The 2013 Paper to Electronic MedRec Survey

Prepared for:

Institute for Safe Medication Practices Canada
4711 Yonge Street, Suite 501
Toronto, Ontario, Canada
M2N 6K8
www.ismp-canada.org

The Canadian Patient Safety Institute
1414 10135 103 Ave,
Edmonton, Alberta, Canada
T5J 3G1
www.patientsafetyinstitute.ca

Prepared by:

University of Victoria
Victoria, BC
Alex M.-H. Kuo, PhD
Helen Monkman, PhD (Candidate)

AE Informatics
Victoria, BC
Elizabeth M. Borycki, RN PhD
Andre W. Kushniruk, MSc, PhD

Institute for Safe Medication Practices Canada,
Toronto, ON
Lisa Sever, BSc Phm, ACPR, CGP, Medication Safety Specialist
Alice Watt, BSc Pharm, Medication Safety Specialist
Brenda Carthy, BA(CompSci), National Medication Reconciliation Coordinator
Valerie Leung, Consultant

Canadian Patient Safety Institute
Edmonton, AB
Mike Cass, National Patient Safety Improvement Lead

Canada Health Infoway
Toronto, ON
Seema Nayani, BSc Phm, Pharmacist Leader

Suggested Citation:

The Electronic Medication Reconciliation Group. (2013). The 2013 Paper to Electronic MedRec Survey. ISMP Canada and Canadian Patient Safety Institute.

Acknowledgements

The authors of this document would like to acknowledge and thank staff and researchers from:

AE INFORMATICS	AE Informatics
Canada Health Infoway / Inforoute Santé du Canada	Canada Health Infoway (sponsor)
cpsi icsp — Canadian Patient Safety Institute / Institut canadien pour la sécurité des patients	Canadian Patient Safety Institute (CPSI)
ismp CANADA — Institute for Safe Medication Practices Canada / L'Institut pour l'utilisation sécuritaire des médicaments du Canada	Institute for Safe Medication Practices Canada (ISMP Canada)
University of Victoria	School of Health Information Science

The Institute for Safe Medication Practices Canada (ISMP Canada) in partnership with the Canadian Patient Safety Institute (CPSI) along with researchers from the University of Victoria and AE Informatics supported the paper to electronic medication reconciliation initiative and development of this toolkit. This work was funded by Canada Health Infoway.

Results of Online Survey and Telephone Interviews

To inform the development of the first edition of the Paper to Electronic Medication Reconciliation Toolkit (2013) a survey was conducted to learn about the latest developments surrounding electronic Medication Reconciliation (eMedRec) across Canada. An online survey was conducted with clinicians, health care administrators and health information technology professionals from across Canada to learn about existing eMedRec processes. The survey sampled healthcare facilities from across Canada and was conducted from April to May of 2013. Invitations were sent to 2799 people asking for participation in the survey. The survey was sent via email using a list serve at ISMP Canada. Completion rate was 7.6% (212) of people invited. This document outlines some of the key findings from the survey and key themes arising from an analysis of telephone interviews with participants about eMedRec. The people who completed the survey and interviews included physicians, nurses, pharmacists, healthcare administrators, quality improvement professionals, and health information technology (IT) professionals.

Current Landscape of MedRec

Forty-eight percent (48%) of respondents reported that eMedRec was partially or fully implemented within their facilities, as can be seen in **Figure C1**.

Sixty-one percent (61%) of those who are not currently doing MedRec electronically (n = 123), are considering implementation of eMedRec. Of those respondents, 31% are planning to implement eMedRec in the next year, and an additional 19% planning within 2 years.

