Report on the

Results of the Medication Safety Self-Assessment® for Long Term Care

by

Ontario's Long-Term Care Homes

Report Submitted to:

Ministry of Health
And
Long-Term Care

Prepared by:
ISMP Canada

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A Key Partner in the Canadian Medication Incident Reporting and Prevention System
Un partenaire clé du Système canadien de déclaration et de prévention des incidents médicamenteux

The Institute for Safe Medication Practices Canada (ISMP Canada) is an independent national non-profit agency committed to the advancement of medication safety in all health care settings. ISMP Canada works collaboratively with the health care community, regulatory agencies and policy makers, provincial, national, and international patient safety organizations, the pharmaceutical industry, and the public to promote safe medication practices.

ISMP Canada's mandate includes collecting, reviewing, and analyzing medication incident and near-miss reports, identifying contributing factors and causes, and making recommendations for the prevention of harmful medication incidents.

Acknowledgements

ISMP Canada appreciates the support of all LTC Ontario homes that participated in the MSSA for LTC program.

Further, the assistance and financial support of the Ministry of Health and Long-term Care is acknowledged and appreciated.

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MEDICATION SAFETY SELF-ASSESSMENT® FOR LONG TERM CARE

ONTARIO INITIATIVE 2008 - 2009

INTRODUCTION

Project Goals

The release of the 2007 Annual Report of the Office of the Auditor General of Ontario highlighted the area of medication management in Long Term Care homes. In November 2007 the Ministry of Health and Long-Term Care (MOHLTC), in response to the report, developed an action plan to assist in addressing the issues raised in the Auditor General's report. In its joint communication along with the Ontario Long Term Care Association (OLTCA) and the Ontario Association of Non-Profit Homes & Services for Seniors (OANHSS), the MOHLTC indicated that, as partners in the long-term care home system, it shared a commitment to quality care and to safe medication administration and management systems in the homes.

The MOHLTC announced the formation of a Task Force on Medication Management in May 2008. To support homes and care teams in continuously strengthening medication management practices and systems, the MOHLTC, OLTCA and OANHSS committed to working with the homes on a number of important initiatives. As part of their work together they partnered with the Institute for Safe Medication Practices Canada to promote safe medication practices in Ontario LTC homes through the following initiatives:

- participation in the Medication Safety Self-Assessment® (MSSA) for Long Term Care program
- improving the availability to homes of coaching, education, medication use system reviews and other direct supports relating to medication system safety
- supporting continuous quality improvements for medication management
- compiling collaborative reviews of incident data.

The Institute for Safe Medication Practices Canada (ISMP Canada) is an independent, national, not-for-profit agency committed to the advancement of medication safety in all settings. ISMP Canada's Medication Safety Self-Assessment (MSSA) ® for Long Term Care (LTC) was identified as the method to educate homes' staff as to components of a safe medication system and to guide homes to identify safety gaps in the medication use system. Further, the MSSA through analysis of the provincial data will assist in identifying the current medication management environment in homes and the strengths and system-wide gaps that would in turn lead to identifying and planning improvement initiatives to the benefit of all homes and the residents they care for. The MSSA for LTC consists of 10 *Key Elements* of safe medication use that are subdivided into 20 *Core Distinguishing Characteristics*. Each core distinguishing characteristic section is made up of representative self-assessment items – the measurement to identify level of implementation of each core distinguishing characteristic. There are a total of 125 *self-assessment items* that represent characteristics of a safe medication system. The key elements and core distinguishing characteristics are listed in *Table 1*.

Method

In July 2008, the MOHLTC Task Force on Medication Management announced the launch of its first initiative. As an initial step the Task Force invited all homes to complete the Institute for

Safe Medication Practice Canada's Medication Safety Self-Assessment® for Long-term Care by the end of 2008. The data collected through the use of this program would support the Task Force in identifying and planning improvement initiatives around medication use systems in Long-Term Care.

In order to support homes in completing the program, and to offer guidance on process and approach, an Education Team comprised of representatives from the task force conducted Education and Assistance seminars on the MSSA at five locations around the province of Ontario in August 2008. The seminars were available in person, through the OTN network and via webinar format. Participation was voluntary; however, the benefits of the MSSA process as part of a home's ongoing quality improvement program were emphasized to encourage participation.

Home representatives could obtain a copy of the MSSA for LTC booklet at the educational sessions or contact ISMP Canada for an information package. The information package included the electronic file of the Medication Safety Self-Assessment ® (MSSA) for Long Term Care, information on the benefits of participating in the project and guidelines on using the MSSA for LTC.

Homes were directed to form an interdisciplinary team with members representing all disciplines closely involved in the medication administration process (e.g., physician, nursing staff administering medications, the pharmacist contracted to provide service, administrative level staff and, possibly, a risk manager). The team was to review the MSSA and reach a consensus on how each of the 125 self-assessment items was to be scored using the scoring system outlined in *Table 2*. When this process was completed, the home's Key Contact person was to request the home-specific password from ISMP Canada to enter its data on the ISMP Canada secure website. At that time the home also received an information package outlining how to use the reports generated by the ISMP Canada website and accessed using the home's password. In order for homes to have their data included in the data analysis, data entry was to be completed by November 30, 2008 which was later extended to the end of December 2008. Throughout the project participants were supported by ISMP Canada through e-mail and telephone responses to questions and requests for assistance.

Project Data Analysis

Each self-assessment item is assigned a maximum weighted score, which is based on an assessment of the impact of the item on resident safety and the ability of the characteristic to ensure sustained improvement. Items are not of the same weighting; weighting of items ranges from 0 – 16 and can be all or none rather than graduated increases with level of implementation.

Individual homes are given a score for each self-assessment item based on their team rating of the item and the weighted score assigned to the item. Aggregate scores for the province and each LHIN region with three or more participating homes were calculated for each item, core distinguishing characteristic and key element, and reported as the percent of the maximum weighted score possible. Data analysis by province and LHIN region was completed for this summary report.

Table 1: Key Elements and Core Characteristics of the Medication Safety Self-Assessment® for Long Term Care

KEY ELEMENT	CORE CHARACTER-ISTIC	DESCRIPTION
I Resident Information	***1***	Essential resident information is obtained, readily available in useful form, and considered when prescribing, dispensing and administering medications.
II Drug Information	***2***	Essential drug information is readily available in useful form and considered when ordering, dispensing and administering medications.
	3	Where applicable, a drug formulary system is followed (e.g., provincial, national or payee) to limit choice to essential drugs, minimize the number of drugs with which practitioners must be familiar, and provide adequate time for designing safe processes for the use of new drugs added to the formulary.
III Communication of Drug Orders and Other Drug Communication	***4***	Methods of communicating drug orders and other drug information are standardized and automated to minimize the risk for error.
IV Drug Labelling, Packaging and Nomenclature	***5***	Strategies are undertaken to minimize the possibility of errors with drug products that have similar or confusing manufacturer labelling/packaging and/or drug names that look or sound alike.
	6	Clear and readable labels that identify medications are on all containers, and medications remain labelled up to the point of actual administration.
V Drug Standardization, Storage, and Distribution	***7***	IV Solutions, drug concentrations, dose, and administration times are standardized whenever possible.
	8	Drugs are delivered to care units in a safe and secure manner and available for administration within a time frame that meets essential resident needs.
	9	Medications stocked in the Home/facility are limited and securely stored.
	10	Hazardous chemicals are safely sequestered from residents and not accessible in drug preparation areas.
VI Medication Delivery Device Acquisition, Use and Monitoring	***11***	The potential for human error is mitigated through careful procurement, maintenance, use and standardization of medication delivery devices.
VII Environmental Factors	***12***	Medications are prescribed, transcribed, prepared, dispensed and administered in a physical environment that offers adequate space and lighting and allows practitioners to remain focused on medication use without distractions.
	13	The complement of practitioners matches the clinical workload without compromising resident safety.
VIII Staff Competence and Education	***14***	Practitioners receive sufficient orientation to medication use and undergo baseline and annual competence evaluation of knowledge and skills related to safe medication practices.
	15	Practitioners involved in medication use are provided with ongoing education about medication error prevention and the safe use of drugs that have the greatest potential to cause harm if misused.
IX Resident Education	***16***	Residents or their substitute decision makers are

		included as active partners in care through education about the medications and ways to avert harm from medication use.
X Quality Processes and Risk Management	***17***	A non-punitive, system-based approach to error reduction is in place and supported by the Home's/facility's administration team.
	18	Practitioners are stimulated to detect and report errors, and interdisciplinary teams regularly analyze incidents that have occurred within the Home/facility and in other Homes or health care facilities for the purpose of redesigning systems to best support safe practitioner performance.
	19	Simple redundancies that support a system of independent double checks or an automated verification process are used for vulnerable parts of the medication system to detect and correct serious errors before they reach residents.
	20	Proven infection control practices are followed when storing, preparing and administering medications.

