

National Medication Reconciliation Strategy

Identifying Practice Leaders for
Medication Reconciliation in Canada

February 2012

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EXECUTIVE SUMMARY

To facilitate understanding of the current landscape of medication reconciliation (MedRec) in Canada a survey of healthcare organizations identified as potential practice leaders was conducted between July and November of 2011. The purpose of the survey was to identify challenges and success factors in implementation of this key aspect of patient safety and to collect an inventory of tools and resources that contributed to this success.

Methodology

A total of fifty organizations, ranging from small stand-alone facilities to large regional healthcare organizations, representing nine provinces, were interviewed using a standardized survey tool.

Results

Seventy-four percent (74%) of organizations indicated full implementation of MedRec on admission while 43.6% had full implementation on transfer and 37.2% on discharge. The majority have implemented MedRec on medical units (64.7%) and on surgery units (58.8%). Over half of the respondents are using a paper-based system (54.2%) followed by 39.6% using a hybrid electronic/paper system and 14.6% using a fully integrated electronic system for all MedRec associated activities. Use of technology was identified as a key requirement for successful implementation of MedRec across the continuum of care.

When questioned about their implementation plan, respondents indicated the top three strategies were:

1. Securing senior leadership commitment and support,
2. Collecting baseline data to demonstrate need and track improvement over time, and
3. Using small tests of change to pilot new strategies before spreading broadly.

It was evident from the responses that MedRec is a multi-disciplinary process requiring engagement of physicians, nurses and pharmacy staff and that effective leadership is fundamental although a variety of leadership models, led by different professionals proved effective.

Challenges identified by respondents as they worked to implement MedRec include:

1. Lack of both human and fiscal resources (68.8% had no additional funds),
2. Lack of technology, and
3. Lack of professional and government guidance to support this important work.

Success factors as identified by organizations include:

1. Strong leadership support,
2. Physician champions/leaders,
3. Strong information technology support, and
4. Comprehensive staff education plan.

Compliance with Required Organizational Practices (ROPs), as defined by Accreditation Canada, was identified as the single biggest driver for implementing MedRec within organizations. Many indicated that after achieving success, the clinical benefit became the primary motivator to continue. There was also overwhelming acknowledgment for the support of *Safer Healthcare Now!* (SHN) tools and resources in implementing MedRec within organizations and across the continuum of healthcare services.


Measurement

The majority of organizations indicated they were measuring some aspect of their efforts. Ninety-seven percent (97%) measured percentage of patients reconciled and 88.5% used quality related indicators such as the mean number of unintentional discrepancies per patient. The frequency of measurement reporting ranged from monthly (59.1%) to quarterly (31.8%) while respondents universally agreed data collection and analysis was time consuming and challenging to continue.

Conclusion

The primary goal of this survey was to better understand Canadian healthcare organizations progress with respect to implementing MedRec. Only organizations recommended as practice leaders were interviewed, which was a small percentage of Canadian healthcare organizations. It is clear that in 2011, less than 40% of these practice leaders have a reliable process for MedRec at all interfaces of care. This is disappointing six years after it was identified as a key safety intervention of SHN and five years after Accreditation Canada introduced MedRec through specific Required Organization Practice. What is encouraging is the strong sense among healthcare organizations that MedRec is the right thing to do and they are still willing to put in the effort to facilitate this practice change. It does however point to the need for continued support to organizations in carrying on with this important work. In addition, a real value of this survey is to confirm clear directions for the future of MedRec in Canada and validate the priorities of the National Medication Reconciliation Strategy:

1. Development of a comprehensive strategy to engage and involve senior leaders including board members in understanding their role and responsibility in advancing MedRec across their organization.
2. Continued collaboration with national organizations including Canada Health Infoway to drive technology that is affordable, user-friendly and accessible to front line providers.
3. Support to the efforts of SHN in the development and dissemination of tools and resources to



educate and enable front-line providers to successfully understand and perform their role in MedRec.

4. Work with faculties of medicine, pharmacy and nursing to ensure all aspects of MedRec are included in curricula for future healthcare providers.
5. Continued collaboration with professional associations and national partners to create a comprehensive communication strategy targeting healthcare providers, provincial, territorial and federal health ministries and the public to better understand and support MedRec efforts in Canada.

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Identifying Practice Leaders for Medication Reconciliation in Canada

INTRODUCTION

Medication Reconciliation (MedRec) is a formal process in which healthcare providers work together with patients, families and care providers to ensure accurate and comprehensive medication information is communicated consistently across transitions of care. MedRec requires a systematic and comprehensive review of all the medications a patient is taking to ensure that medications being added, changed or discontinued are carefully evaluated. It is a component of medication management and will inform and enable practitioners to make the most appropriate prescribing decisions for the patient.

MedRec has been a safety intervention through *Safer Healthcare Now!* (SHN) since 2005 and an Accreditation Canada Required Organizational Practice (ROP) since 2006. Under the leadership of the Institute for Safe Medication Practices Canada (ISMP Canada) and funded by the Canadian Patient Safety Organization (CPSI) MedRec has become the most highly subscribed initiative with over 500 SHN teams that have enrolled and submitted data over the last six years. Many Canadian provinces and territories have identified MedRec among their strategic priorities in improving the safety and quality of healthcare within their jurisdictions. The World Health Organization (WHO) has identified MedRec as a global safety priority and under the leadership of ISMP Canada this work is taking place on the international stage. In spite of Canada's success, implementation of MedRec across all interfaces of care, for all patients continues to challenge healthcare organizations across this country.

To help understand the current landscape of MedRec in Canada a survey was conducted to identify practice-leading organizations, learn from their experience and obtain an inventory of supporting tools and resources. Critical feedback from the field has helped us better understand their needs and identify means to support the important work that lies ahead.

“MedRec really supported the concept of appropriateness of care. How can you treat a patient with very complex care needs when you don't even know what medications they are taking? How can you appropriately treat someone without an accurate picture of where they are now including their medication list? It certainly improved the quality of the care they were providing.”

Saskatoon Health Region, SK

METHODOLOGY

A series of telephone interviews were conducted with Canadian healthcare teams from July to November 2011. Organizations were contacted based upon their identification as potential leaders by SHN staff, ISMP Canada/CPSI MedRec leads, Accreditation Canada or by self-identification.

The interviews were conducted by six independent interviewers, affiliated with ISMP Canada or CPSI using a standardized survey tool (Appendix 1). Interviewees represented a variety of professional groups and all generously shared their experiences.

RESULTS

Population

A total of 50 organizations were contacted during the data collection period. The majority of those interviewed were standalone facilities, health regions or districts that provide a broad variety of services including acute care, home care, long-term care and ambulatory clinics. The table below shows the distribution of organizations contacted:

Characteristics of the Survey Respondents

Province Represented	ON	BC	QU	AB	SK	MN	NB	NS	PEI
Number	23	7	5	4	3	3	2	2	1

Primary Facility or System Description	Acute Care Facility*	Region or District*	LTC/Complex Continuing	Home Care	Provincial*	Ambulatory
Number	24	10	9	3	2	2

* Within these systems services provided may have included varying degrees of Acute/Long Term/Home and Ambulatory Care

Implementation of MedRec at Transitions of Care

Organizations varied with respect to the extent MedRec had been implemented. Approximately 74% of respondents indicated that they have fully implemented *MedRec* at admission, while only 43.6% had implemented at transfer and 37.2% had full implementation at discharge. In addition, greater than 80% had some degree of implementation at transfer and discharge.

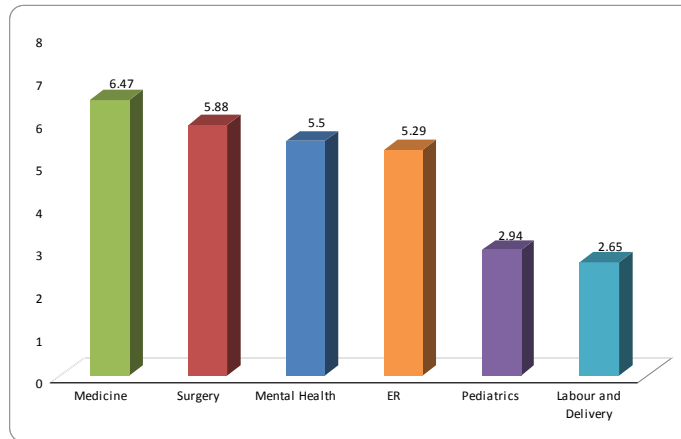
Implementation of MedRec at Transitions of Care

	Not Started Yet	Getting Baseline	Partially Implemented	Fully Implemented
Admission	0	0	26.1	73.9
Transfer	10.3	7.7	38.5	43.6
Discharge	14	4.7	44.2	37.2

Implementation of MedRec by Service Area/Patient Population

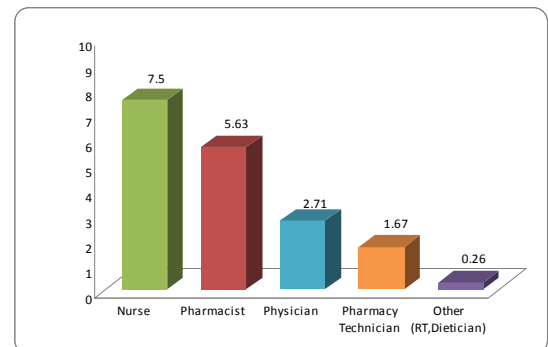
Organizations reported a variety of practice settings to begin the implementation process with the majority (64.7%) starting in medical services and 58% beginning in the surgical program.

Implementation of MedRec by Service Area/Patient Population



Resource Utilization for the Completion of MedRec Activities

The cornerstone of the MedRec process, the Best Possible Medication History (BPMH), is created by many different healthcare professionals. Our survey confirms that completion of the BPMH is truly an inter-professional function. Respondents identified nursing as the most common healthcare provider to complete the BPMH, followed closely by pharmacists. This graph shows the survey results for the question ‘Who completes the BPMH?’

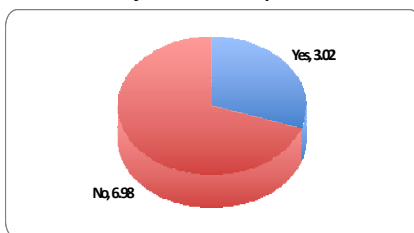


Twenty-three respondents stated they collected data on the time required to complete the BPMH. The results indicate that a range of 10 to 180 minutes is required to complete the BPMH, with an average of approximately 30 minutes. Seventy percent stated that they were not able to reduce the time required to perform the BPMH without sacrificing the quality of the information collected. Home Care

respondents indicated that time depends on the complexity of the clients, the number of medications they are on, how many medications they find in the home, the compliance of the patient with their medication regimen and the understanding the patient has of their medications.

Costing information was not available as most organizations had not calculated the actual resources required to implement this initiative.

Percentage of Respondents with Budget Allocation for MedRec Implementation



Resource allocation was specifically targeted in the survey question ‘Did you have a budget allocated for MedRec?’ The response to this question is shown graphically and demonstrates that financial resources to support implementation were scarce.

Technology Support for Implementation of MedRec

Of the organizations interviewed, more than half are using paper-based tools for MedRec (54.2%), followed by a hybrid (electronic/paper) system (39.6%). A mere 14.6% of respondents indicated that they were using a completely electronic system for the completion of MedRec associated activities.

Many respondents shared that the successful implementation of MedRec using paper-based tools was possible at admission; however the complexity of the process at other transitions requires either the availability of technology and/or improvements in existing technologies.

“A barrier is the lack of electronic record and software to support MedRec at all transitions of care. It creates a need for working with a paper system at some areas and electronic in others. This has slowed the overall plan to implement MedRec at discharge and complicated it at all other transitions of care.”

Elm Grove Living Centre, ON

Implementation Strategy

A series of questions in the survey focused on the respondents approach to MedRec implementation and spread. Many described similar systematic approaches, independent of the patient population served. Several quality improvement and project management strategies were identified by respondents in this survey including:

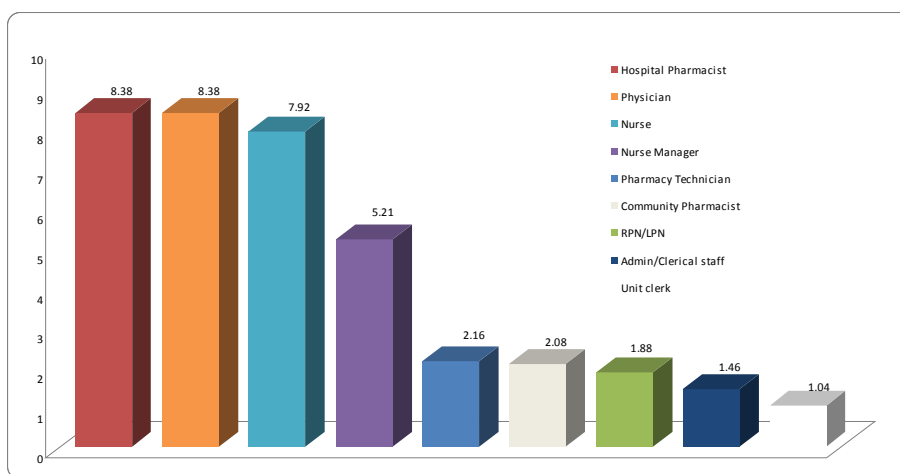
- 1 Securing senior leadership commitment (83.8%)
- 2 Collecting baseline data (83.8%)
- 3 Piloting in small area (81.1%)
- 4 Forming a team (78.4%)
- 5 Development of a spread strategy (73%)
- 6 Setting goals and aims (67.6%)
- 7 Process mapping current practice (51.4%)

“The team began MedRec by attending a session sponsored by *Safer Healthcare Now!* and enrolling as a SHN team. Mapping current processes helped to determine the best way to move ahead. The team consulted professional associations about who is responsible for creating the BPMH and this ultimately became the role of the nurse.”

Saskatoon Health Region – Home Care, SK

The implementation of MedRec was the overall responsibility of the pharmacy department in 38.9%, followed by senior leaders in 27.8% of organizations interviewed. Additional survey questions were asked regarding the following strategies including: ‘*Who did you include on the MedRec Team?*’. The results of this survey question are shown graphically below. Other less frequently identified members of the team not represented below include Accreditation Specialists, Quality Improvement Specialist, Information Technologists, and notably patients.

MedRec Implementation Team Members by Discipline (%)



Challenges and Success Factors

A large component of the survey focused on identifying challenges and success factors encountered by organizations as well as the role of external drivers and supports such as Accreditation Canada requirements and SHN leadership.

Survey respondents spoke to a variety of challenges to successful implementation, including:

- ❖ Lack of provincial government and professional association guidance,
- ❖ Lack of information technology solutions,
- ❖ Reluctance to change,
- ❖ Perceived increase in workload,
- ❖ Lack of physician engagement,
- ❖ Lack of resource allocation (human or financial),
- ❖ Process standardization difficult across multiple sites,
- ❖ Added-value of MedRec questioned, and
- ❖ Lack of understanding of the role of each healthcare professional.

Common success factors for the implementation of MedRec included:

- ❖ Strong leadership support,
- ❖ Multi-disciplinary buy-in,
- ❖ Physician champions/leaders,

- ❖ Clear definition of healthcare provider roles,
- ❖ Commitment of staff (culture),
- ❖ Perseverance and persistence,
- ❖ Appropriate staff education,
- ❖ Process integration into workflow, user-friendliness,
- ❖ Regular feedback on progress using measurement data,
- ❖ Strong information technology support, and
- ❖ Oversight by a multi-disciplinary committee.

As evidence supporting the importance of staff education, 92% of respondents stated that targeted MedRec education of staff was part of their implementation process. The education strategies were varied and included use of a train-the-trainer model, on-line training modules, educational DVDs, PowerPoint presentations and one-on-one education sessions. When asked '*In the future, would you change your approach to education?*' most participants responded that they would not. However, several respondents shared that they 'would make the education sessions mandatory' and that they 'would approach healthcare professionals as students prior to entry to practice'.

Use of SHN services and tools were specifically addressed when respondents were asked to describe '*How did SHN help with the implementation of MedRec?*'. The top three responses were:

1. Community of Practice (71.4%)
2. National calls/webinars (68.6%)
3. Meetings and workshops with faculty and advisors (60%)

The survey question '*What was your main motivator for implementing MedRec?*' revealed that compliance with Accreditation Canada's ROP was the single biggest driver for MedRec implementation. Leadership prioritization was identified as the second most frequent motivating factor.

Measurement

Ninety-seven percent of respondents measure the process measure 'percentage of patients reconciled on admission', and 88.5% measure outcomes such as 'mean number of unintentional discrepancies/patient'. Overall, data for at least one type of measure are collected on a monthly basis by 59.1 % of respondents, with 31.8% measuring on a quarterly basis. Notably, some respondents are not measuring at all. Some indicated that data collection was time consuming and beyond their capacity to do from a workload perspective. Of those who did measure, data were collected in most cases either by a pharmacist (15.2%) or a nurse (6.1%). Other staff members involved with data collection included pharmacy technicians, students, quality/risk personnel, health records staff and management personnel.

DISCUSSION

The primary objective of this survey was to identify Canadian practice leaders that have MedRec implemented reliably from admission to discharge. Additionally, best practices and tools and resources were identified to support complete and accurate communication of medication information across interfaces of care. These resources are available on the MedRec Communities of Practice.

Although all recommended organizations as well as those that self-identified as MedRec leaders were interviewed (Appendix 2), it is difficult to know if everyone that met the defined criteria were included, an obvious limitation of this survey. Only organizations recommended as practice leaders were interviewed, which was a small percentage of Canadian healthcare organizations. It is clear that in 2011, less than 40% of these practice leaders have a reliable process for MedRec at all interfaces of care. This is disappointing six years after it was identified as a key safety intervention of SHN and five years after Accreditation Canada introduced MedRec through specific Required Organization Practices. What is encouraging is the strong sense that MedRec is the right thing to do and that organizations are still willing to put in the effort to facilitate this practice change.

In addition, a real value of this survey is to confirm clear directions for the future of MedRec in Canada and validate the priorities of the National Medication Reconciliation Strategy:

1. Development of a comprehensive strategy to engage and involve senior leaders including board members in understanding their role and responsibility in advancing MedRec across their organization.
2. Continued collaboration with national organizations including Canada Health Infoway to drive technology that is affordable, user-friendly and accessible to front line providers.
3. Support to the efforts of SHN in the development and dissemination of tools and resources to educate and enable front-line providers to successfully understand and perform their role in MedRec.
4. Work with faculties of medicine, pharmacy and nursing to ensure all aspects of MedRec are included in curricula for future healthcare providers.
5. Continued collaboration with professional associations and national partners to create a comprehensive communication strategy targeting healthcare providers, provincial, territorial and federal health ministries and the public to better understand and support MedRec efforts in Canada.

Healthcare professionals across the country who have successfully implemented MedRec have an overwhelming sense that MedRec benefits patients, is the right thing to do and intend to continue with their efforts to make care safer.

Appendix 1: 2011 National MedRec Survey to Identify Leading Practices

1. **Date of Interview: (MM/DD/YYYY)** _____

2. **Demographic Information:**

Facility Name: _____

Facility Type or System Description: _____

Name of Interviewees: _____

Name of Interviewers: _____

Email Address: _____

Phone Number: _____

3. **What type of service provider are you?**

Region Academic Teaching Hospital Community Hospital

Home Care Ambulatory Clinics LTC/Continuing Care

Additional Comments: _____

4. **When did you start implementing MedRec? Dates: (MM/DD/YYYY)** _____

5. **In what clinical areas have you implemented?**

Medicine Surgery Mental Health Emergency Room

Labour and Delivery Paediatrics Psychiatrics Ambulatory

Long Term Care Home Care Complex Continuing Care

Other (please specify): _____

6. **To what extent has it been completed?**

	Not Started Yet	Getting Baseline	Partial Implementation	Full Implementation (100% Reliable)
Admission				
Transfer				
Discharge				

Comments: _____

7. **Please describe your implementation and spread strategy.**

8. **What type of system are you using?**

Paper Electronic Hybrid of both

9. **What criteria did you use to identify the target population?**

10. **What was the main motivator for implementing MedRec? For Example:**

Leadership determined it as a priority for you org

Opportunity to work with SHN to get the work done

It became an ROP from Accreditation Canada so needed to implement to comply with accreditation

Other/Additional Comments: _____

11. How did you approach the implementation process?

- Readiness Assessment
- Form a team
- Set Aims (Goals and Objectives)
- Submit Baseline Data
- Evaluate Improvements Being Made
- Constructed Process Owner's Matrix
- Start with Small Projects and Build Expertise in Reconciling Medications
- Other/What's your story?
- Secure Senior Leadership Commitment
- Define the problem
- Collect Baseline Data
- Mapping (current/ideal)
- Spread

12. Who did you include in your MedRec team?

- Nurse Manager
- Hospital Pharmacist
- Unit Clerk
- Other (please specify):
- RN
- Community Pharmacist
- Admin/Clerical Staff
- RPN
- Pharmacy Technician
- Patient
- MD

Comments:

13. Did you get multi-disciplinary buy-in?

- Yes
 - No
- If yes, please describe how you achieved it:

14. What barriers did you face and how did you get around them?

15. Did you follow a Quality Improvement Model (i.e., PDSA cycle) in your implementation strategy?

- Yes
- No

16. What supports were put in place?

- Leadership support
- Education of Staff
- Budget for staff allocated
- Physician lead
- Implementation team

Other/Additional Comments:

17. Who had the overall responsibility of implementing MedRec?

- Pharmacy
- Quality Improvement
- Each Unit
- Senior Leader

Other (please specify) Comments:

18. Did you get a budget allocated to MedRec?

- Yes
 - No
- If yes, what budget was allocated? Who makes the decisions on how it was spent?
Comments?

19. Has the overall cost of implementing MedRec for your organization been calculated?

- Yes
 - No
- If yes, what is the average cost to implement MedRec?

20. Did you provide education for your staff?

- Yes
 - No
- If yes, how did you educate your staff?

21. In the future, would you change your approach to education?

22. Which model do you use for MedRec at Admission?

- Proactive Retroactive Mixed

Comments:

23. Who takes the BPMH?

- Pharmacist Nurse MD Pharmacy technical assistant

Other (please specify):

24. How are you measuring the quality of the BPMHs that are completed, and if so, what are you finding?

- Mean number of undocumented intentional discrepancies per patient
 Mean number of unintentional discrepancies per patient

Other/Comments:

25. How often do you measure?

- Every month Every 3 months Annually Never

Comments:

26. Who collects this data?

- Pharmacist Pharmacy Technician Pharmacy Student Nurse
 Quality improvement/risk management Manager

Other (please specify)

27. Do you collect information about the average time to take a BPMH? If yes, please answer the question below (minutes) *Input numerical value ONLY*****

What is the average time for taking a BPMH in minutes?

28. Have you been able to reduce the time for the BPMH without sacrificing the quality?

- Yes No If yes, how?

29. Identify measures used for MedRec Implementation?

Percentage of patient reconciled:

Other (please specify):

30. What do you think contributed to your success?

31. Was the effort you put into implementation worth it?

- Yes No Explain:

32. Have you have implemented discharge medication reconciliation?

- Yes No If yes, have you measured impact on readmissions? Which parameter are you measuring- i.e. percent readmissions to Emergency Department within 30 days from discharge, or other.

33. Give us your best MedRec story (good or bad)

34. If you were to begin this work again tomorrow what would you do differently? What would you do the same?

35. How did SHN help you implement MedRec?

- National Calls Phone calls to Faculty or SIA Emails to Faculty or SIA CoP
 Meeting/workshops with SIA or Faculty Mentor program Virtual Action Series
Other (please specify) or suggestions for us:

36. How else can we help?

37. What is your biggest frustration, barriers and challenges?

38. Is there anything else you want to tell me about your work on MedRec that we haven't covered on this call?

39. Are you clear about what is expected from Accreditation Canada?

- Yes No If not, why not?
Is there anything you wish you could say to Accreditation Canada?

40. Can you suggest the name of a potential MedRec speaker for us for a call? E.g. patient

41. Do you have resources to share?

- Forms Education packages Role Definitions Policies
 Procedures Posters Business Cards Newsletters
 Case Studies

Other (please specify):

43. May we have permission to share the name of your organization, the information gathered today and any MedRec resources you have developed/created (forms/P&PS/educational packages/videos) to be included in our database and shared with our teams on our MedRec website. Please mail them to bcarthy@ismp-canada.org

- Yes No

Comments:

To be completed by interviewer:

1. Would you consider this team a leader in their practice of MedRec?

- Yes No If yes, why do you consider them as a leader in their practice?

2. Would you like to be a mentor organization (If they are a leading practice organization)

- Yes No

Appendix 2 - Practice Leaders^{*}

Among *acute care* organization surveyed, two distinct categories emerged: sites with greater than 100 beds and sites with less than 100 beds who have implemented MedRec across the continuum of admission, transfer and discharge in greater than 50% of their beds.

The following **acute care sites** have been identified as practice leaders in the greater than 100 bed category:

- **Cape Breton District Health Authority** in Nova Scotia
- **Forensic Psychiatric Hospital (Provincial Health Services Authority)** in British Columbia
- **North York General Hospital** in Ontario
- **Queensway Carlton Hospital** in Ontario
- **Saint Mary's Hospital** in Quebec
- **Toronto East General Hospital** in Ontario
- **University Health Network** in Ontario
- **York Central Hospital** in Ontario
- **Cape Breton Regional Hospital** in Nova Scotia

The following **acute care sites** have been identified as practice leaders in the less than 100 bed category:

- **BC Cancer Agency (Vancouver Centre site)** in British Columbia
- **Dryden Regional Health Centre** in Ontario
- **Hôpital Glengarry Memorial Hospital** in Ontario
- **Moose Jaw Union Hospital** in Saskatchewan
- **South Huron Hospital Association** in Ontario
- **Sussex Hospital** in New Brunswick
- **Winchester District Memorial Hospital** in Ontario
- **Northside General** in Nova Scotia
- **Glace Bay Health Care Facility** in Nova Scotia
- **Sacred Heart Community Health Centre** in Nova Scotia
- **Inverness Consolidated** in Nova Scotia
- **Victoria County Memorial** in Nova Scotia
- **Buchanan Memorial** in Nova Scotia
- **New Waterford Consolidated** in Nova Scotia
- **Vita & District Health Centre** in Manitoba
- **DeSalaberry District Health Centre (St. Pierre)** in Manitoba

Among **long term or complex care service sites** the following have implemented MedRec across their transitions of care:

- **Algonquin Nursing Home** in Ontario
- **Baycrest** in Ontario
- **City of Toronto Long Term Care Homes** in Ontario
- **CSSS Jeanne-Mance** in Québec

^{*} Despite our best efforts to identify Canadian practice leaders it is possible there are additional practice leaders who have

- **Good Samaritan Society** in Alberta
- **Leisure World – St George** in Ontario
- **Providence Health** in Ontario
- **Providence Health Care - Residential Care** in British Columbia
- **South Eastman Health Authority - Long Term Care Sites** in Manitoba

In the **Ambulatory setting**, the following have implemented MedRec processes across their populations:

- **Provincial Renal Agency** in British Columbia
- **Juravinski Cancer Care Center** in Ontario

Canada may be the first country to implement MedRec in **home care** and as a result there are four home care service providers who provide reliable MedRec at admission to their home care clients;

- **Vancouver Island Health Authority's Home Care** in British Columbia
- **The New Brunswick Extra Mural Program** in New Brunswick
- **Central Community Care Access Centre** in Ontario
- **Saskatoon Health Region's Home Care** in Saskatchewan

not been included in this report.



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