An analysis of a novel Canadian pilot health information exchange to improve transitions between hospital and long-term care/skilled nursing facility

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Abstract

Purpose – The purpose of the article is to assess the effectiveness, compliance, adoption and lessons learnt from the pilot implementation of a data integration solution between an acute care hospital information system (HIS) and a long-term care (LTC) home electronic medical record through a case report.

Design/methodology/approach – Utilization statistics of the data integration solution were captured at one-month post implementation and again one year later for both the emergency department (ED) and LTC home. Clinician feedback from surveys and structured interviews was obtained from ED physicians and a multidisciplinary LTC group.

Findings – The authors successfully exchanged health information between a HIS and the electronic medical record (EMR) of an LTC facility in Canada. Perceived time savings were acknowledged by ED physicians, and actual time savings as high as 45 min were reported by LTC staff when completing medication reconciliation. Barriers to adoption included awareness, training efficacy and delivery models, workflow integration within existing practice and the limited number of facilities participating in the pilot. Future direction includes broader staff involvement, expanding the number of sites and re-evaluating impacts.

Practical implications – A data integration solution to exchange clinical information can make patient transfers more efficient, reduce data transcription errors, and improve the visibility of essential patient information across the continuum of care.

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Originality/value – Although there has been a large effort to integrate health data across care levels in the United States and internationally, the groundwork for such integrations between interoperable systems has only just begun in Canada. The implementation of the integration between an enterprise LTC electronic medical record system and an HIS described herein is the first of its kind in Canada. Benefits and lessons learnt from this pilot will be useful for further hospital-to-LTC home interoperability work.

Keywords Interoperability, Electronic medical record, Long-term care, Transitions of care, Continuity of care documentation, Meaningful use

Paper type Case study

Introduction

The adoption of technology in the delivery and provision of patient care has become a necessity for healthcare organizations. Health information system (HIS) and electronic medical record (EMR) systems are common in acute and tertiary care facilities, long-term care (LTC) homes, private clinics, and family health teams across Ontario. A major problem with the rapid adoption of these technologies is the lack of integration and interoperability between systems. Interoperability refers to the extent with which technology can capture, exchange, interpret, and present shared data within different systems, while retaining the integrity of the data. Through a secure connection, the interoperability solution sends a patient specific, standardized data set that is first translated and then consumed by the receiving facility's software. While many organizations within the United States leverage health information exchange (HIE) solutions to support the exchange of patient health information, these solutions are not widely established nor adopted in Canada. The challenge, then, for Canadian clinicians and administrators lies at the intersection between facilities; when patients transfer but clinical information remains siloed within the sending facility's software system due to a lack of interoperability.

In the fall of 2020, St. Joseph's Healthcare Hamilton (SJHH) and St. Joseph's Villa (SJV) Dundas, an acute care hospital and neighbouring LTC home in Hamilton ON, Canada, completed a pilot project to bidirectionally share clinical information between the hospital Epic HIS (Epic Systems, Verona, WI) and the LTC home PointClickCare EMR, (PointClickCare, Mississauga, ON). The solution aimed to facilitate electronic clinical information exchange within patients' digital health records maintained at the acute care hospital and LTC home. This enabled clinicians to access clinical information from the patient's recent stay at the transferring facility, and the ability to review and reconcile the patient's medication and active problem list, immunization records, and allergies. Through the solution's integration, clinicians are also able to access read-only demographic information, previous encounter listings, test results, and more, through the transfer of a continuity of care (CCD) or clinical encounter summary document.

Background and literature

Electronic medical records and patient transfers

Patient transfers between healthcare institutions are challenging for clinical teams. While modern EMR software can offer detailed discharge summaries, these are often shared with receiving providers as paper-based documents and must be sent via patient transport or faxed to the receiving facility in order to be reviewed and incorporated into the patient intake process. This requires the timely transcription of clinical data into patient charts, the printing and delivery of these documents, and for questions or communication gaps to be addressed via phone or other method.

Information essential to delivering medical care is estimated as missing in over 90% of nursing home-to-emergency department (ED) patient transitions, which highlights the poor coordination that occurs between providers during the patient transfer process (Terrell *et al.*, 2009). Hustey (2010) maintains that poor communication during care transitions can lead to higher costs, increased healthcare utilization, and unnecessary duplication of services.