Table 2: MSSA for LTC Scoring for Self-Assessment Items

Scoring for Individual Items:

A = This item is applicable, but there has been **no activity** to implement

B = This item has been **formally discussed for possible implementation** in the Home/ facility, but is **not implemented at this time**

C = This item has been **partially implemented in some areas** of the Home/facility (e.g., by location, resident population, prescription type, drugs or staff)

D = This item is **fully implemented in some areas** of the Home/facility (e.g., by location, resident population, prescription type, drugs or staff)

E = This item is **fully implemented throughout** the Home/facility (i.e., for all residents, prescriptions, drugs or staff) **or this item does not apply** to the Home/facility because there is **no resident need**

RESULTS

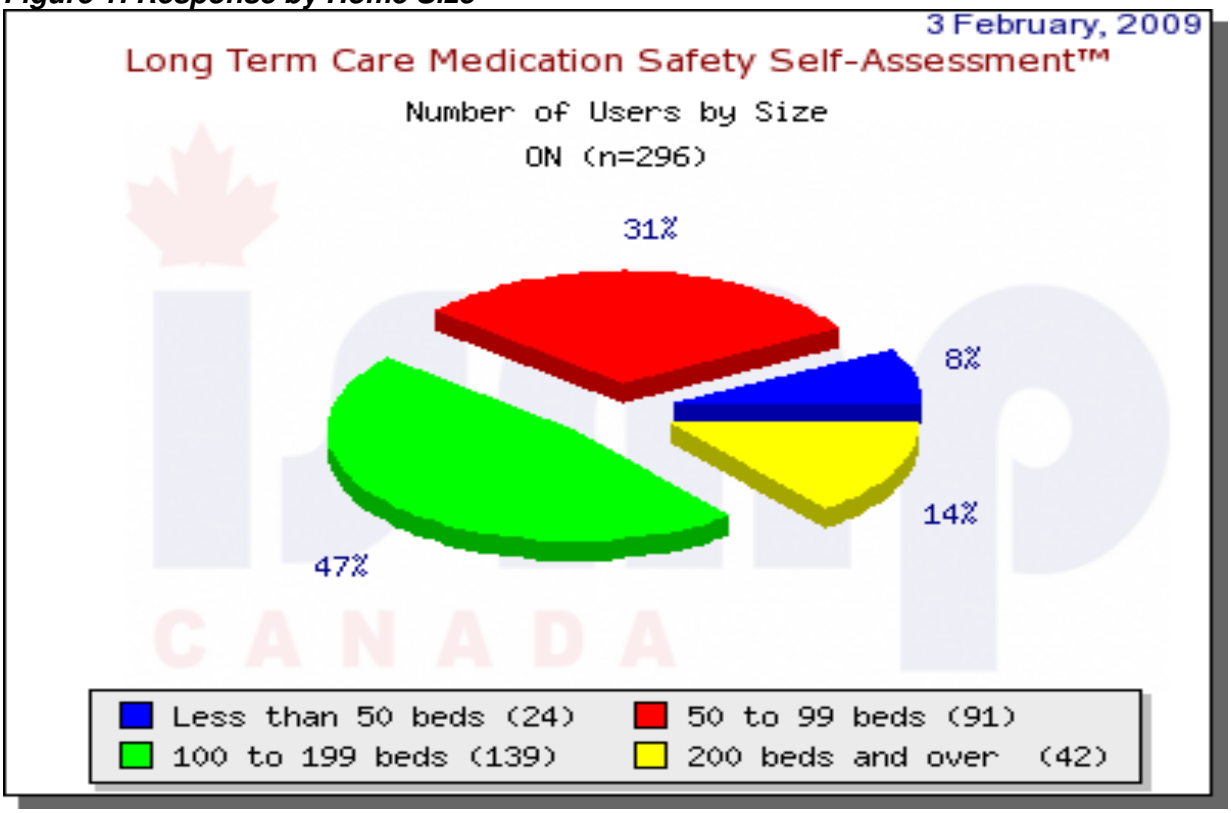
A) Demographics of Participants

A total of 624 homes in the Long-Term Care sector in Ontario were invited to participate in the project. 433 (69%) of the homes registered for the project and 296 (47%) of the Ontario homes, or 68% of the registered homes, requested a password for data entry. The final sample upon which the analysis for the project was compiled is the 296 homes that completed data entry by mid-January 2009. Other homes continue to enter their data and the ISMP Canada site remains open to do so. There was an adequate sample from each LHIN region to allow results to be aggregated for all regions.

(i) By Number of Beds in Home

It can be seen from Figure 1 that homes of varying sizes participated in the self-assessment.

Figure 1: Response by Home Size



(ii) By LHIN Region

Fourteen LHIN regions submitted data (see *Table 3*). A minimum of three (3) sites is required to trigger an aggregate score for a region.

Table 3: LHIN Regions Submitting Data

LHIN Region	*No. of Participating Homes/Total No. of Homes*
Erie St. Clair (#1)	*22/35*
South West (#2)	*37/75*
Waterloo Wellington (#3)	*18/35*
Hamilton Niagara Haldimand Brant (#4)	*42/87*
Central West (#5)	*10/24*
Mississauga Halton (#6)	*11/27*
Toronto (#7)	*12/39*
Central (#8)	*29/45*
Central East (#9)	*31/69*
South East (#10)	*19/36*
Champlain (#11)	*27/61*
North Simcoe Muskoka (#12)	*15/27*
North East (#13)	*20/49*
North West (#14)	*3/21*

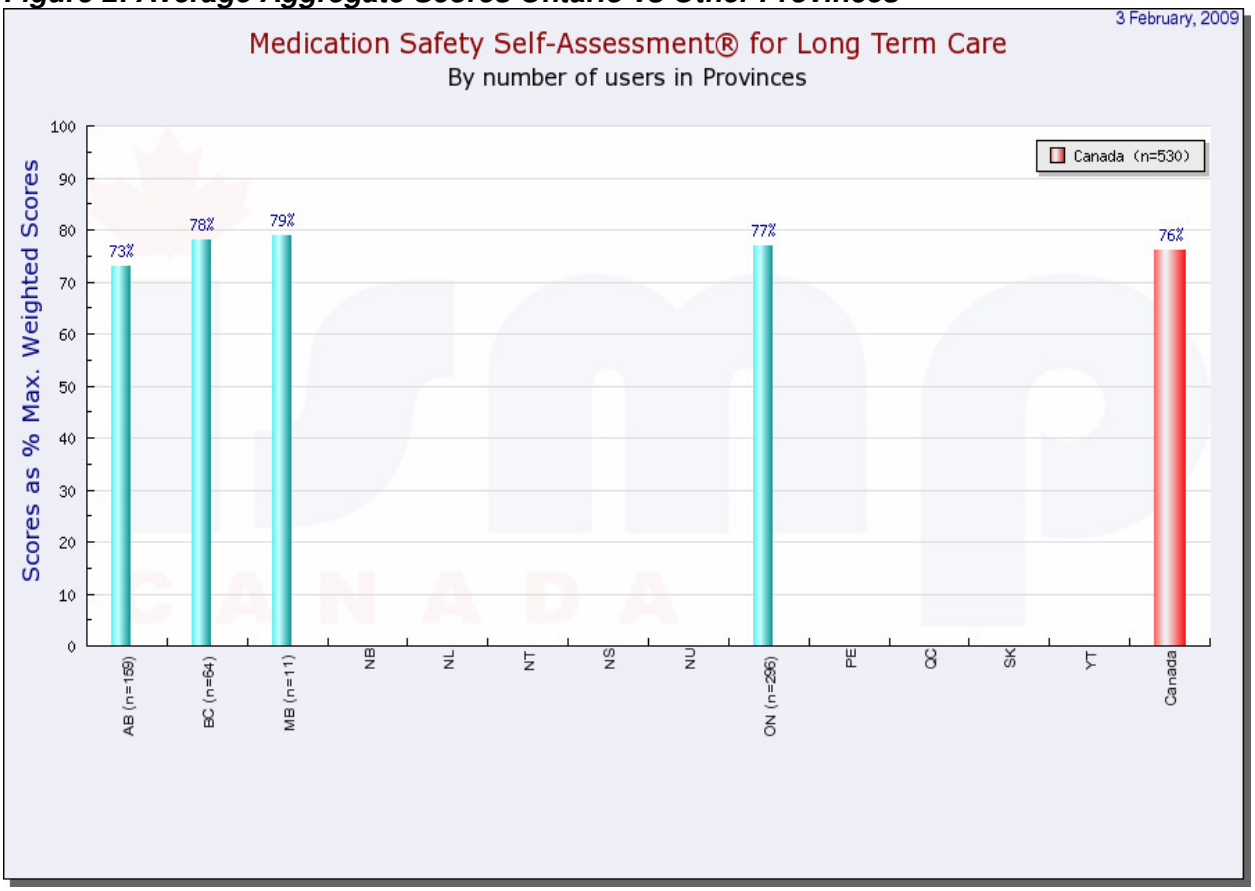
B) Overall Aggregate Results for Ontario

(i) Aggregate Scores by Province

The database of users also consists of participants from British Columbia (64), Alberta (159) and Manitoba (11). The average for Canada across the four provinces was 76% of the maximum achievable weighted score (780) as illustrated in *Figure 2*.

Each home was issued a home-specific password to complete the self-assessment, access its graphs and reports and add notes to the items within the Core Distinguishing Characteristics. The aggregate results are useful to homes to see how their results compare to aggregate scores for facilities in Ontario and across Canada.

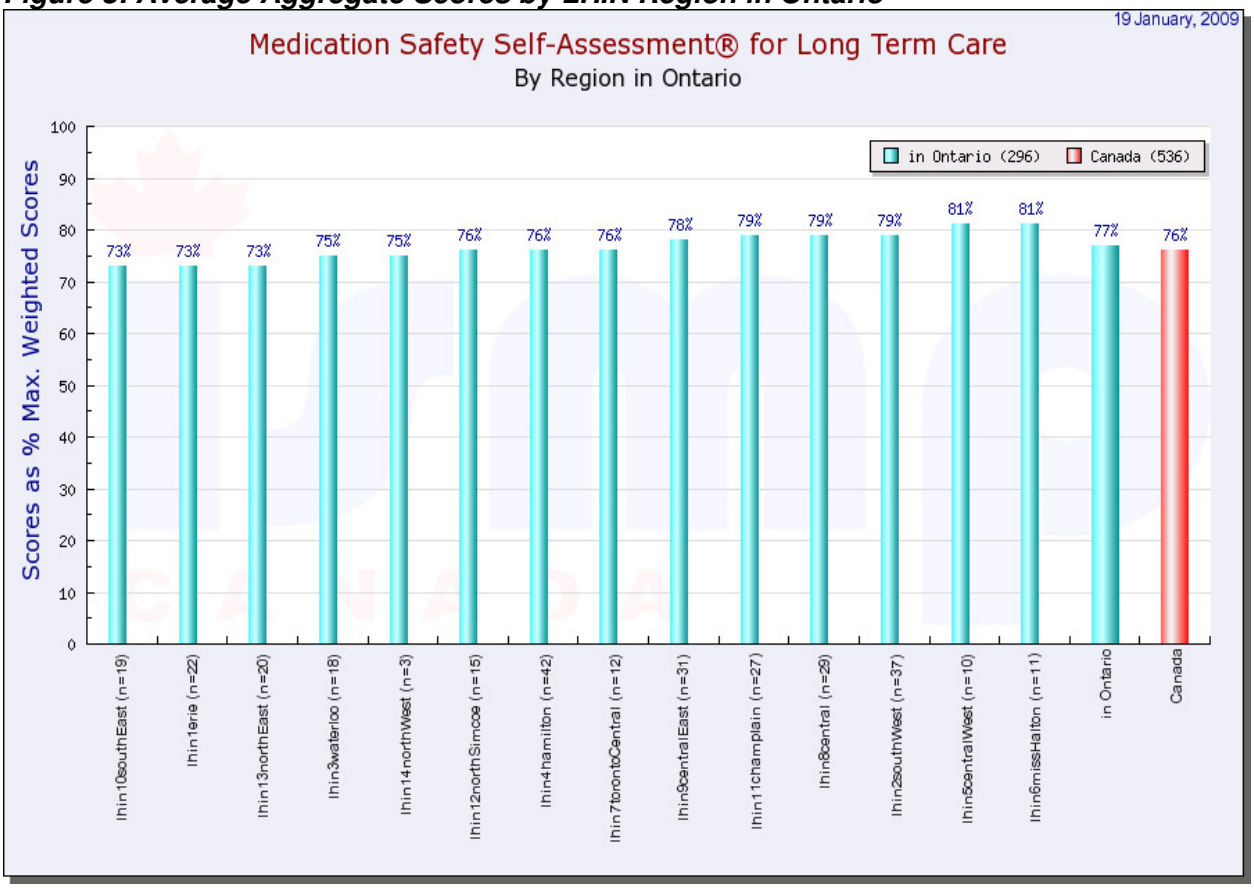
Figure 2: Average Aggregate Scores Ontario vs Other Provinces



