February 4th, 2023

Institute for Safe Medication Practices Canada
4711 Yonge Street, Suite 706
Toronto, Ontario
Canada M2N 6K8

RE: Evaluation of the Strengthening Medication Safety in Long-Term Care – Quality Improvement Stream

Please find attached our proposal in response to the Request for Proposals posted on February 4th, 2023. At *Acumen Consulting* we are focused on delivering a client-centered evaluation that meet your needs. After reading your request for proposal we are confident that we can effectively and efficiently evaluate the implementation and outcomes of your quality improvement initiatives. For this evaluation, we are proposing both a process and outcome evaluation that will report on the: (1) design and implementation, (2) early outcomes, and (3) and potential spread, scale, and sustainability of the Strengthening Medication Safety in Long-Term Care – Quality Improvement Stream.

As per the Request for Proposals, please find the following in our proposal:

- A brief synopsis of the program
- Proposed logic model
- Proposed evaluation design
- An evaluation matrix
- Anticipated challenges and mitigation strategies
- Relevant Canadian Evaluation competencies

Acumen Consulting is an experienced team of evaluators who, true to our name, are characterized by keen judgement, knowledge, skill, and innovation. If you have any questions related to our proposal, please do not hesitate to contact us. Thank you for reviewing this proposal and we look forward to working with you on evaluating your timely and important project.

Sincerely,

The Acumen Consulting Team

ACUMEN
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Proposal for the Evaluation of the Strengthening Medication Safety in Long-Term Care – Quality Improvement Stream

Prepared for:

The Institute for Safe Medication Practices Canada

Prepared by:

Acumen Consulting

February 4th, 2023

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1. Project Synopsis

1.1 Program overview

The Institute for Safe Medication Practices Canada (ISMP Canada)

The Institute for Safe Medication Practices Canada (ISMP Canada) is an independent, not-for-profit organization dedicated to preventing medical errors in all healthcare setting.

ISMP Canada creates impact in the reduction of healthcare setting medical errors by, (1) analyzing medication error incident information, (2) identifying factors that may have contributed to medical errors, (3) providing recommendations for presentation of harmful medication incidents, and (4) providing education and resources to healthcare professionals, patients, and the general public to help reduce the risk of medication errors.

Following findings that the rate of Adverse Drug Events (ADEs) in two North American academic long-term care homes was 9.8 per 100 resident months (42% of which were deemed preventable) (Gurwitz, et al., 2005), and recommendations from the *Gillese Inquiry* (The Honourable Eileen E. Gillese Commissioner, 2019), ISMP Canada was asked to develop and launch the Strengthening Medication Safety in Long-Term Care (SMS-LTC) initiative. The Ontario Ministry of Long-Term Care has since provided funding for this initiative to be implemented across Ontario.

The Strengthening Medication Safety in Long-Term Care (SMS-LTC) Initiative

The SMS-LTC initiative was designed to improve medication management and safety for elderly and disabled individuals receive care at Long Term Care homes in Ontario. This initiative is divided into four streams: (1) measurement and evaluation, (2) incident analysis, (3) quality improvement, and (4) tools and support. The focus of this evaluation will be on the third stream, quality improvement.

SMS-LTC: Quality Improvement Stream (QIS)

The Quality Improvement stream (QIS) of the SMS-LTC Initiative is a pilot program conducted in Ontario to support LTC homes in continuously improving their medication practices. Currently, the initiative is being piloted in 10 LTC homes in Ontario, referred to as Champion homes. Within each Champion Home is a QI team that is responsible for implementation of the SMS-LTC initiative. QI teams consist of a wide range of stakeholders such as LTC staff, residents, family members.

Evaluation Needs

Recognizing the need to learn from, measure and better understand the implementation of the SMS-LTC: QIS, so that this initiative can be optimized and scaled up, ISMP Canada would like to conduct an evaluation. The evaluation will appraise the design and implementation of the project on 10 Champion Homes, measure the short-term outcomes generated by the QIS, and explore

how the principles of equity, diversity, inclusion, and sustainability (EDIS) can be incorporated in the evaluation and delivery of the program.