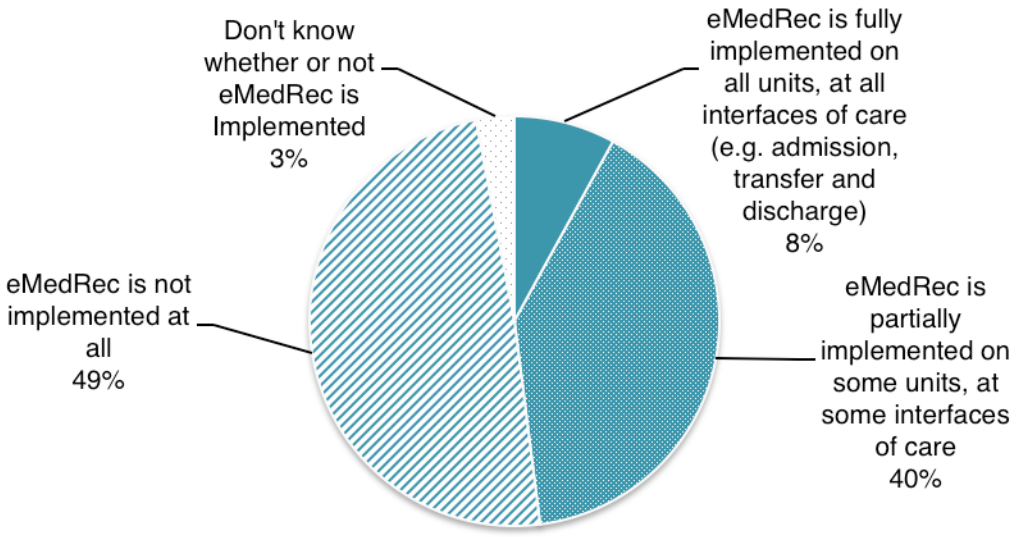

Figure C1. Extent of eMedRec implementation (n = 250)

Type of eMedRec in Use

Respondents who indicated that they used some form of eMedRec also indicated that hybrid, electronic and other mechanisms were used to conduct eMedRec. As can be seen in **Figure C2**, hybrid eMedRec predominates.

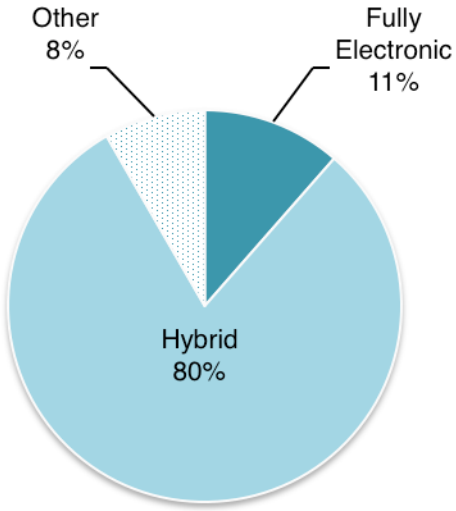

Figure C2. Type of eMedRec implemented (n = 96)
Other included: "cutting and pasting" medications from the EMR, paper MedRec in some departments, hybrid MedRec in smaller community hospitals and eMedRec in large acute hospitals, use of a provincial drug information system program, and not yet implemented.

Where is eMedRec Practiced?

Respondents indicated that eMedRec is practised in a variety of settings in Canada. In addition to admission, transfer and discharge in acute care and long- term care, eMedRec is also practised in ambulatory care, clinic and other settings (e.g., home care, primary care, transitions in outpatient care, rehabilitation, long term care).

eMedRec Functionality

eMedRec functionality available to the respondents of the survey was highly variable. In many cases, survey participants indicated that when eMedRec functions were available many were not using them to their fullest extent.

Resources for Implementing and Sustaining eMedRec

Most respondents indicated that no additional resources (e.g., human, financial) were allocated to implementing or sustaining eMedRec. Additionally, very few respondents reported that external financial assistance (e.g., provincial or federal funding) was available to support eMedRec deployment.

Training for eMedRec

The top three methods of training users on eMedRec reported by survey participants were:

1. On-demand one-to-one training with a clinical champion
2. Unit based in-services
3. In-class training with an instructor.