(ii) Aggregate Scores by LHIN Region

The total aggregate scores as a percentage of the maximum weighted scores ranged from 73% for each of *LHIN 10 South East, LHIN 1 Erie* and *LHIN 13 North East* regions to 81% for *LHIN 6 Mississauga Halton* and *LHIN 5 Central West* regions. The number of reporting homes ranged from *LHIN 14 North West* region (3) to *LHIN 4 Hamilton Niagara Haldimand Brant* region (42). The number of homes, home sizes, funding types, type of pharmacy service and number of operators of homes within any particular region will impact on the total scores for that region.

Figure 3: Average Aggregate Scores by LHIN Region in Ontario



(iii) Aggregate Scores by Ownership

Figures 4 to 7 illustrate the results of sites by ownership as reflected by the entries into the ISMP Canada website on the demographic page of the MSSA for LTC for 296 homes. The types of ownership selected by the homes are listed in the following table.

Table 4: Average Aggregate Score by Types of Ownership

Type of Ownership	*No. of Sites Included in Aggregate*	*Average Aggregate Score*
Municipal	***36***	***74%***
Charitable	***24***	***76%***
Nursing Home	***228***	***77%***
Other	***8***	***76%***

Figure 4: Average Aggregate Scores for Type of Ownership – Municipal Homes

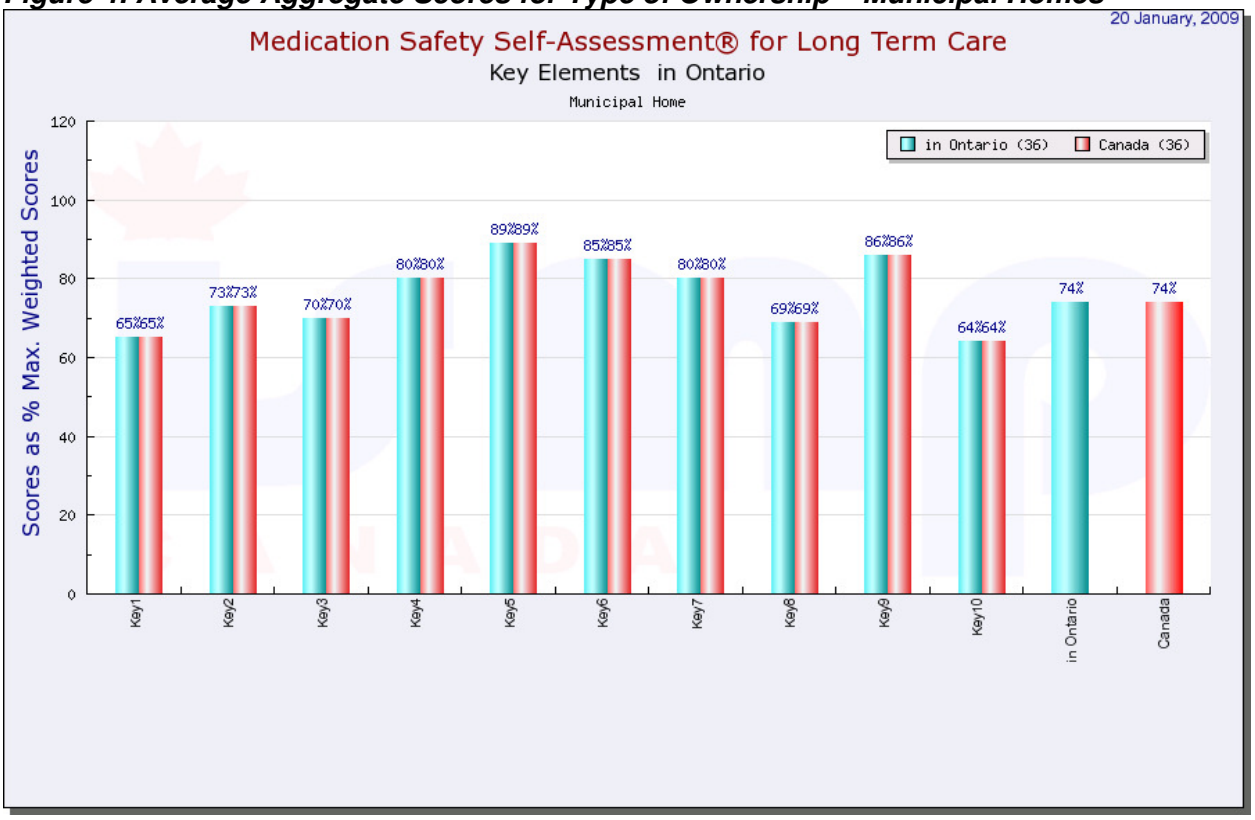


Figure 5: Average Aggregate Scores for Type of Ownership – Charitable Homes

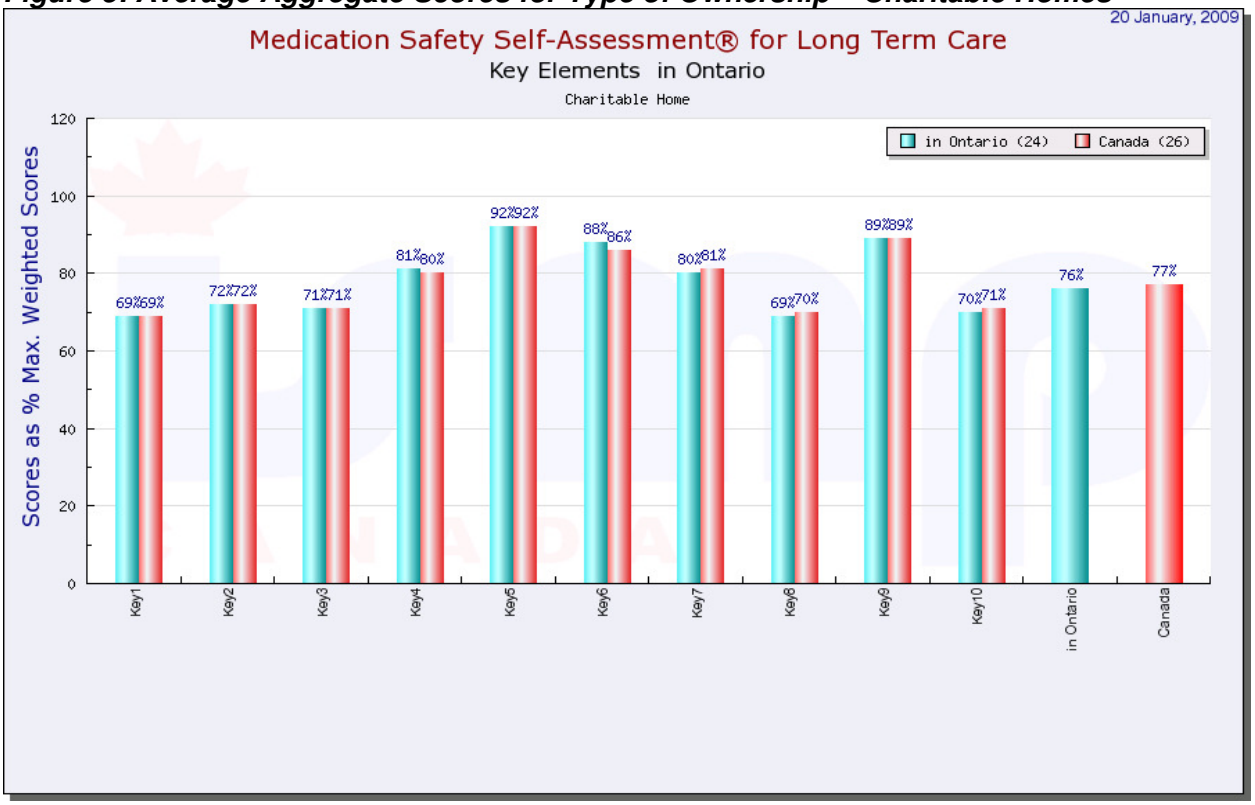


Figure 6: Average Aggregate Scores for Type of Ownership – Nursing Home

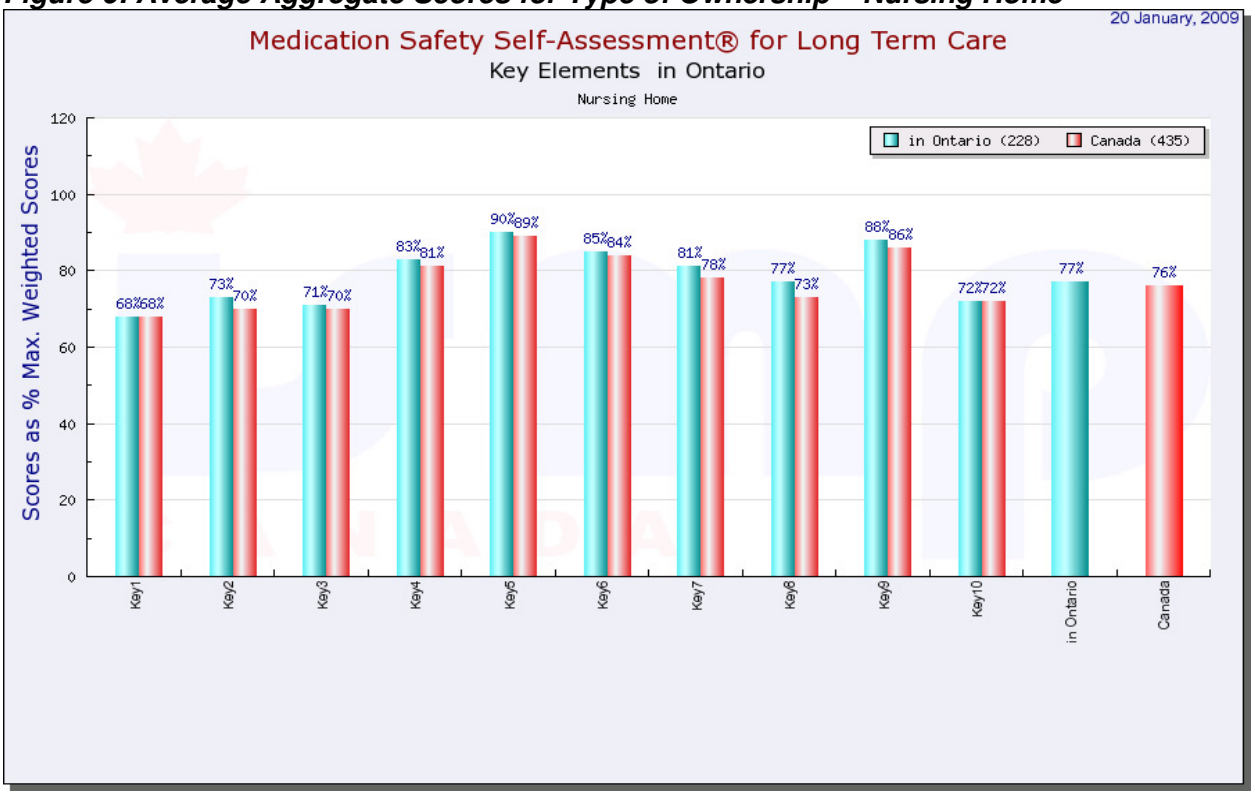
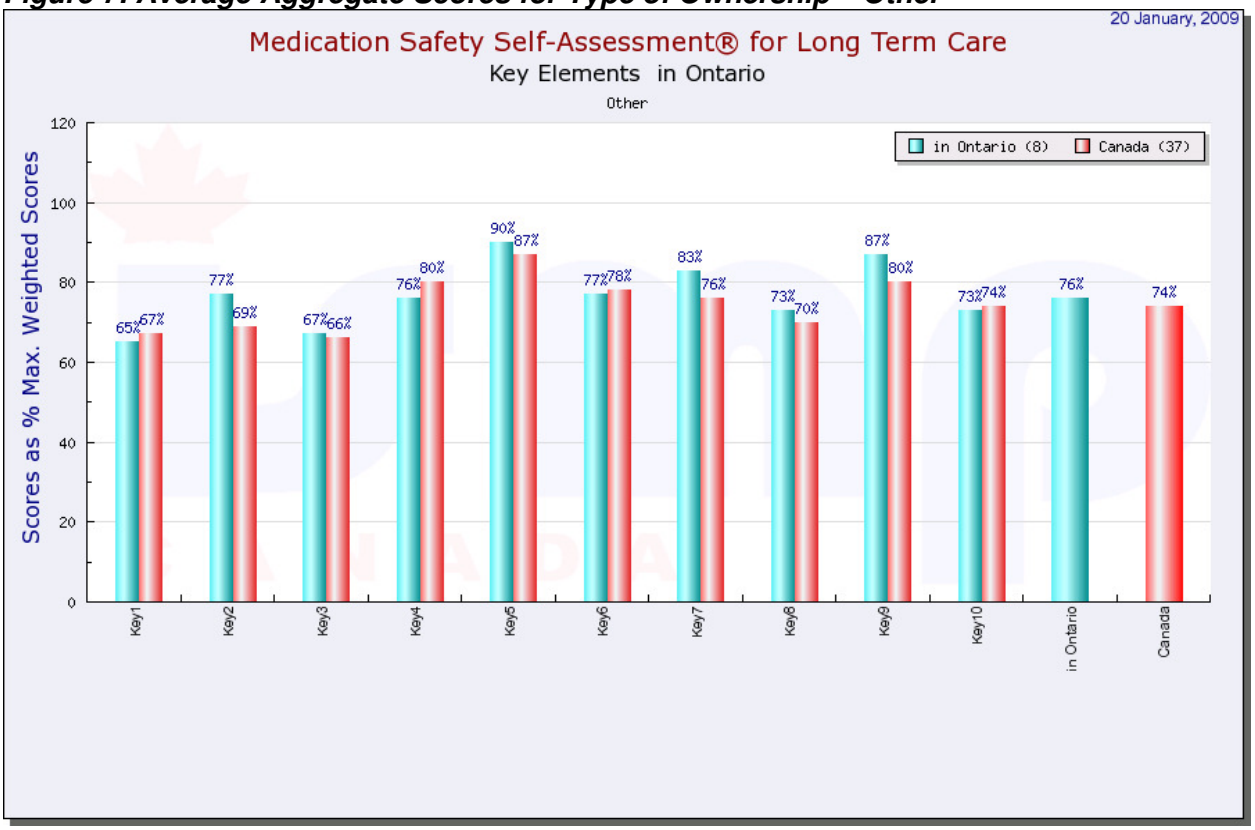