Communication, medication reconciliation, medication discrepancies and errors

Medication reconciliation is a patient-centred process required to improve patient care and outcomes in care transitions, which is focused on patient safety (American Pharmacists Association and American-Society of Health-System Pharmacists, 2012). Despite the importance of accurate medication reconciliation, Barnsteiner (2005) reported that half of all hospital-related medication errors and 20% of all adverse drugs events have been attributed to poor communication at care transitions. Medication discrepancies have been found in 75% of patients discharged from hospital to the admission of a skilled nursing facility (LTC home) (Sinvani *et al.*, 2013). Medication discrepancies are likely the result of missing documentation, the inability to access updated information, or the incomplete status of a best possible medication history (BPMH) and reconciliation. Results from the Gleason *et al.* (2010) study indicated that 36% of patients had medication errors at admission, of which 85% originated from the patient's medication history.

Long-term care patient population is a high-risk group

LTC patients can be some of the most fragile and clinically complicated patients to navigate the healthcare system. Unique healthcare issues in older patients impact morbidity, mortality, and other markers of health status such as symptoms, functional status, and health-related quality of life (Kanwar *et al.*, 2013). It is important to note that this patient population is more likely to suffer from multiple coexisting chronic conditions requiring polypharmacy, have transient or permanent cognitive impairment, loss of functional status, and lower health literacy (Sinvani *et al.*, 2013). Kanwar *et al.* (2013) found that 85% of assisted living and LTC patients met a definition of frailty, as defined by a gait speed of less than 1 metre per second, while also suffering from comorbidities and poor health-related quality of life.

The LTC patient population can regularly require ED visits and extended leave of absences from the home to address more acute concerns. It is estimated that one-in-four LTC residents will require an ED visit at least once every six months (Gruneir *et al.*, 2010), resulting in at least 60,000 transfers of LTC patients to Canadian hospital EDs in 2014 (Grant *et al.*, 2020). Declining mental health and cognitive abilities can result in a patients' inability to provide an accurate medical history and other pertinent information to their new care team.

Problem statement

Patient transfers between acute care hospitals and LTC homes present a challenge to staff at both facilities. The timely documentation of relevant, up-to-date, and accurate clinical data to support the delivery of patient care is burdensome for healthcare workers to manage; it is exacerbated by polypharmacy and multiple comorbidities in a population that may also present with cognitive impairment. Clinical data is also likely to be stored in separate software systems without universal access or interoperability.

Although international efforts have been conducted to evaluate the interoperability between existing established EMRs and HIS (Al Jarullah and El-Masri, 2012; Barbarito *et al.*, 2015; Crichton *et al.*, 2013; Frontoni *et al.*, 2020; Kazemi-Arpanahi *et al.*, 2020; Souza *et al.*, 2019; Wang, 2019), much groundwork has been conducted to prepare the HIS landscape for interoperability in Canada, specifically Ontario (eHealth Ontario, 2022). To the authors' knowledge, this is the first case report specific to the evaluations of an integration solution between a Hospital HIS and an LTC EMR in Canada. This case report examines the implementation of a data integration solution with a focus on analysing the visibility of clinical information, utilization, reported clinical benefits, and strategic lessons learnt for those undertaking future implementations of data exchange solutions within similar settings.

Project implementation

Project resources

The implementation of the data integration solution required project resources from PointClickCare as well as hospital and LTC home administration teams, including: the privacy office, clinical unit leadership, health information management, information technology and informatics teams, training and curriculum design, and project management.

All authors were involved in the research process and actively contributed to the development and preparation of the manuscript. Authors DP, TA, CH, FE, MV, CE, HB, GR also supported the pilot implementation alongside additional team members referenced in the acknowledgements on tasks as appropriate to their role.

Training and change management initiatives

Training of hospital users was completed by the hospital's digital education team. Training delivery in the LTC facility was at the discretion of the EMR vendor; however, due to the COVID-19 pandemic and desire to deliver training through either self-service or virtual environments, the following training and communication strategies were developed and executed for the pilot project:

(1) eLearning videos and tip sheet documents to support self-service, asynchronous training

(2) Virtual training sessions with clinicians and providers

(3) Training delivery through a "Train the Trainer" model

(4) Training content and material within the hospital's software upgrade training platform, including content focused on the clinical department and user roles

(5) Use of existing distribution channels to communicate functionality of the solution and the participating healthcare organizations

Technological design

Epic is a hospital information system (HIS) used around the world. HISs are sophisticated EMRs that enable clinical information to be shared among many users and integrate other functions, such as scheduling, communication tools, administrative and finance tools, and inventory tracking. Hospitals operating Epic can utilize existing functionality and server infrastructure to integrate data from the PointClickCare EMR through PointClickCare's Post-Acute Care Network Management solution. Patient health information is communicated electronically using an HL7 interface to exchange admission, discharge, and transfer (ADT) information. Mutual Transport Layer Security (TLS) certificates support connectivity and the transfer of CCD and clinical encounter documents. Clinical data is kept secure and private using a virtual private network (VPN) tunnel (see Figure 1).