1.2 Stakeholders

Figure 1: Stakeholders involved in the SMS-LTC Quality Improvement Pilot

Based on available information, we have identified four types of stakeholders impacted by the evaluation: Implementers, Decision Makers, Partners, and Participants (Centre for Communicable Disease, 2015)(see Figure 1). Implementers are those responsible for the operation of the SMS-LTC Quality Improvement Pilot. Decision makers are those who can dictate what will happen in the project whereas partners actively support and invest in the work being done. Lastly, participants are those who are receiving services from SMS-LTC Quality Improvement Pilot.

1.3 Evaluation purpose

The main objectives of this process and outcome evaluation are:

- To evaluate the fundamental design and implementation of the SMS-LTC Quality Improvement Stream.
- To evaluate the early outcomes generated by the SMS-LTC Quality Improvement Stream.
- To evaluate the potential spread, scale, and sustainability of the SMS-LTC Quality Improvement Stream.

1.4 Evaluation scope

The focus of this evaluation is the pilot program of the SMS-LTC QIS initiative. The pilot program involves 10 out of 627 LTC homes in Ontario, approximately 1.6% of LTCs. The Champion Homes were selected purposively by ISMP to reflect diverse resident needs, geographic locations, sizes,

and ownership models. This evaluation will focus on the process and early outcomes of the SMS-LTC Quality Improvement pilot as requested.

1. Proposed logic model

Please see **Appendix A** for the full Logic Model.

2.1 Logic model narrative

The SMS-LTC QIS initiative's logic model outlines the inputs, activities, and outputs of the project, as well as the short, medium, and long-term outcomes. There were five activity groups that we used to stratify activities: (1) related to the implementation of priority projects identified by LTCH QI teams; (2) the establishment of a Stakeholder Advisory Committee; (3) Regular Medication Safety Self-Assessments (MSSAs); (4) Mapping and Improvement of medication processes through QI team training and coaching; and (5) a final evaluation for the project. These activities lead directly to short-term outcomes that were identified as a priority for the project, and lead to the long-term goal of a sustainable, scalable, and continuous implementation of quality improvement processes of medication practices at LTC homes. Below, we have outlined the assumptions, external factors and risks of the program.

Assumptions identified in our logic model are: (1) that the QI team members are representative of the resident and stakeholder population; (2) that the QI program takes into account specific resident needs (i.e: due to cognitive impairment, or polypharmacy). If these two assumptions are not met, it could lead to QI initiatives that are not inclusive or don't prioritize resident needs.

External factors identified that could hinder the project are: (1) that increases in COVID-19-rates and outbreaks may lead to decreased quality of care due to workers taking time off, and worse patient outcomes; (2) Provincial Elections happened during the project (2022) and will happen during any scaling of the project (2026), which might lead to changes in project funding, sustainability, and scalability, or even the overall mandate of Ontario Health Teams.

2.2 Negative Logic/Risk

At Acumen Consulting we take a proactive look at how programs may have an adverse or harmful outcome, referred to as negative or dark logic (Bonell, Jamal, Melendez-Torres, & Cummins, 2014) (Onyura, Mullins, & Hamza, 2021). As outlined in our logic model (**Appendix A**), a potential unanticipated negative outcome is that the outcome of improving the transitions between hospitals and long-term care homes could result in an increase in Alternate Level of Care (ALC) days. The Canadian Institute for Health Information uses ALC to refer to patients who occupy hospital beds but do not require the intensity of care that is provided in that hospital setting (Canadian Institute for Health Information, 2023) (Ontario Health, 2021). Improving the transition of care from hospital to LTC homes could result in patients spending more time in hospital, until appropriate transition documents and modalities are established, resulting in longer ALC. Increased ALC are not only result in longer hospital wait times for those who require

care, but can also increase the likelihood of patients experiencing specific hazards of hospitalization, such as hospital-associated delirium, functional decline, incontinence, falls and pressure injuries (Ontario Health, 2021) (Mudge, McRae, Phil, & Hubbard, 2019).

To monitor this potential impact, the proposed evaluation framework has built into it the monitoring of ALC outcomes to assess if SMS-LTC: QIS leads to longer hospital stays. If this is found to be the case, modification to methods of improving the transitions would need to be explored to mitigate this unanticipated harmful impact.

2. Proposed evaluation design

3.1 Evaluation approach

Evaluation type: Process & outcome

To assess the SMS-LTC QIS pilot, we are proposing a process and outcome evaluation that incorporates implementation science concepts and frameworks and an equity, diversity, inclusion and sustainability (EDIS) lens.

Integrated Knowledge Translation

Guided by the Collaborative Model for knowledge translation, an Integrated Knowledge Translation (iKT) approach will be used in this evaluation to ensure that stakeholders, particularly program participants, are involved in the development, implementation, interpretation, and dissemination of the evaluation (Baumbusch, 2008). Research has shown that this participatory approach can improve the credibility of the evaluation findings as well as its uptake and dissemination (Van de Ven & Johnson, 2006) (Kalibala & T, 2019) (Centre for Communicable Disease, 2015). Prior to conducting the evaluation, we will meet with the Advisory Committee for constructive feedback to finalize the evaluation priorities and questions. After the evaluation plan is finalized, the Advisory Committee will be involved in the interpretation and dissemination of the results of the evaluation.

Implementation Science: CFIR & NASSS

Two implementation science frameworks will guide this evaluation: the Consolidated Framework for Implementation Research 2.0 (CFIR), and the Non-adoption, Abandonment, and challenges to Scale-up, Spread, and Sustainability (NASSS) framework. CFIR highlights in-depth contextual factors that could influence the implementation of the SMS-LTC QIS initiative through five domains: innovation, inner setting, outer setting, individuals, and implementation process (Damschroder, Reardon, Widerquist, & Lowery, 2022). NASSS helps predict and evaluate the success of implementing, scaling, and sustaining innovations by considering seven domains: the illness/condition; the technology; the value proposition; the adopter system; the health or care organization(s); the wider context; and adaptations over time. Each of these domains can be characterized as simple, complicated, or complex. More complex interventions are predicted to

have more challenges that may prohibit the success of innovations implementation, scale-up and spread.

CFIR will be used to evaluate the fundamental design and implementation of SMS-LTC QIS by informing the development of evaluation questions, interview guide and measurement tools. NASSS will inform the development of the interview guide for evaluating the the potential spread, scale, and sustainability of the quality improvement stream.

Equity, Diversity, Inclusion and Sustainability (EDIS)

An EDIS lens is applied throughout the evaluation through the application of Health Equity Impact Assessment tool (detailed in data collection methods) and demographic and geographic sub-analyses (detailed in data analyses).

3.2 Data collection methods

Quantitative methods:

Pre- & Post- Assessments: Pre- & Post- Assessments will be used to collect information on the knowledge and understanding of quality improvement concepts and tools (i.e: process mapping, root cause analysis and data analytics). The pre-assessment will also include questions on participant demographics, in order to get a better understanding of the diversity within the QI team. We will work with an educational consultants and community partners to make sure that the questions are appropriate for all QI team members, including residents that might have some form of cognitive impairment.

Post-Activity Feedback Survey: The post-activity feedback survey is conducted at the same time as the post-activity assessment and measures the participant from the QI team's experience and learning. This type of assessment can provide information on the social validity and perceived usefulness of the workshop or online training activity, as well as the self-perceived changes in knowledge from program participants.

Document Review/Monitoring data: Many project outputs will be collected using a review of the existing documents, as well as the monitoring data that is regularly collected by ISMP Canada. This involves reviewing and reporting on monitoring data on workshop and online learning registration and attendance, as well as the outcomes regularly collected by ISMP Canada (especially those related to ADEs and ALCs). Document reviews and collecting monitoring data are a less intrusive way of collecting data on the breadth of the program and are, with good record keeping and high accuracy.

Medication Safety Self-Assessment: MSSAs will be used to identify areas (i.e resident and family engagement, care team composition…) that need improvement. These MSSAs have been conducted yearly in the 10 LTC facilities that are part of this project but have also been conducted in over 852 facilities across Canada since 2006. The results of the MSSAs can be compared to a

control group of health facilities in Ontario that are comparable (geographic location, size, population, ownership model), but are not part of the pilot project.

Champion Home Final Evaluation: We suggest that Champion Home Final Evaluation should include the voices of the LTC facility participants as well as staff. The Final Evaluation should include questions related to participant experiences and health outcomes. In terms of participant experience, the final evaluation should include questions on quality of care, social validity of the program, and ability to engage in the QI process. In terms of health outcomes it should include EQ-5D-5L (Herdman, Gudex, A, & MG, 2011) – a five-level health status measure, that has been used in other studies trying to improve health outcomes through improved prescriptions in Long-Term Care facilities (Ashizawa, Mishina, & A, 2022). The questionnaire for staff should include questions on implementation, barriers and enablers, scalability, and sustainability.

Qualitative methods:

Focus Groups Discussion: Three different types of focus groups will be conducted, (1) with residents of the Champion Homes selected, (2) with the four types of stakeholders involved and (3) with QI team members.

(1) For the focus groups of LTC-home residents, there will be two male and two female focus groups each composed of 6-8 LTC-residents. Patients will not be able to participate if the staff at the LTC-facility, or if the evaluation team, determines that they have cognitive impairment that might hinder their ability to consent to the focus group discussion. The purpose of these focus groups will be to get the opinions of participants on their participation and engagement with the medication use process, as well as their overall satisfaction with their quality of care.

(2) Focus groups with key stakeholders (QI teams, partners, and decisions-makers) will identify the barriers and enablers in implementation the dimensions of medication safety. These results will also assist in any future scaling of the project. There will be 4 focus groups of 6-8 people with a mixture of QI team members, partners, and decision-makers. Care will be taken to ensure a diversity of participants and that all Champion Homes are represented.

(3) Focus group discussions with QI members, that participated in the learning activities related to mapping and improving the medication processes (i.e: workshops, online modules, coaching and facilitation), will focus on the support QI teams received and the experience of the QI teams in meeting their objectives. There will be 4 focus groups conducted. Care will be taken to ensure that QI teams members of various backgrounds (i.e: LTC-home residents, family caregivers, registered nurses, personnel support workers, etc) are represented and that all Champion Homes are represented.

Key Informant Interviews: Key Informant interviews (KII) will be conducted with QI team member, as well as decision-makers, program partners, and implementers. These KIIs will help determine the sustainability needs of the project. Partners are included because they are both

stakeholders for the project as well as potential knowledge-users. The key informant interviews will give the project an idea of how it can scale and remain sustainable going forward.

Health Equity Impact Assessment (HEIA): The Health Equity Impact Assessment (HEIA) is a practical tool for identifying and improving on any unintended health equity impacts of a program on vulnerable or marginalized groups within the general population. The HEIA tool will be used at the end of the program to assess what population groups may be unintentionally negatively impacted by the program and how identified inequitable impact can be mitigated (Ministry of Health - Ontario, 2023). To achieve a fulsome perspective when completing the HEIA tool, a diverse set of stakeholders will be engaged. This will include residents and families, personal support workers, nurses, physicians, managers, and pharmacists.

3.3 Data analyses

Mixed-Methods:

We are proposing a mixed-methods evaluation. The use of both quantitative and qualitative allow us to not only to quantify the outcomes of the project – but also understand the context and method in which the outcomes are produced. Mixed-method evaluations can strengthen the evaluation process as the focus groups and key informant interviews, we propose build on and strengthen the monitoring and final evaluation survey data collected.

Data Triangulation:

There are several different data sources in this proposal (i.e: document review, focus groups, key informant interviews, final evaluation survey, HEIA). Many of these data sources will measure similar outputs and outcomes, which will allow us to triangulate the data. Triangulation allows us to determine if the findings are corroborated by other data sources and therefore strengthens the evaluation. Triangulation can increase the validity and reliability of program evaluations.

Sub-analyses:

To conduct analyses on sub-groups of the population, we will be collecting data on participant's age, sex, gender, race, sexual orientation, ability, and location in Ontario for the final evaluation survey. Sub-analyses will assist in determining if the program has different outcomes for participants with different characteristics or by LTC-home characteristic (i.e: size, ownership model, key populations, etc). Prior to implementation the Stakeholder Advisory Committee will be involved in determining if there are other specific groups that might be at particular risk and should be included in these sub-analyses.

3.4 Knowledge translation and dissemination

To improve the utilization of findings we propose:

- Creating dashboard for program implementers and decision-makers showing the evaluation results and, where applicable, allowing for the disaggregation of data by social

and contextual factors. Ideally it would be great to add these results to the platform currently being used to show aggregate MSSA results to LTC homes.

- Conducting focus groups with program participants and external stakeholders to identify key elements of results to highlight during dissemination meetings and in dissemination material (i.e: infographics for flyers and social media).
- Creating a detailed report, highlighting the evaluation methods and results to ensure replicability and accountability. We would also like to encourage you to publish this report online through your website.

Please see **Appendix B** for Evaluation Matrix including key evaluation questions, indicators, methods/design, frequency and data sources.

3. Anticipated challenges and mitigation strategies

At Acumen Consulting we take a proactive approach to any potential challenges that may arise during the evaluation of SMS-LTC - Quality Improvement Stream. Below is a table that highlights potential challenges that could arise during evaluation and proposed mitigation strategies to remove or reduce these challenges.

Potential Challenges	Proposed mitigation strategies
Capacity to give consent Given that 90% of residents have some form of cognitive impairment, there could be ethical concerns with resident's ability to provide consent to be involved in evaluation focus groups.	Acumen Consulting is guided by the ethical standards of the Canadian Evaluation Society and TCPS 2. We will receive informed consent before involving residents in any research activities. Using caution for those who may lack full capacity to consent and rely on staff and family member expertise to determine feasibility of consent for all potential participants.
Social desirability bias Participants may not give accurate information because of their own biases. For example, residents may not feel comfortable speaking openly and honestly on their perceptions of care received and staff/management may not want to speak unfavorably on their facilities implementation of the SMS-LTC QI initiative.	Every effort will be made to maintain the confidentiality of evaluation participants. The evaluation team will clearly communicate the importance placed on their honest feedback and the confidentiality of everything shared. During recruitment and consent emphasis will be placed on the fact that what they share will not impact the care they receive or employment.
Staff engagement Given the number activities being implemented for staff at Champion Homes, staff may not feel that they have capacity for evaluation activities. Resulting in low staff involvement in data collection	To improve staff engagement in data collection and respect the time and effort that staff are putting into improving health outcome for residents, we will ensure that participating in evaluation activities both rewards participants and does not take away from their personal times. All activities will take place during work hours. Post-activity assessment will take place during the course allotted times so that participants do not using their personal time to provide feedback. Staff who choose to be involved in focus groups and keep informant interview will be provided longer paid break to do so. All evaluation events will provide refreshments and staff will be entered into a draw for a 1 of 10 $100 gift cards to a retailer of their choosing.

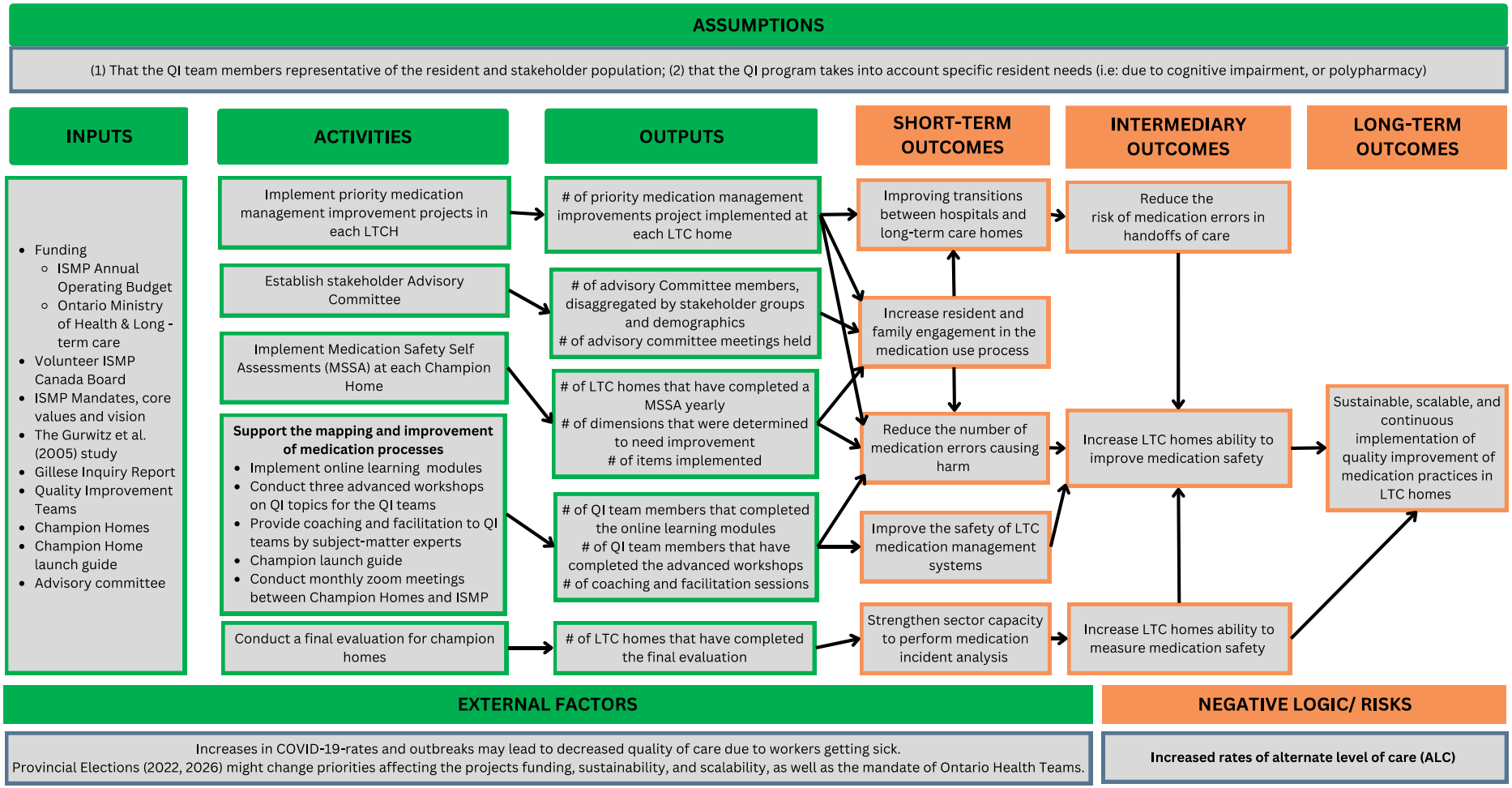
Language and Cultural Barriers Ontario LTC homes serve a diverse set of residents, with varying linguistic and cultural backgrounds. Additionally, research indicates dementia (64% of LTC residents in Canada) commonly leads to the loss of secondary languages. Therefore, it is expected that language and cultural barriers may arise during data collection.	To mitigate this barrier, language and cultural interpreters will be present for any staff or resident who requires it during data collection.

4. Relevant Canadian Evaluation competencies

The Competencies for Canadian Evaluation Practice are meant to ensure that program evaluators have the knowledge, skill and disposition to conduct sound evaluations. Below, we have highlighted some of the competencies that we identified as pertinent to this proposal:

Competency (Domain)	Implementation
3.2 Identifies stakeholders' needs and their capacity to participate, while recognizing, respecting, and responding to aspects of diversity (Situational Practice)	• Stakeholders are involved throughout the evaluation process (inception, implementation and dissemination) to ensure that their rights, interests and needs are respected. • Diversity, Equity and Inclusion is built into the evaluation. We intend to engage and collaborate a diversity of stakeholders as well as measure and evaluate outcomes for diverse groups within the program, though sub-analyses and an Health Equity Impact Assessment. Age, race, sex, gender, class, sexual orientation and ability are interdependent systems that need to be considered in evaluations.
3.5. Identifies and responds to changes in the context of the program and considers potential positive and negative impacts of the evaluation.	• The context of the LTC homes is important for the evaluation of this pilot project. Each LTC home will have differing resident needs, geographic locations (urban/rural), sizes and ownership models (public, private). Our evaluation matrix therefore considers factors that might explain why the program worked or didn't work in certain areas versus others and, in some cases, by patient characteristics. • We have incorporated negative logic directly into our logic model by considering potential negative outcomes of this project (i.e: potential increase in Alternate Level of Care)

5. Appendix A: Logic Model



6. Appendix B: Evaluation Matrix

Evaluation Questions	Indicators	Methods/Design	Frequency	Data Source
1.0. Evaluate the fundamental design and implementation of the SMS-LTC Quality Improvement Stream				
1.1. Do online learning modules improve learners understanding of quality improvement concepts and tools, as well as translate the learning to the learners' facilities?	% of learners who found the modules relevant, engaging, and useful	Post activity feedback survey	Ongoing	• QI Teams • ISMP monitoring data
	% of learners scoring higher on post-activity assessments than on pre-activity assessments	Pre and Post Assessments	Before and after each activity	• QI Teams
	Perspectives on application of quality improvement concepts and tools	Key Informant Interviews	During evaluation period	• Management staff of QI Teams
	# of learners accessing modules	Document review	Ongoing	• ISMP monitoring data
	Module completion rate (%)	Document review	Ongoing	• ISMP monitoring data
1.2. What medication safety dimensions (i.e: resident and family engagement, care team composition & workload, etc) have been implemented at each Champion home?	# of medication safety self-assessments completed by Champion homes	Document review	Ongoing	• All Medication safety self-assessments completed by Champion homes since launch in 2006
	# of dimensions implemented needing improvement i.e. 'not implemented', 'rarely' and 'sometimes' disaggregated by geographic location, size, and ownership model.	Document review	Ongoing	• All Medication safety self-assessments completed by Champion homes since launch in 2006
	# of barriers and enablers to implementing medication safety dimension	Focus group	During evaluation period	• QI Teams • Partners • Decisionmakers
1.3. Do advanced workshops improve QI Teams ability to support the mapping and improvement of the safe medication processes?	% of learners scoring higher on post-activity assessments than on pre-activity assessments	Pre and Post Assessments	Before and after each activity	• QI Teams
	% of participants who believed that the workshop improved their ability to support the mapping and improvement of the safe medication processes in their facility	Post-activity feedback survey	After each activity	• QI Teams

1.4. Does **coaching and facilitation** with subject-matter experts help QI teams identify, test and improve processes?	% of participants who believed that coaching and facilitation session met their goals	Post-activity feedback survey	After each activity	• QI Teams
2.0 Evaluate the early outcomes generated by the SMS-LTC Quality Improvement Stream				
2.1 Has the pilot decreased **Adverse Drug Events**?	# of medication errors that alter a resident's health status or require enhanced resident monitoring per resident per quarter	Document review (ISMP monitoring indicators)	Once: Feb/March 2023	• Champion Homes
	# of adverse medication reactions per resident per quarter	Document review (ISMP monitoring indicators)	Once: Feb/March 2023	• Champion Homes
2.2 Did the pilot project increase **patient participation and satisfaction**?	% of residents experiencing overall satisfaction, disaggregated by age, race, sex, gender, class, sexual orientation and ability	Final Evaluation Survey	Once: Feb/March 2023	• Champion Homes Residents and QI teams
	Experiences of residents on patient participation	Focus Group	Once: Feb/March 2023	• Champion Homes Residents
2.3. Does the program contribute to longer **hospital stays**?	Alternate levels of care rates	Document review	Ongoing	• ICES data
3.0 Evaluate the potential spread, scale, and sustainability of the SMS-LTC quality improvement stream				
3.1. What **medication safety dimensions** have been never implemented, discontinued, scaled and/or sustained over time?	# of medication safety dimensions never implemented, discontinued, scaled and/or sustained over time per champion home	Document review	Ongoing	• All Medication safety self-assessments completed by Champion homes since launch in 2006
3.2. What **program components** contribute to spread, scale and sustainability?	Perspectives on determinants of spread, scale, and sustainability	Key informant interviews Focus group	During evaluation period	• Partners • Implementers • Decision makers

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