Figure 7: Average Aggregate Scores for Type of Ownership – Other



(iv) Aggregate Scores by Ownership and Pharmacy Services

Table 5 illustrates the results of aggregate scores using the demographic parameters of home ownership and the availability of pharmacy services based on the data submitted by the participating sites.

Table 5: Average Aggregate Scores by Ownership and Pharmacy Services

Type of Ownership	*Consultant/Clinical Pharmacist*	*Off-site Dispensing*	*Other Service*	*Type of Service Not Specified*
Municipal Home (36)	***73% (25)***	***72% (8)***		***3 sites***
Charitable Home (24)	***78% (12)***	***72% (9)***		***3 sites***
Nursing Home (228)	***78% (168)***	***75% (43)***	***64% (1)***	***16 sites***
Other Homes(8)	***75% (6)***	***81% (2)***		

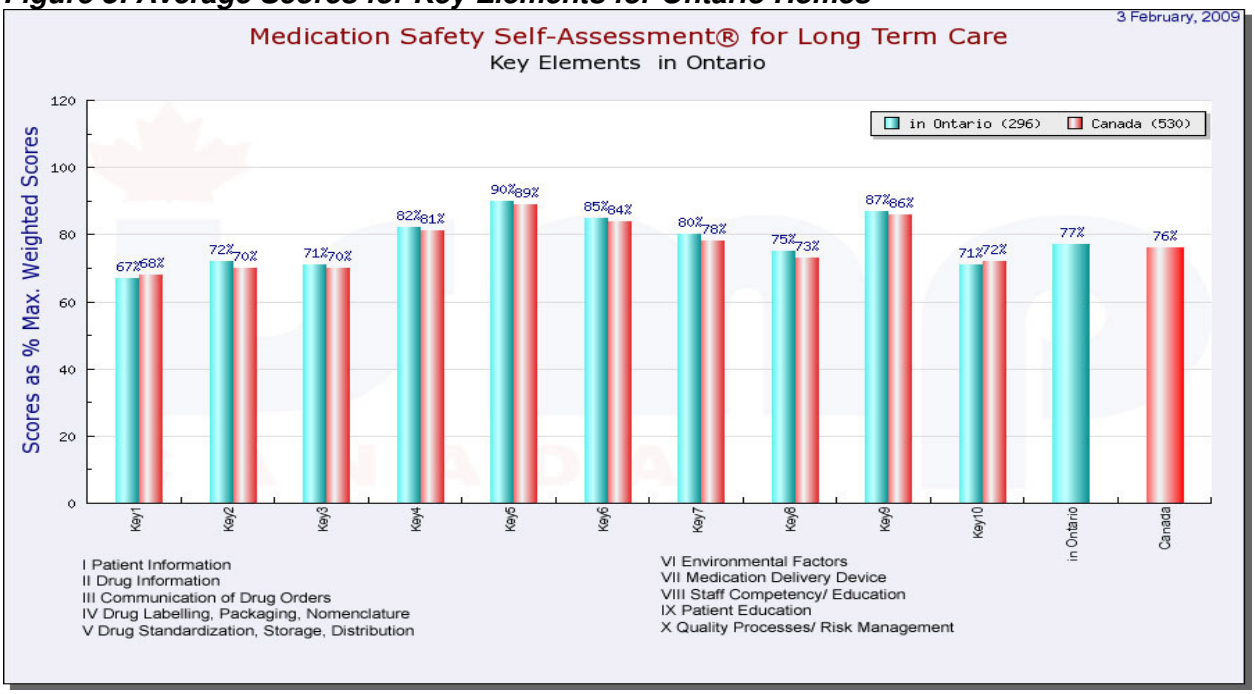
Looking at ownership types for Ontario, the Nursing Homes and Charitable Homes had an average score of 78% where there was a consultant/clinical pharmacist available while the Municipal Homes had an average score of 73%. Where off-site dispensary services were identified the scores ranged from 72% to 75% for the three types of ownership. The group classifying themselves as Other Homes had a higher average score (81%) for off-site dispensing and a mid-range score (75%) for consultant/clinical pharmacist services. Although the significance of this is unknown, it may be of interest to explore the differences.

C) Ontario Results

(i) By Key Elements

Figure 8 shows the average of the aggregate scores as a percentage of maximum achievable weighted scores for the Key Elements.