Clinical data exchange is supported by the Care Everywhere module, Epic's health information exchange and interoperability platform. Endpoint configuration within this tool offers a way to differentiate patient discharge documentation locations. Using filters at the interface or data exchange engine and settings with the LTC EMR, patient health information is suppressed or is sent to LTC home EMRs that are configured to support information exchange with participating hospitals.

Benefits realization

As a case report of the pilot implementation of an interoperability solution between a hospital and an LTC home, the intention was to describe the implementation strategy and digital solution.

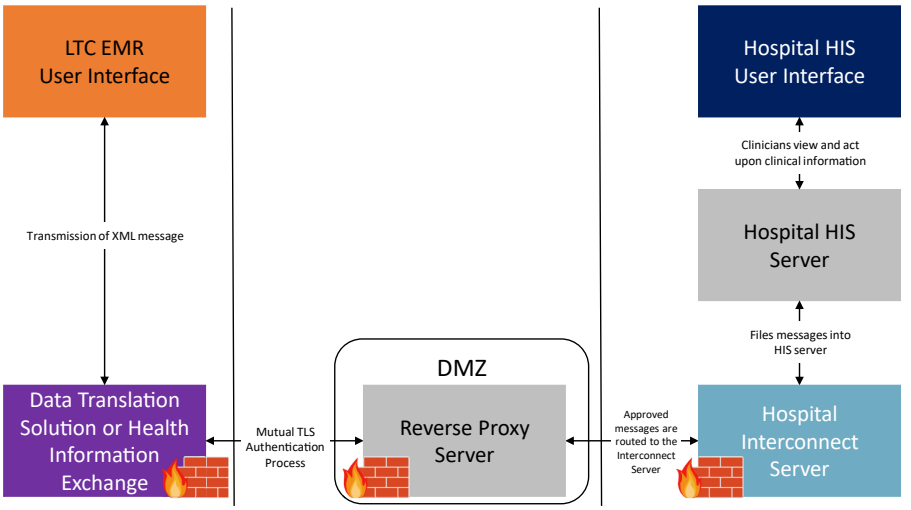

Figure 1. Information flow diagram

However, the availability of preliminary data on the use of the solution prompted the exploration of patterns and perceptions using the methods described below, as well as to summarize early utilization benefits realized. Recognizing the case study nature of this report, the limitation of the following methods and the resulting analysis are presented in subsequent sections. The evaluation component of this case report was reviewed and approved by the Hamilton Integrated Research Ethics Board (HiREB).

Utilization statistics

A retrospective review of patient transfers between SJHH and SJV from September 28, 2020 to August 31, 2021 was completed using the HIS and EMR of the hospital and LTC home, respectively, to gather data on the utilization of the electronically exchanged information. The review analysed the availability of discrete data from the sending facility and whether such data was reconciled in the chart by clinical staff for the following data sets: allergies, active medication entries, problem lists, and immunization administration documentation. It is important to note that the functionality provided to clinicians allows the hospital staff to assess adding or removing the discrete data documentation directly into their EMR or HIS based upon their clinical judgement. In addition, while the utilization review included the number of documents exchanged, it did not evaluate the use of or views of read-only content provided through the CCDs or clinical encounter summary documents.

Utilization survey and interviews

A digital survey (SurveyMonkey) was developed to better understand efficacy of training, clinical use, workflow efficiencies, challenges, and adoption rates from ED physicians and LTC clinicians. The total number of questions asked were 30, of which 3 questions were allocated to training and the remaining divided between the other categories. The total sample size was small, with 33 ED physicians and residents, 1 LTC physician, and 1 LTC nurse practitioner. Links to the online survey were distributed by the Chief of Emergency Medicine at SJHH and the Medical Director at SJV Dundas. Clinicians were invited to interview via email sent directly from project team to LTC clinicians and from Chief of Emergency Medicine to ED physicians. Structured interviews explored their experience with

the functionality and usefulness of the solution, time savings (perceived and actual), and evaluation of the change management initiatives. To encourage participation in follow up interviews, participants were given the option of virtual interviews or in-person interviews in the workplace (once pandemic restrictions were lifted).

Results

Utilization results

Over the duration of the post implementation analysis, the data integration solution exchanged clinical health information for only 34 patient transfers between the LTC facility and study hospital, of which 28 transfers were for unique patients.

As part of the clinical data exchanged, there was a total of 1,010 discrete data points available for reconciliation in the hospital's chart. Figure 2 provides a breakdown of discrete data by record type.

Three clinicians at the hospital reconciled 30 active medications and 11 allergies records into the local patient's electronic health record (4% of all possible data points). The 41 reconciled data records are a combination of both the action of removing the documentation from the patient's chart as well as incorporating net new data from the sending facility.

End user (clinician) feedback

The response rate for the clinician survey was 7/33 (21%) ED physicians and 1/2 (50%) LTC home staff for an overall response rate of 8/35 (23%) of eligible respondents providing feedback. Interviews were completed by 7 clinicians, who could have been unique to the 7 respondents of the survey due to anonymity of survey responses. 6 were conducted in person and 1 virtually.

Of the responses provided for number of years of practice, 50% reported practicing for over 16 years, and 37.5% reported 5–10 years of practice experience. The remaining respondents, 12.5%, reported practicing between 1 and 5 years. Surveys were completed in their entirety by 5/8 (63%) of respondents, with the remaining 3/8 (37%) completing 40% of the survey questions with missing questions related to benefits, outcomes, and training.

Similar to the breakdown of the survey respondents, 43% of interviewees reported practice experience of over 16 years, 43% reported 5–10 years and 14% reported 10–15 years.

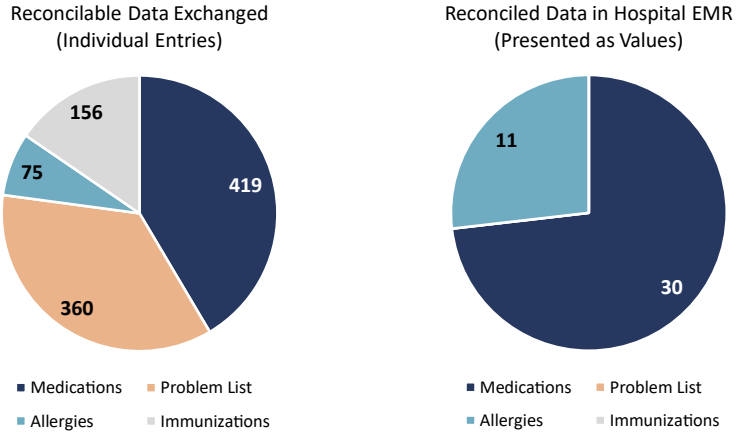

Figure 2.
Discrete data exchanged (total and reconciled) through the integration solution

The duration of interview among ED physicians ranged between 4 min and 15.5 min with a mean duration of 9.7 min. The single LTC clinician interview lasted 19.2 min.

Of those interviewed, all respondents indicated they had used an EMR in their practice for at least 3–5 years or longer, with 85% indicating they identify as either very or extremely proficient with the use of EMR software systems. However, for those respondents who were interviewed, only 29% had reported either reviewing or reconciling exchanged clinical data.

Value of external data exchange

Despite a low data exchange rate, 80% of those who provided a response strongly or moderately agreed that information available from outside sources is relevant and allows them to make patient care decisions more quickly. In addition, 80% of those who provided a response indicated that sharing clinical information electronically between healthcare institutions would improve the quality of patient care and patient safety. Clinicians noted improved visibility of information for the care team and the ability to better track medications and allergies as rationale for patient safety improvement. Of those interviewed, 71% indicated they were extremely or very confident that electronic reconciliation of data would reduce transcription errors when compared to the manual entry process. This was not supported by the actual proportion of study hospital users (3) who actually reconciled LTC data.

Clinicians were asked to rank the importance of the discrete data fields available for reconciliation. The ED physicians prioritized medications, followed by problem list, allergies, and immunization administration data; while the LTC clinician prioritized problem list first, followed by medications, immunizations, and allergies. The top two data categories deemed important by clinicians aligned with the perceived time efficiencies of the reconciliation process (Figure 3). One respondent noted, "[We] were excited at being able to see all of the data in one place. It is a very easy process to use and we hope to see this go Ontario-wide." With ED physicians estimating time savings and actual time savings reported only by one LTC clinician, it is not possible to compare differences between the practice settings.

Supplementary rationale for the low perceived time efficiencies for immunization documentation confirmed that the responsibility of documenting this clinical data is role dependent. In the ED, "immunization records are typically reviewed by our nursing teams, and this documentation practice is outside of my role," explained an ED physician. Such is true for other activities, such as medication reconciliation in the ED – typically completed by

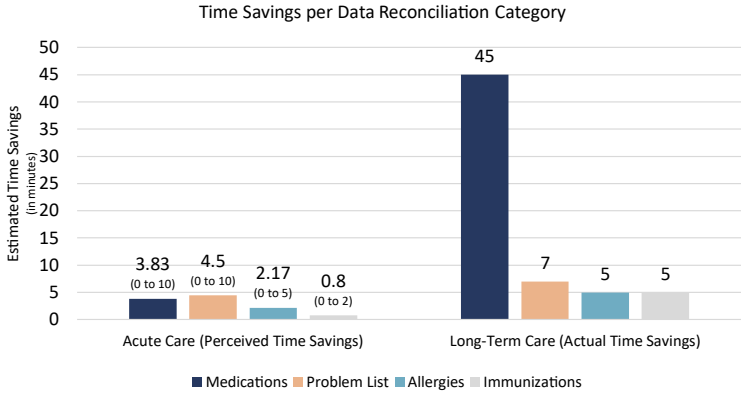

Figure 3.
Time savings per data reconciliation category

nursing, pharmacy technicians, pharmacists, and admitting physicians – rather than ED physicians.

Due to the low adoption rates of the data exchange solution, there were few reports of actual time savings identified through this study. Clinicians did not report increased face-to-face time with patients in the ED context, but did in the LTC setting. Neither setting reported an increase in patient throughput.

Adoption barriers

Evaluation of the adoption and meaningful use of the solution were limited due to lower than expected patient transfer volumes during COVID-19. A consistent theme identified during the interviews was a lack of awareness of data exchange functionality. While some respondents understood the benefits of the tool, many were unaware that it was operational within their organization, highlighting significant gaps in the training and change management activities.

Varied responses were recorded with regards to whether external information available through the data integration solution was accurate. Some respondents indicated they were "not sure" in response to the question of the accuracy of the information exchanged. Only 40% of responses provided, indicated strong or moderate agreement that information available from outside sources was accurate.

As noted, survey and interview responses indicated that the integration (health information exchange) with only one LTC home was a significant barrier to adoption. "We tend to see a lot of patients from other Hamilton homes, the Niagara Region and Hamilton residents who have also visited a non-Epic hospital," reported an interview respondent. SJV Dundas is one of 24 LTC homes to whom the study hospital regularly discharges patients and one of 86 eligible homes in the region. Without a high volume of patients being transferred, it is difficult to encourage lasting change to clinical workflows. Despite the above barriers, all respondents indicated they were not reluctant for any reason to use the data integration solution; although, in the open comments, some did warn about "increased clicks" in the HIS.

Training efficacy and content delivery

Both the survey responses and interviews indicated moderate dissatisfaction with both the quality of the training content and delivery as provided by the LTC EMR vendor and the hospital team, to support clinical data exchange use. Of the ED physicians who provided a response, 3/4 (75%) moderately or strongly disagreed that the education content was appropriate. Respondents reported that a training model incorporating both in-person and asynchronous options, as well as more frequent and direct reminders of system functionality, would encourage increased awareness and adoption. The feedback gathered on teaching methods will be shared with both the hospital's and the vendor's digital training teams to support and improve future implementations.

Limitations

As this was the first Canadian interoperability project between PointClickCare and a hospital using Epic, the *a priori* scope was intentionally small. While the implementation team specifically targeted manageable transfer volumes at the outset, COVID-19 Public Health policies impacted the number of patients transferred between the hospital and participating LTC Home. It is possible that if there were more transfers, then clinicians' behaviour around reconciling data may have changed during the study period as they became more comfortable with the process. As this is only preliminary feedback, the author's endeavour to investigate this further as a future direction over a longer time period and with a larger number of end users.

In addition to the available sample size being limited by the *a priori* decisions of the implementation team and the COVID-19 pandemic, our survey response rate of 23% did not meet the average 35% Canadian physician response rate to web-based surveys (Cunningham *et al.*, 2015). However, it did fall between that and another survey (13%) of Canadian emergency medicine physicians also completed during the COVID-19 pandemic (Gaucher *et al.*, 2021). Pandemic related activity resulted in increased clinical or administrative work with reduced availability to complete surveys and interviews. Further, due to the pandemic LTC staffing crisis, the train the trainer model was not extended to additional clinical providers such as nurses or nurse practitioners. Therefore, our total possible sample size was smaller than expected. Social distancing measures meant that the study team could not facilitate workplace interviews until Public Health and institutional policies around research allowed for it. With significant COVID-19 staffing pressures on LTC facilities, only the original two clinicians were able to participate; perhaps worsened by the train-the-trainer approach. Further, redeployment and pandemic related projects meant that the interoperability project team was unable to address adoption and training issues in real time.

Lessons learnt

ED and LTC home clinicians identified two important themes for implementing a data integration solution for the exchange of clinical data:

(1) Compliance with reviewing and updating patient clinical charts is important when arriving/admitting patients into the receiving facility. The data reconciliation process should be embedded, where possible, into existing workflows and clinical practice.

(2) ED physicians, residents, LTC home physicians, and nursing staff, regardless of years of experience or technical proficiency, learn using different training methodologies and approaches.

Workflow design

To optimize the use of data integration tools and clinical information data exchange, querying or referencing external data sources must be completed in a timely manner that aligns with the patient's ED arrival or admission journey. Review and reconciliation of discrete data fields should happen as part of the triage process to provide relevant clinical information to the patient's Care Team. Reconciling outside information will provide the Care Team with up-to-date clinical information that will drive clinical decision support and software warnings for interactions, as well as reduce manual transcription processes. Furthermore, reconciling external medication data prior to completing a BPMH, and a complete medication reconciliation process if required, will improve both provider and pharmacy workflow efficiencies.

Implementing an integration solution should also focus on the end user experience and complexity of the user interface. Although this solution is embedded within the HIS software, interviews reflected on the importance of the usability of the solution and how end users will engage with the data: "The work effort (number of clicks) to use this technology will definitely impact adoption rates", and "if I have to leave the HIS/patient chart to obtain data, I will use the tool a lot less".

Training and communications strategy

The research team determined it would be important to evaluate end user opinion of the proposed training as it could impact adoption. The training and communication strategy for the data integration solution was perceived as ineffective at informing clinical end users on

the value proposition, workflow benefits, and functionality of reviewing and acting upon clinical information available from outside sources.

Clinician's technological proficiency did not appear to have an impact on the training strategies' efficacy based on feedback provided. Further engagement, training, and communication is required to support clinical teams to improve adoption of this new clinical tool through various delivery methods to reinforce key learnings. It is unclear if the low volumes of transfers (i.e. little re-enforcement and long gaps between use) may have contributed to clinicians' impression of training gaps. Several ED physicians interviewed did note that e-learnings, emails and ongoing reminders of functionality, and in-person training may have helped with adoption.

Future directions

This pilot project sought to evaluate the implementation of a novel Canadian health information exchange to improve transitions between an acute care hospital and an LTC home. Expansion to a greater number of facilities to increase the number of patient transfers will uncover more granular information regarding data reconciliation metrics and user feasibility and acceptability. By sharing the technical and adoption learnings from this case report, the goal is that the onboarding of the city's remaining 26 LTC facilities (and region's 86) can be expedited. Applying the audit and feedback methodology already used in Ontario LTC facilities can improve awareness and utilization (Mulhall *et al.*, 2020). In addition, a shift in focus towards triage nurses or admitting physicians may likely be more representative of those who would regularly complete the reconciliation process.

Future work should focus on identifying discrete data variables that are viewed but not reconciled and on strategies for building greater confidence and trust of inter-facility problem lists to address this potential hurdle. Despite strong beliefs that having information between transfers would help clinical decision-making and that reconciling such data would save time and avoid transcription error, hospital clinicians did not uniformly view and almost uniformly did not reconcile data. Some acknowledged that they were not aware of the process and relied on other health workers for that information.

Development of a more comprehensive training and communication strategy is necessary to facilitate future growth of this program and implementation to new facilities. Widespread adoption and routine reconciliation of data may encourage greater confidence in outside information.

The advanced functionality of modern health information systems was not fully exploited during this pilot. Dashboard reports can display how many patients were triaged from an LTC Home and which patients had their medications, allergies, immunizations, or problem list entries reconciled. Inpatient care units could use this information as a second opportunity to review and reconcile data before discharge.

Survey, focus group, and interview methods targeting patients and their families may help understand change to meaningful patient reported outcomes. Observational studies may elucidate actual time saved from avoidance of transcribing health information. Cohort or randomized controlled trials could assess any downstream effects on patient safety and healthcare system efficiency, such as the number of medication errors, vaccination rates, readmission rates and healthcare system utilization, and patient clinical outcomes, such as quality of life, morbidity, or perhaps even mortality.

Conclusion

To our knowledge, this pilot represents the first successful interoperability project between an LTC home using PointClickCare and a Canadian hospital. This pilot did demonstrate that

hospitals and LTC homes can exchange digital information and that clinicians see potential of incorporating the reconciliation of these data into their workflows. Over the course of the pilot, 34 patient transfers were completed that exchanged 1,010 data points for reconciliation with 11 allergies and 30 medications directly reconciled into the patient's chart.

Emergency physicians believed the workflow could save as low as 48 s if only immunizations were reconciled and as high as 11.3 min if all possible data were reconciled. These were only estimates; however, it was acknowledged in user interviews that other ED staff typically enter these data. Alternatively, LTC clinicians noted real time savings that ranged between 5 and 62 min per patient with the largest time savings coming from reconciling medications (45 min).

A revised training model will be developed to support pilot project expansion that includes adding ED triage nurses and admitting physicians into training scope and including a variety of educational formats and reinforcement of workflow benefits and the value proposition.

Acknowledgments

Pilot Project Implementation Funding Source

CAN Health Network.

The Coordinated Accessible National (CAN) Health Network provided funding to support the pilot implementation of PointClickCare's Post-Acute Care Network Management solution. The CAN Health Network was established in 2019, to work with Canadian subject matter experts to pilot and subsequently commercialize new technologies, and provide a market for participating health care providers to procure innovative, leading technological solutions. Without project funding, the implementation of the data integration solution, and pilot project would not have been possible. While the CAN Health Network did not fund this study, the opportunity to submit this journal article would also not have been possible without their previous financial, and project implementation support.

Project Implementation Stakeholders

PointClickCare

PointClickCare is a market leader in creating cloud-based environments where providers, patients and payers eliminate data silos between care settings. A Canadian healthcare company, the PointClickCare EMR is used in the majority of long-term care homes in Ontario, Canada as well as a significant footprint in the United States. Their Post-Acute Care Network Management software solution was chosen for the pilot due to its proven ability to integrate with the Epic HIS software.

St. Joseph's Healthcare Hamilton

St. Joseph's Healthcare Hamilton (SJHH) is a member of the St. Joseph's Health System (SJHS) and serves patients in the Hamilton, Niagara, Haldimand, and Brant communities. SJHH is a leading academic health science and research centre and is affiliated with both McMaster University and Mohawk College, and is the home to The Research Institute of St. Joe's Hamilton. The hospital has 443 acute care beds, 298 non-acute care beds and specializes in the delivery of respiratory care, kidney urinary programs, mental health and additions; surgical services including minimal access surgery; and women's and infants' care.

The implementation of the data integration solution, and pilot project would not have been possible without the support and leadership of Tara Coxon, Andriana Lukich, Carina Andreatta, David Walther, Shawn Fletcher, and Lee Hawley.

St. Joseph's Villa Dundas

St. Joseph's Villa (SJV) is located in Dundas, Ontario, Canada and considered a leader in long-term and palliative care. The Villa currently houses 390 long-term care residents and was the pilot facility participating in the data integration implementation. St. Joseph's Villa receives the most patient discharges to a long-term care home from St. Joseph's Healthcare

Hamilton, and actively transfers residents back to the hospital for more acute care needs. The St. Joseph's Villa Medical and Administrative teams participated within the implementation process, supporting decision-making, review and assessment of contractual agreements; training and end-user adoption of the Post-Acute Care Network Management platform.

As a member of the Project Implementation Steering Committee, the research team would like to acknowledge Mieke Ewen's ongoing support of this work.

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