Evaluation of eMedRec

Of the participants who indicated their organization did eMedRec, approximately half of them reported that they were currently or had previously evaluated their eMedRec process. The three most prevalent performance measures that were used include:

1. Number/percentage of patients reconciled
2. Quality of the intervention
3. Frequency of use

Frequencies of planned evaluations varied from monthly, to quarterly to annually.

Perceived Success of eMedRec

Of the participants who implemented eMedRec, many considered the eMedRec implementation to be "successful" to "very successful" (see **Figure C3**).

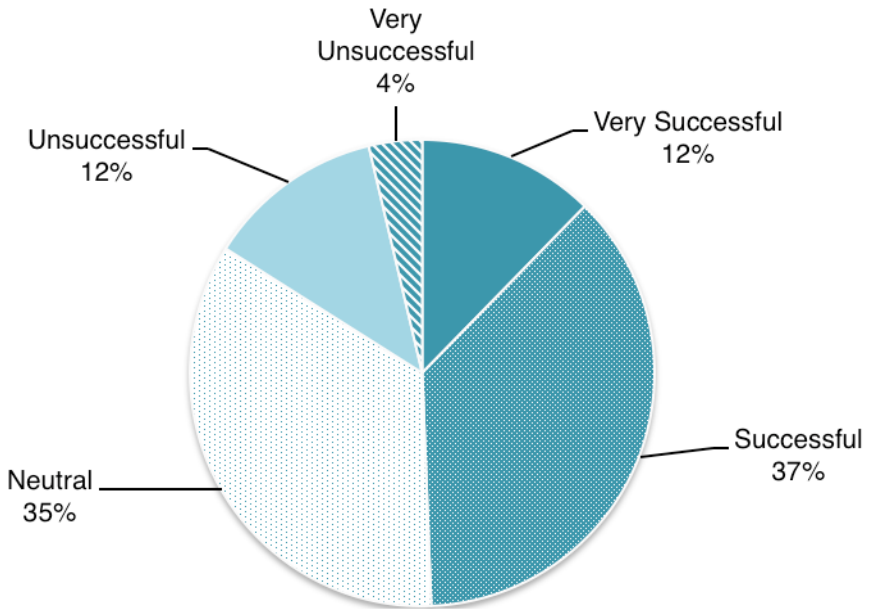

Figure C3. Perceived success of eMedRec implementation (n=81)

Factors That Support Successful eMedRec Implementation

Participants in the online survey outlined several factors to motivate eMedRec implementation. They are described below.

Factors that Motivate eMedRec Implementation (n = 79)

As can be seen in **Figure C4**, the highest reported motivators for eMedRec implementation were:

1. Improving safety through health IT
2. That it was the right thing to do
3. Improving MedRec workflow and efficiency

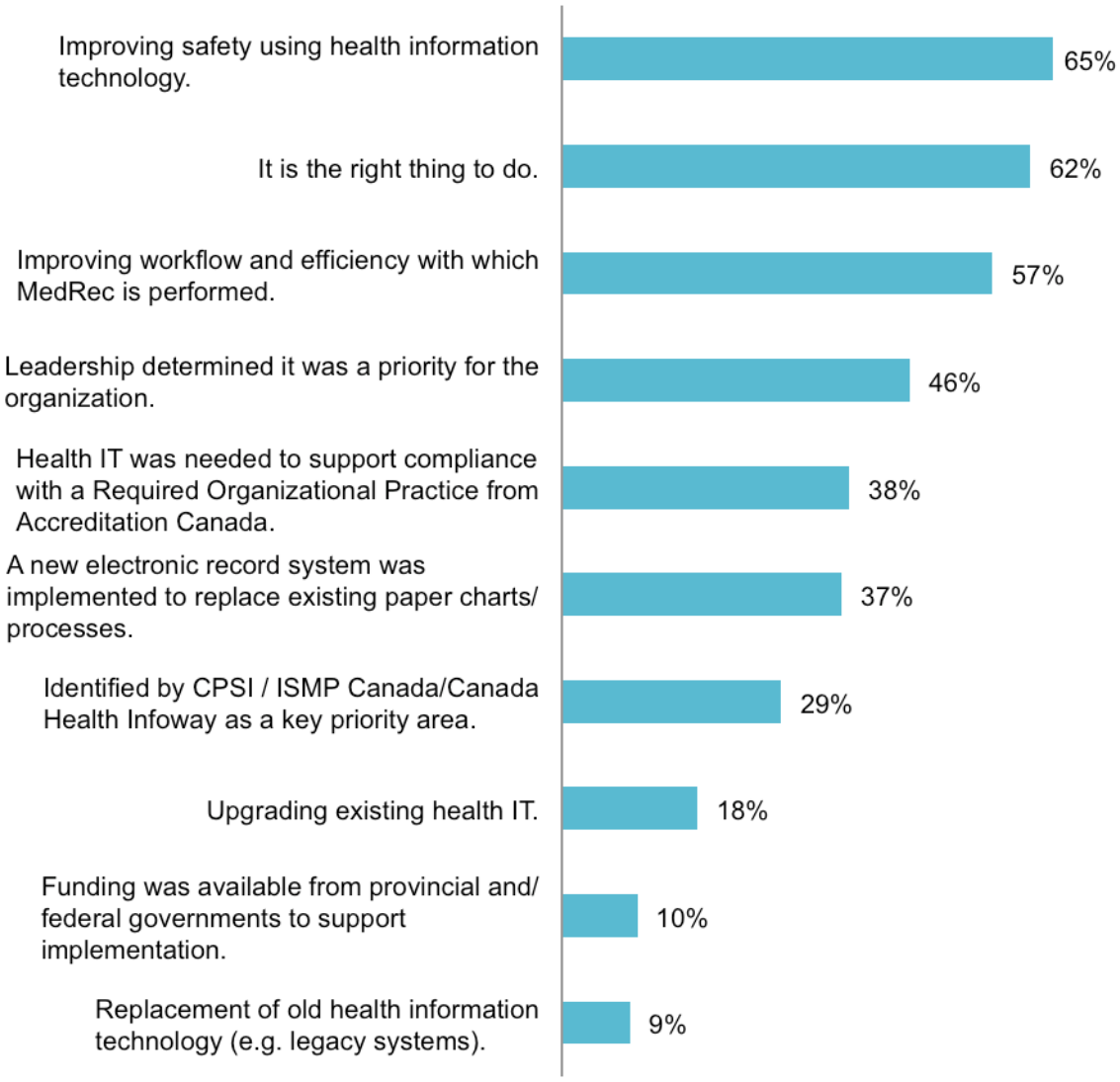

Figure C4. Ranked reported motivators for implementing eMedRec.

Factors that Led to Successful eMedRec Implementation (n = 69)

As can be seen in **Figure C5**, the highest reported factors that led to successful eMedRec implementation were:

1. Education of staff about MedRec
2. Senior management support
3. Multi-disciplinary implementation team

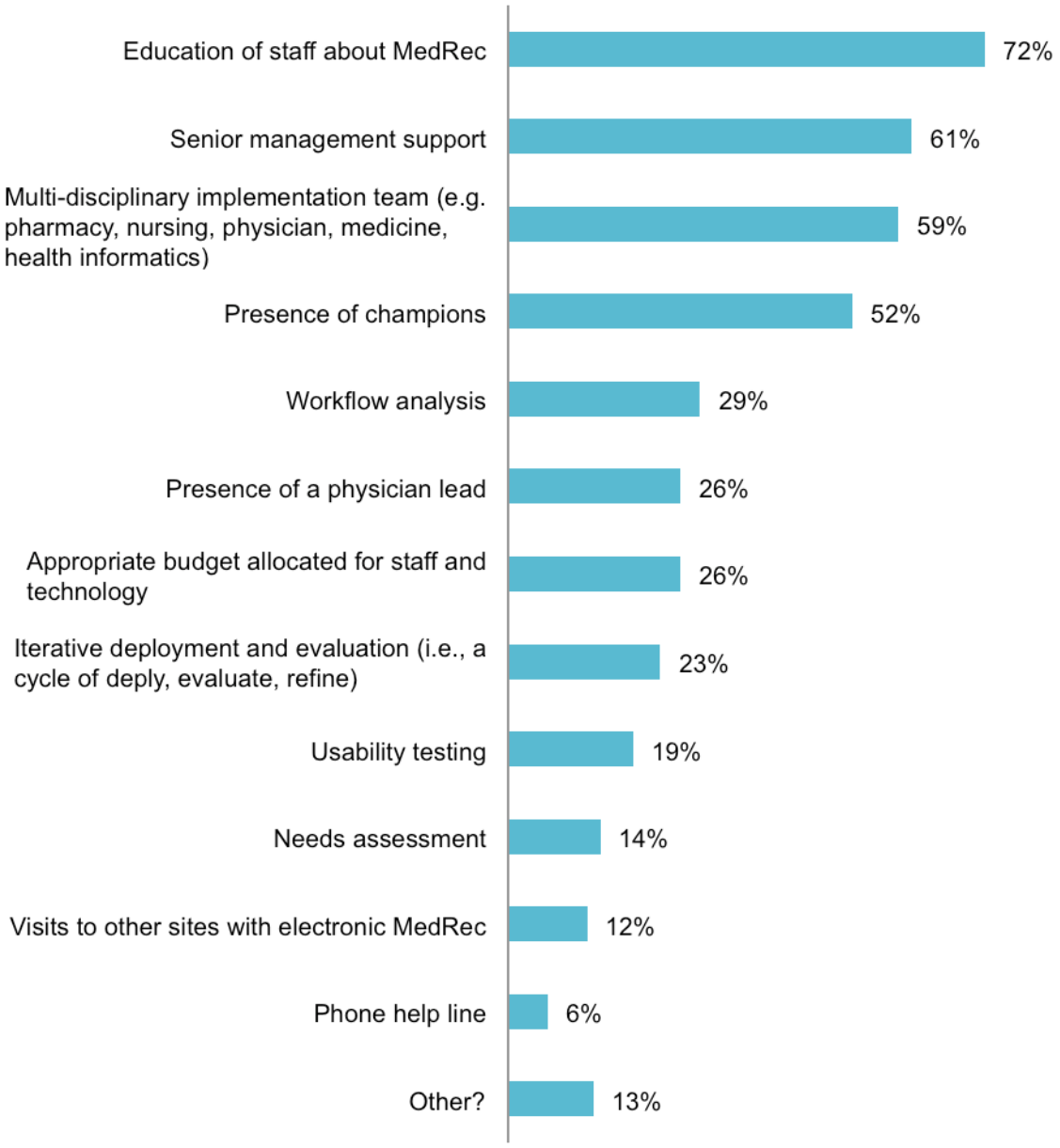

Figure C5. Ranked reported success factors for implementing eMedRec.
Other included: consultant support, time and perseverance, re-engagement, performance audits, webinar on primary care clinics and MedRec.

Factors that Impede Successful Migration to eMedRec

Several barriers that deterred organizations from transitioning to eMedRec or made this transition more challenging were identified in the online survey.

Deterrents from Transitioning to eMedRec (n =114)

Many respondents whose facilities had not yet implemented eMedRec were in the process of developing or deploying eMedRec. Below is a summary of the free-text responses outlining the most prevalent themes that emerged preventing the transition to eMedRec:

- Lack of financial and human resources
- Lack of electronic charting, still using paper charts
- Lack of IT infrastructure
- Lack of eMedRec capabilities in health information systems currently implemented
- Lack of interoperability with
    - Other systems within the facility (e.g., eMAR, CPOE)
    - Other facilities within the region
    - Pharmacies
- Lack of strategy and/or higher-level motivation for implementation
- Not prudent to upgrade current system because the adoption of a new health information system is planned
- Contract issues with vendor
- Challenges associated with rural site implementations
- Still in the process of rolling out paper MedRec at admission, transfer and discharge
- Time required for electronic documentation.

Factors that Impede eMedRec Implementation (n = 81)

Survey participants reported several challenges to eMedRec implementation. As can be seen in Figure C6, the most frequently reported barriers impeding eMedRec implementation were:

1. Lack of integration with provincial drug information systems
2. Lack of integration amongst electronic record systems outside of the institution
3. Lack of pharmacy human resource support.

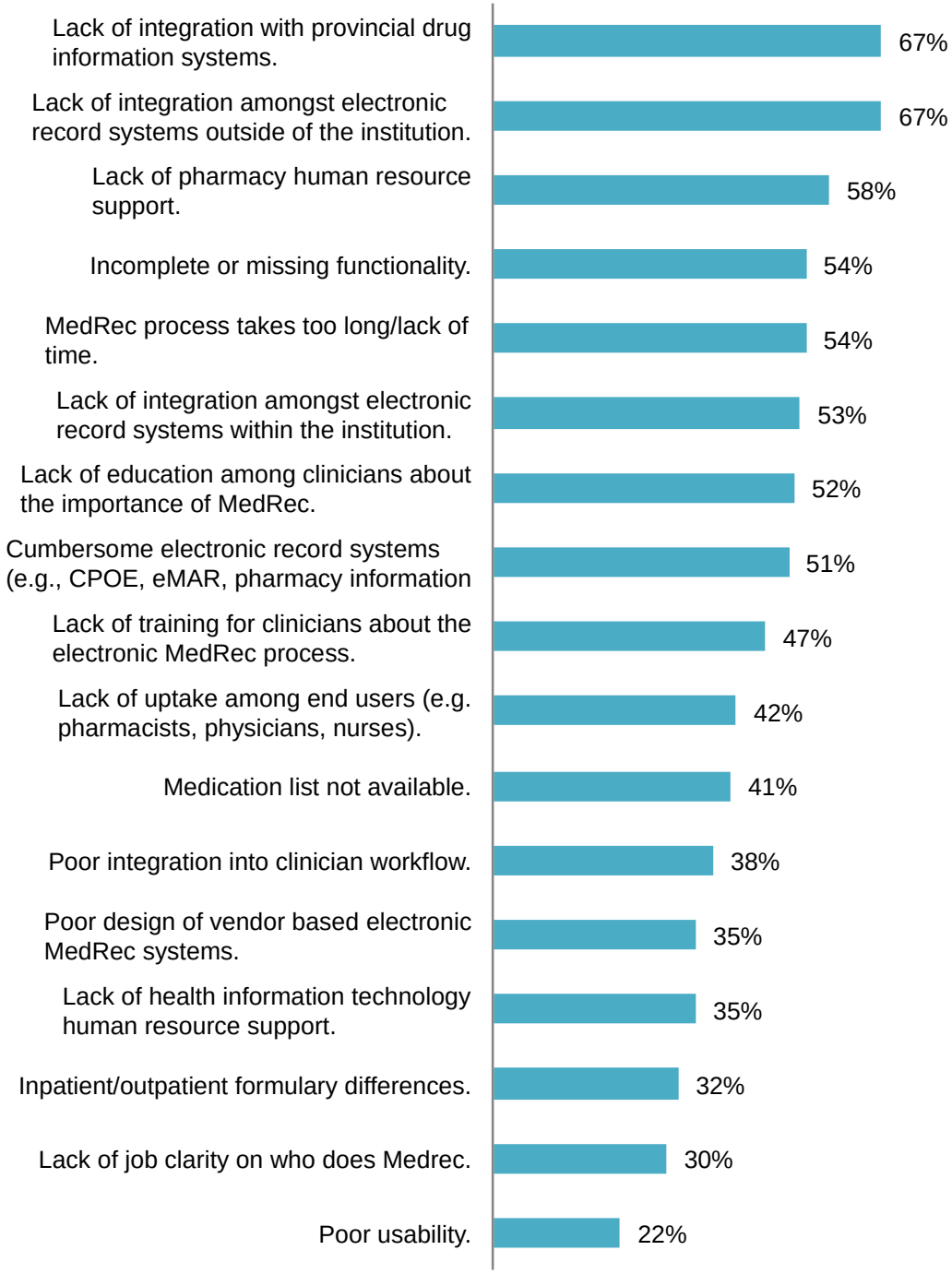

Figure C6. Ranked reported factors that impede eMedRec.

What Strategies Can Be Used to Facilitate Moving from Paper to eMedRec?

Strategies for Implementation from Canadian Telephone Interviews

The following are different strategies to consider regarding eMedRec Implementation that were identified during the phone interviews:

- Procure solutions that can grow with and adapt to organization.
- Keep the process the same as paper; just change the data entry method.
    - Try to replicate existing processes in eMedRec.
- Invest the time and resources.
- Get early buy-in and support from senior management.
- Secure key stakeholder involvement right from onset of the initiative.
    - Use a team approach, explain rationale and get feedback from all stakeholders.
- Have a strong commitment, be prepared for eMedRec implementation being a lot of work and persevere.
- Test the software before rolling it out.
    - With simulated cases before piloting.
    - Pilot on one unit (e.g., internal medicine, preoperative admission).
        - Refine the solution based on findings; it may even require iterative piloting.
- Collaboration between information services and pharmacy was key.
- One-on-one sessions with a MedRec nurse and sometimes a clinical analyst to overcome preconceived notions of the complexity and time required to complete MedRec.
- Emphasize that eMedRec can improve efficiency.
    - Transfer and discharge forms could be printed from the system and make the hybrid process more efficient than manual paper processes.
    - Discharge MedRec could be used to generate discharge prescriptions.
- Examine and optimize workflow.
    - Who is currently responsible for what tasks and where could changes be made to improve efficiency.
- Identify early adopters and use them as champions.
- Have a strategic directive (mandate).
- Standardization is challenging but valuable because consistency improves communication as patients transition between organizations and because providers may work at more than one organization.
    - Develop standardized forms for a province
    - Challenges associated with being a large organization (e.g., getting everyone to agree on the form, different facilities using different software or using the same software in different ways)
    - Form and process are standardized but workflows and responsibilities vary from facility to facility and are developed in-house
- eMedRec does not necessarily sustain itself
    - After implementation on three sites, re-evaluation revealed issues with MedRec at admission (e.g., people could not distinguish between BPMH and actual reconciliation)
    - Strategy to overcome low adoption was continuous /ongoing monitoring (evaluation and audits)

Conclusion

eMedRec implementations are gaining momentum across Canada. Forty-eight percent (48%) of respondents indicated that they have either partially or fully implemented the technology. Even though there are challenges associated with implementing the eMedRec, healthcare organizations have identified ways of overcoming these issues by:

- Procuring eMedRec solutions that can grow with and adapt to the organization
- Defining the project
- Securing senior management support
- Employing a multi-disciplinary implementation team
- Involving champions and physician leads
- Securing key stakeholder involvement and collaborating between services
- Working with IT in procuring, implementing and integrating eMedRec
- Conducting needs assessments, usability tests and workflow analyses with IT
- Investing time and resources (including adequate budget support)
- Starting with a small pilot and taking an iterative report to deployment and evaluation
- Educating staff about the importance of eMedRec
- Using differing training approaches (e.g. one-to-one training, unit-based in-services)
- Providing help line supports
- Using metrics to evaluate eMedRec

While the focus of this toolkit is on acute care, in the future we will see the use of eMedRec solutions that engage patients' using mobile technologies (Long et al, 2016, Heyworth 2014), that are used in primary care (Cadwallader et al, 2013); pharmacies (Comer D, 2015); and in the home (i.e. in conjunction with home care) (Kramer H, 2016). In summary eMedRec can improve patient safety and the quality of care received by patients. Many Canadian organizations are investing in eMedRec.