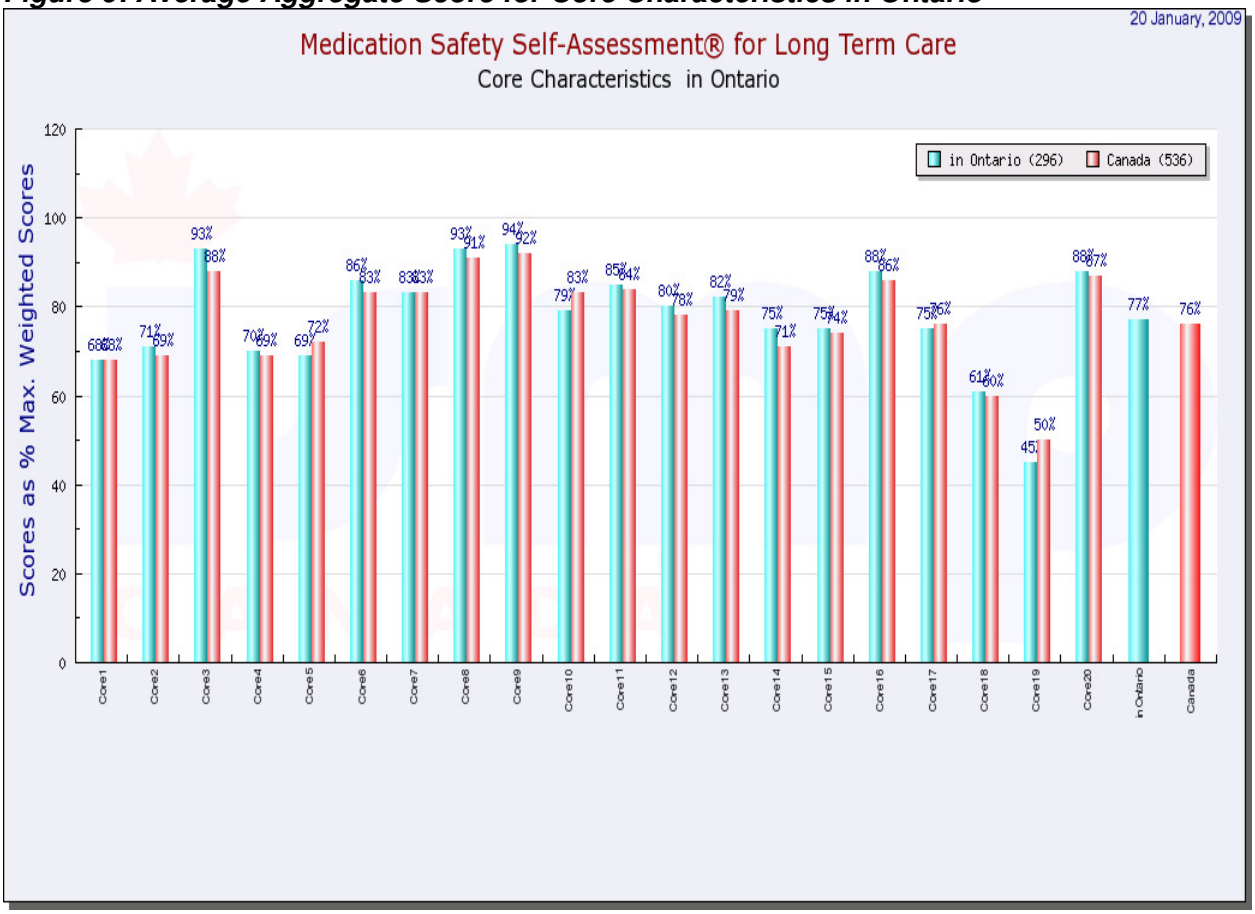
Figure 8: Average Scores for Key Elements for Ontario Homes



(ii) By Core Distinguishing Characteristics

Figure 9 illustrates the average aggregate scores of Core Distinguishing Characteristics as a percentage of maximum achievable weighted scores.

Figure 9: Average Aggregate Score for Core Characteristics in Ontario



(iii) By Self-Assessment Items

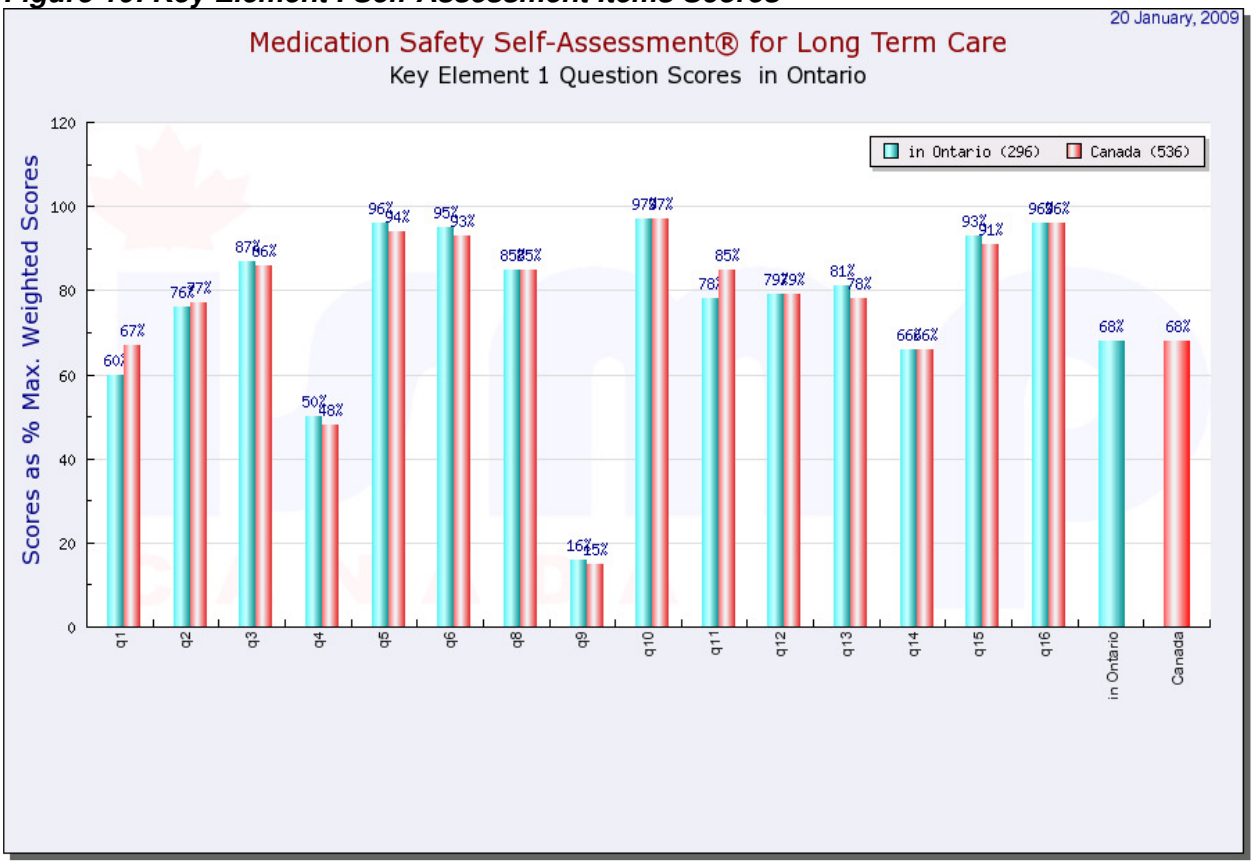
The following sections (a) to (j) include the graphs for each Key Element by Question Scores (Self-Assessment Items). Based on a review of the scores for the questions (items in the MSSA for LTC) comments may be included to highlight items where

- the average aggregate scores were consistent with the average aggregate scores for Canada
- the range of scores for the item suggests opportunities for system enhancements
- the range of scores for the item suggests there may have been some inappropriate selection of scores, particularly relating to A vs E
- the scores suggest the Homes should be commended for their efforts to enhance system safety.

It is noted that A scores (applicable, no activity to implement) and B scores (applicable, formally discussed, no activity to implement) occurred across all regions. The regional reports highlight those items where A or B scores occurred with higher frequency.

(a) Key Element I Resident Information

Figure 10: Key Element I Self-Assessment Items Scores



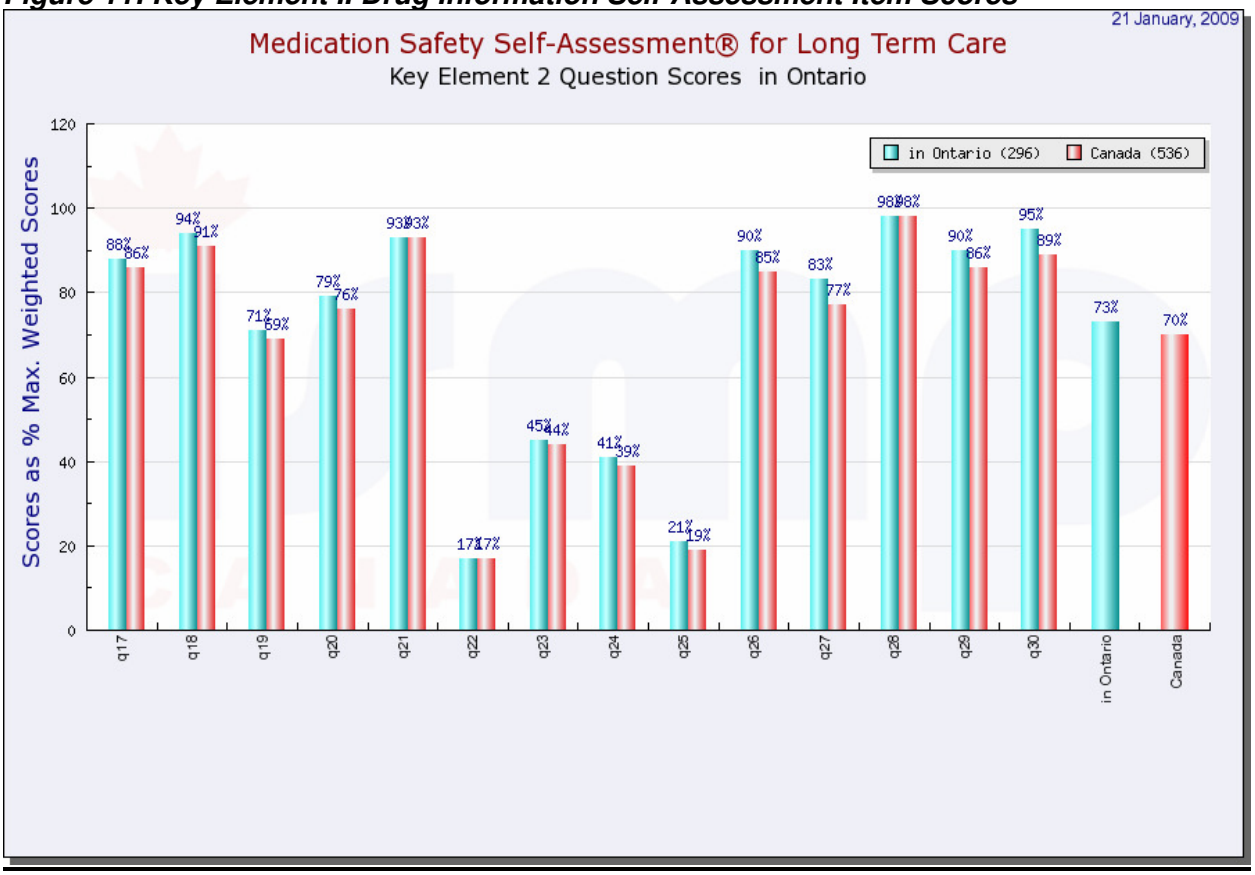
Key Element I - Resident Information *and Core Distinguishing Characteristic #1 (Essential resident information is obtained, readily available in useful form, and considered when prescribing, dispensing, and administering medications)* were reviewed:

- item #1 *(Physicians, nurses and pharmacists lab value access…)* – 57 sites (19%) scored themselves as A (applicable, no activity to implement)
- item #2 (…*practices in place to ensure routine adjustment of doses …in residents with renal or severe liver impairment*.) - 124 sites (42%) scored themselves as having fully implemented a process for dosage adjustment; however 9 sites indicated no activity to implement
- item #4 (*…distinctive and visible prompts that list resident allergies are included …order forms as a visible reminder to those prescribing drugs*.) – 12 sites (4%) indicated that there was no activity; 38 sites (12%) scored as fully implemented; the emphasis of this Item is that prescribers are alerted to resident allergies.
- item #9 (*bar coding …verify resident identity*) – as expected little progress has occurred in this area; once IT systems are designed for the LTC environment this could become a more realistic goal.
- items #12, 13 and 14 (*Information is available to the clinical team…; A current drug history includes…; The drug history includes accurate information on medications ordered and*

administered at the transferring site or at home…) – 150 sites (51%) scored themselves as compliant with item #12; 168 sites (57%) with item #13 but 4 sites had no activity to implement; for item #14, 81 sites (27%) scored themselves as compliant but 6 sites had no activity to implement. Generally B to D scores reflect the Canadian experience that, at the time of admission from home to a facility as well as at readmission from acute care and/or transfer from another level of care, current information is difficult to obtain. However, as more medication reconciliation initiatives are incorporated into practice (Accreditation Canada Required Organizational Practice), the subsequent scores in future assessments should increase to reflect the impact of the initiatives.

(b) Key Element II Drug Information

Figure 11: Key Element II Drug Information Self-Assessment Item Scores



Key Element II – Drug Information *and the Core Characteristic #2 (Essential drug information is readily available in useful form and considered when ordering, dispensing, and administering medications) and Core Characteristic #3 (Where applicable, a drug formulary system is followed to limit choice to essential drugs, minimize the number of drugs with which practitioners must be familiar, and provide adequate time for designing safe processes for the use of new drugs added to the formulary)* were reviewed:

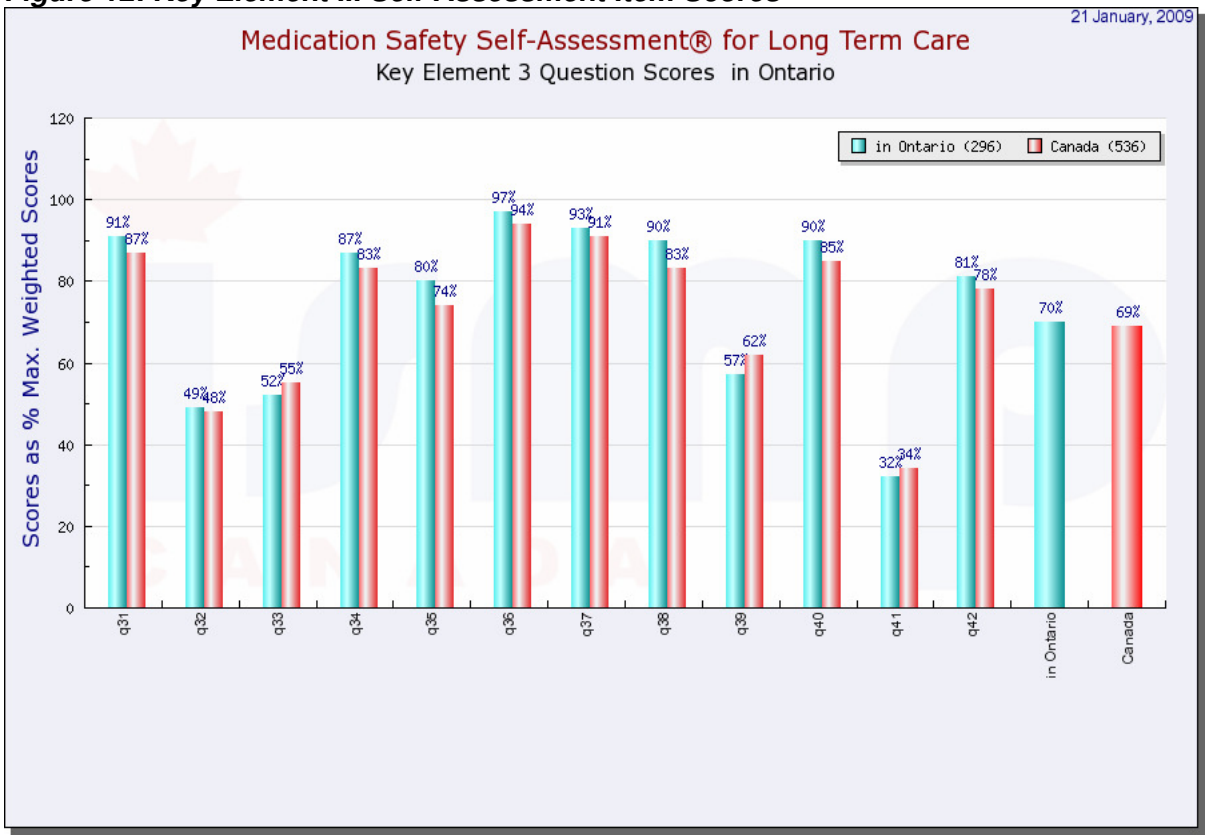
- item #21 (*Pharmacists work with the care team on a regularly scheduled basis…*) – facilities scored 93% of maximum achievable score; 1 site scored A and 7 sites scored B

indicating no service; 17 sites scored C, 11 sites scored D and the remainder scored E indicating partial to full implementation; the Ontario homes are to be commended on the involvement of the pharmacist on the care team

- items #22, 23, 24, 25 (*CPOE dose range checks…; pharmacy system performs dose range checks…; pharmacy system performs maximum dose checks for high alert drugs…; CPOE performs maximum dose checks…*) – scores ranged from 17% to 45% of maximum achievable scores indicating an opportunity for system enhancement using technology support.
- item #27 (*all drug orders are entered into a computerized resident profile and screened …contraindications, interactions, and appropriateness*) – 13 sites (4%) scored themselves as A or B indicating no activity; 52 sites (18%) scored C indicating partial activity.
- item #29 - The Ontario Drug Benefit Formulary is in place for Ontario homes.

(c) Key Element III Communication of Drug Orders and Other Drug Information

Figure 12: Key Element III Self-Assessment Item Scores



Key Element III Communication of Drug Orders and Other Drug Information *and the Core Characteristic #4 (Methods of communicating drug orders and other drug information are standardized and automated to minimize the risk for error)* were reviewed:

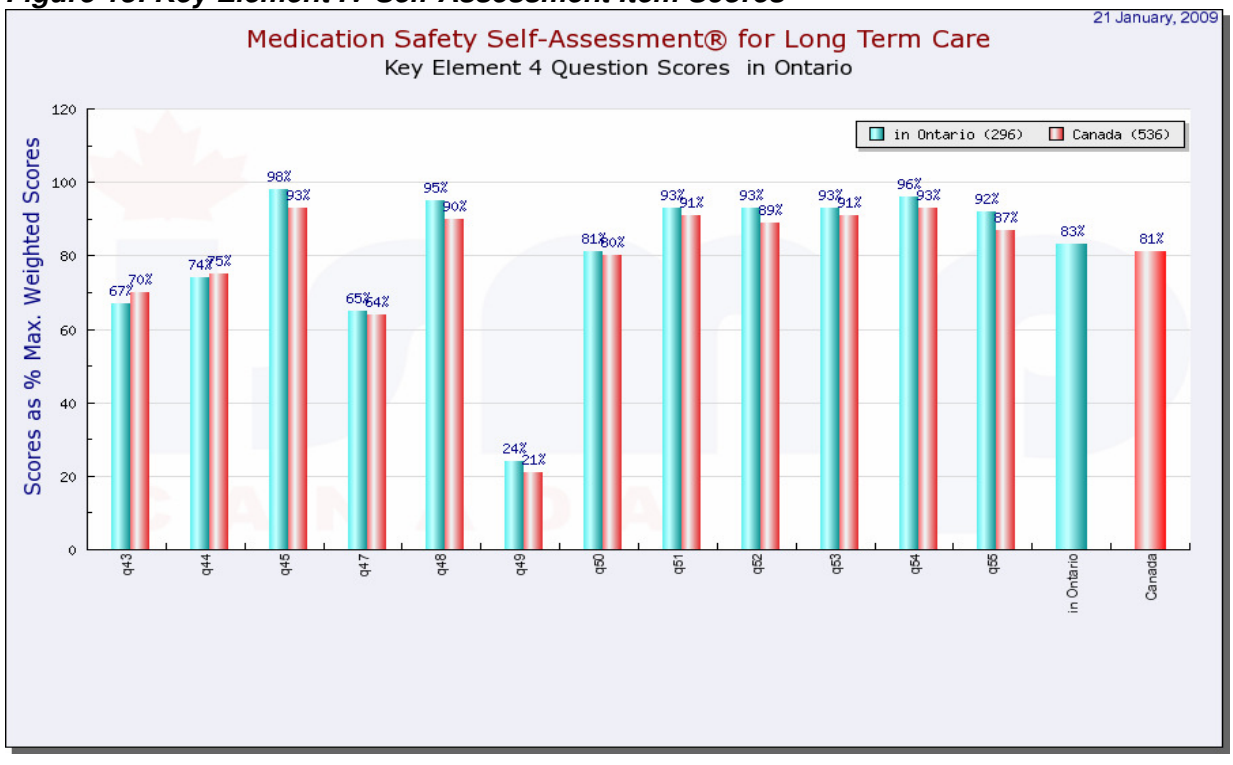
- item #32 (*all drug orders…include clinical indication*) – 33 sites (11%) ranked themselves as fully compliant while 30 sites (10%) indicated no activity related to this

item; the majority of the remaining scores were C. Although not a common practice, including the clinical indication on drug orders is very helpful to all care providers.

- item #33 (*a list of prohibited, dangerous abbreviations and unacceptable methods of expressing doses*) – 76 sites (26%) scored themselves as fully compliant with this item while 45 sites (15%) scored A indicating no activity to implement; the majority of the remaining scores were C. "Dangerous abbreviations" has been added to the Required Organizational Practices (ROP) from Accreditation Canada for 2009. As approximately two-thirds of Homes scored A to C, this will be a needed change by a number of homes.
- item #39 (*Computer-generated or electronic MAR …guide medication administration* – 139 sites (47%) scored total compliance – computer- or electronic-MARs; 61 sites (21%) scored A and 75 sites (25%) scored B effectively indicating no activity for 46% of the sites to use computer or electronic-generated MARs to guide medication administration
- item #41 (*automated medication – related systems are used…*) – 34 sites (11%) scored as having fully implemented automated systems which is unlikely since it would mean CPOE, eMAR, and bar coding have all been fully implemented; an E score indicating that this item is not applicable to the residents served would not have been appropriate.

(d) Key Element IV Drug Labelling, Packaging and Nomenclature

Figure 13: Key Element IV Self-Assessment Item Scores



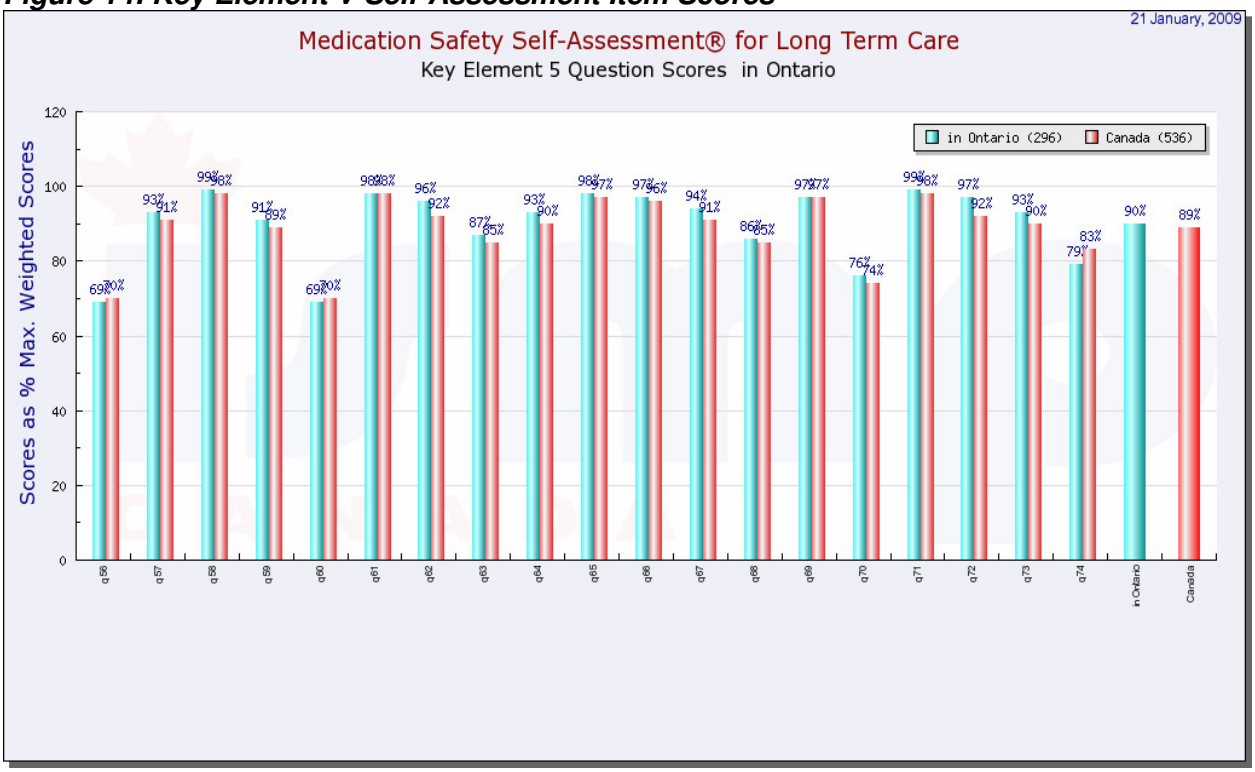
Key Element IV Drug Labelling, Packaging and Nomenclature *and Core Characteristic #5 (Strategies are undertaken to minimize the possibility of errors with drug products that have*

similar or confusing manufacturer labelling/packaging and/or drug names that look or sound alike.), Core Characteristic #6 (Clear and readable labels that identify medications are on all containers, and medications remain labelled up to the point of actual administration.) were reviewed:

- item #43 *(medication safety literature is reviewed…)* – 53 sites (18%) scored either A or B signalling no activity to implement this item; four LHINs scored 50% or lower for this safety item
- item #47 (*All drugs taken to resident…are labelled…*) - aggregate score of 65% of maximum achievable; 80 sites (27%) reported fully compliant with this item; 46 sites (16%) scored A indicating no activity to implement
- item #49 (*Machine readable coding, i.e., bar coding, to verify the drug as part of the dispensing and administration processes*.) – 24% of maximum achievable score implies that technology is in place at some homes that includes bar coding within the dispensing process and bar coding used to confirm the administration of the drug to the resident; this item reflects technology that will enhance system safety in the future
- item #50 – About 10% of Homes scored A or B, while approximately two-thirds of Homes scored E. Scores of A would indicate that medications brought into the Home are used, but no discussion has occurred regarding the verification of these medications.
- item #54 (*All drugs are dispensed in labelled, ready-to-use single doses*...) – 92% of maximum achievable scoring; 1 site scored B (not implemented).

(e) Key Element V Drug Standardization, Storage, and Distribution

Figure 14: Key Element V Self-Assessment Item Scores



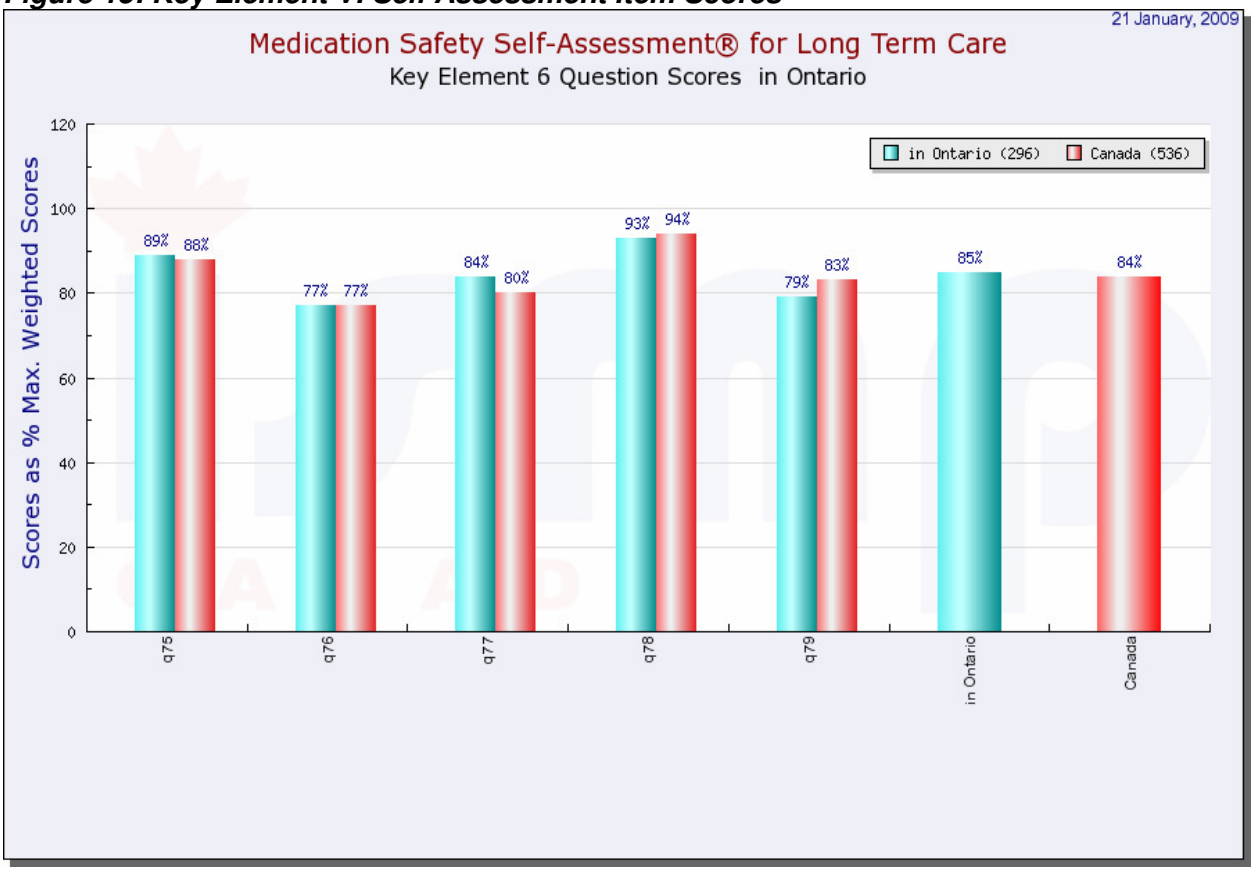
Key Element V Drug Standardization, Storage and Distribution *and Core Characteristic #7 (IV solutions, drug concentrations, doses, and administration times are standardized whenever possible), #8 (Drugs are delivered to care units in a safe and secure manner and available for administration within a time frame that meets essential resident needs), #9 (Medications stocked in the Home/ facility are limited and securely stored), and #10 (Hazardous chemicals are safely sequestered from residents and not accessible in drug preparation areas)* were reviewed.

For Key Element V – Drug Standardization, Storage and Distribution, scores were high with a number of items reaching over 90% of the maximum score indicating that the homes were generally satisfied with the pharmacy distribution system in place.

- item #56 *(where more than one concentration for high alert drugs…)* – 83 sites (28%) scored either A or B signalling no activity to implement this item; a barrier may be the lack of a defined list of high alert drugs for long term care
- items #58 and #59 – These items pertain to standard administration times and handling of medications outside a specified dosing window. Almost all homes indicated, through an E score, that standard dosing times have been established and are used throughout the home. Over 80% of these Homes have dosing windows established and processes are in place to help staff administer medications at the standard times when they are started at a non-standard time. Almost all the homes who scored less than an E for Item #58 also scored less than an E for Item #59. Facilities where standard dosing times are not fully implemented cannot expect to achieve E scores for #59. Medications administered outside the acceptable window are assumed to be recorded as medication errors.
- item #60 *(where a physician…has ordered self-administration of medications…)* – 52 sites (18%) scored A or B indicating no activity to implement this item. Homes that allow residents to self-medicate, even for the occasional inhaler use, need to have a process in place to ensure the safe use of these medications. Almost one-half of homes scored E, indicating that either self-medication is not permitted or, if it is, that processes are in place to handle these situations.
- Item #68 – The use of drug samples from physicians is not a safe practice as the medication is often omitted from the pharmacy resident profile, which leads to problems with interaction and side effect monitoring. Additionally, the integrity of the product cannot be guaranteed. The vast majority of homes indicate, through their E selection, that this practice does not occur in the home.
- item #70 *(products with look-alike names or packaging…)* – aggregate score of 76% suggests that it may be possible to further address storage of products with look-alike drug names or packaging.
- item #72 – More than 90% of homes indicated through an E score, that an on-call pharmacist is available to respond to drug information questions and is able to come into the home when requested. The few homes that did not score highly should look at this as an opportunity to revisit their pharmacy services contract.
- item #74 –Hazardous chemicals are labelled and stored out of the medication storage and preparation areas to eliminate the possibility that a chemical could be selected for administration. Two-thirds of homes scored D or E. The other homes should take this opportunity to physically remove these items from medication rooms.

(f) ***Key Element VI Medication Delivery Device Acquisition, Use, and Monitoring***

Figure 15: Key Element VI Self Assessment Item Scores



Key Element VI Medication Delivery Device Acquisition, Use and Monitoring *and the Core Characteristic #11 (The potential for human error is mitigated through careful procurement, maintenance, use and standardization of medication delivery devices)* were reviewed:

- This key element and the related core characteristic address the use of medication delivery systems. The selection of an A score implies that these devices are used but none of the self-assessment items have been discussed and there has been no activity to implement them. This may not have been the intent of the interdisciplinary team. If, in fact, these devices are not used, then there is no resident need and an E score would have been appropriate.

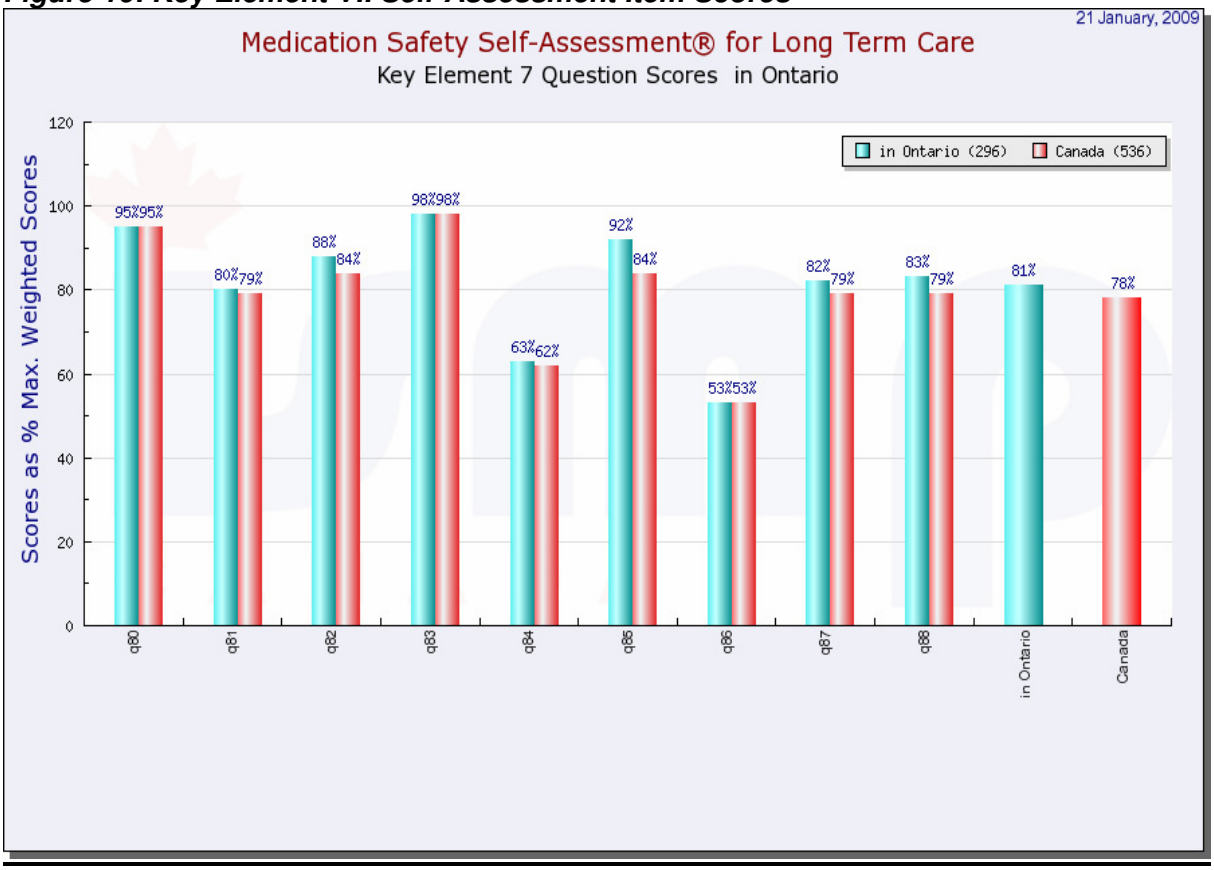
- Item #76 refers to all types of tubing as being appropriately labelled and may apply in some homes

- Where homes use parenteral solutions, item #77 an independent check that it is the correct drug, drug concentration, rate of infusion and line attachment before the drug is administered should be considered for safety

- Items #75 and #78 include the use of insulin pens and should be scored to reflect their use, where applicable.

(g) Key Element VII Environmental Factors

Figure 16: Key Element VII Self-Assessment Item Scores

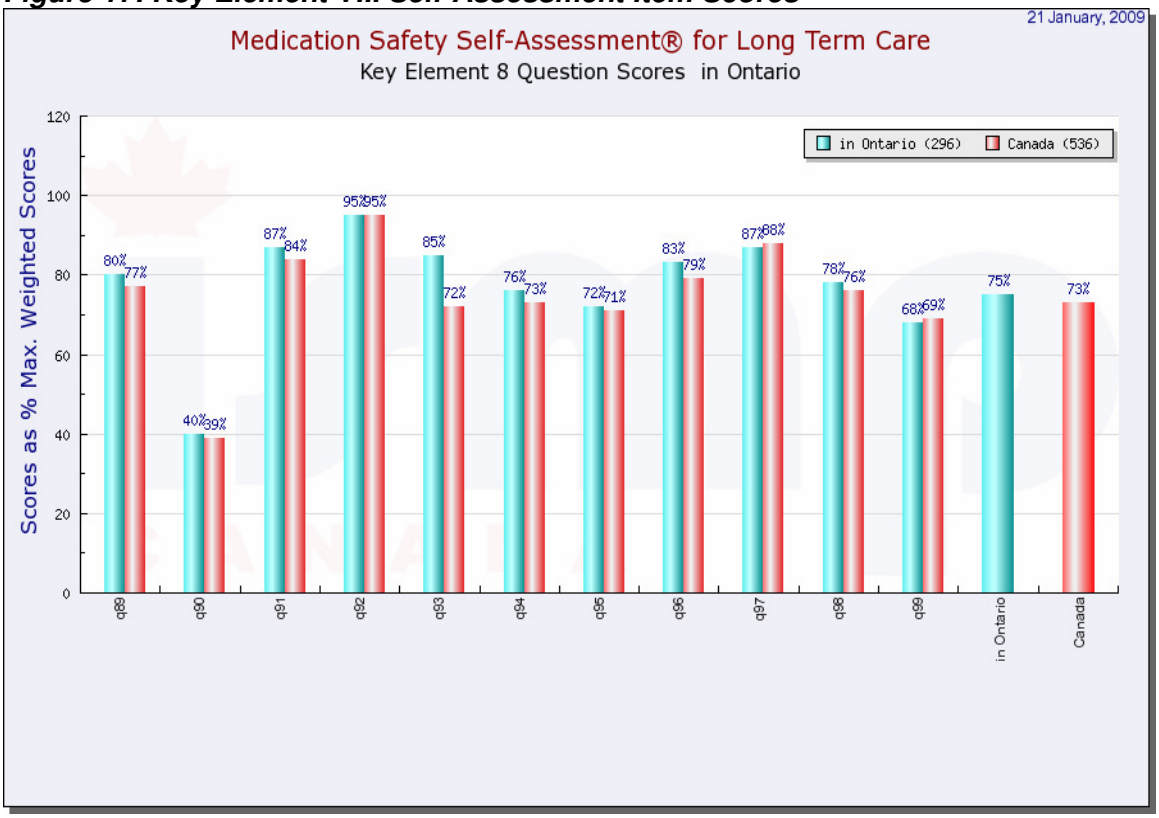


Key Element VII Environmental Factors *and Core Characteristic #12 (Medications are prescribed, transcribed, prepared, dispensed, and administered in a physical environment that offers adequate space and lighting and allows practitioners to remain focused on medication use without distractions), Core Characteristic #13 (The complement of practitioners matches the clinical workload without compromising resident safety)* were reviewed:

- item #84 (*Areas where drugs are ordered, and are transcribed or entered into computer systems are isolated and relatively free of distractions and noise)* – 61 sites ((21%) had no activity or discussion to address this environmental issue; the remaining facilities identified noise and distraction as a risk. 99 sites (33%) scored themselves as having fully dealt with this issue
- item #86 (*Interruptions or distractions to staff administrating medications are minimized during the medication administration process)* – 86 sites (29%) indicated A or B scores and no activity to address the issue. 51 sites (17%) sites rated themselves as fully compliant. