculty for IC 5.

Whether using the Breakthrough Series methodology versus another type of intervention to help with the implementation of new knowledge and innovations related to better continence care practices, it would be wise to build off the current momentum of IC 5 to help address the manifestations associated with UI for a broader patient population.

6.4 Recommendations for future work aimed at addressing Women's Health Issues

There are opportunities to build off the lessons learned from the IC 5 experience and apply these to other areas for Women's Health that are ripe for improvement (i.e. A topic that is "ripe for improvement" would have the following characteristics: evidence of effective interventions; real examples of how improvements have been made in practice;

professionals feel it is important; subject is strategically important; ideas and suggestions about it can be applied in different types of settings.²²⁾

Ongoing investment in structured quality improvement initiatives such as IC 5 is strategically important given an increasing focus on system-level improvement

7. CONCLUSION – DID IC 5 WORK?

IC 5 was the first quality improvement collaborative to be lead by the HRRC. Based on the *Breakthrough Series* methodology developed by IHI, IC 5 sought to use existing scientific knowledge to improve continence care practices at 12 participating hospital sites. In the literature, the verdict varies on the true effectiveness of this methodology. The researchers at the HRRC attempted to contribute to this knowledge by conducting an evaluation of IC 5.

From our observations and in the views of the participants, it is evident that IC 5 helped teams to improve continence care practices within their settings. By providing the clinical and improvement knowledge, IC 5 was able to stimulate improvement in both process and outcomes. Based on our observations and results from the various data sources, the variation amongst hospital teams on the depth and scope of improvements is more strongly associated with the context (i.e. an organization's CQI dimensions) in which IC 5 was applied rather than the *Breakthrough Series* methodology itself.

The challenge now for participants is to maintain the momentum from the project by ensuring the spread and sustainability of change concepts associated with better continence care practices. In addition, our hope is that the quality improvement techniques and processes taught to the participants will be applied to other areas within their organization and help build towards significant improvements across all services.

“From this project, we realized what a priority continence care is to our patients. We provided dignity to our patients by managing their incontinence properly and gave our patients a sense of control over one aspect of their care. This all was accomplished by all front line staff supporting and working together. Teamwork really can make a difference in the lives of our patients...”

Paola Scanga-Lebrun, RN, BScN
St. Joseph's Continuing Care Centre

²² Ovretveit

APPENDIX – List of IC 5 Participating Hospitals



- Bridgepoint Health (Toronto)
- Chatham-Kent Health Alliance
- Joseph Brant Memorial Hospital (Burlington)
- Providence Continuing Care Centre; St. Mary's of the Lake Site (Kingston)
- Sisters of Charity Health Service (Ottawa)
- St. Joseph's Continuing Care Centre (Cornwall)
- St. Peter's Hospital (Hamilton)
- St. Thomas-Elgin Hospital
- Toronto Grace Hospital
- Toronto Rehabilitation Institute
- West Park Healthcare Centre (Toronto)
- Woodstock General Hospital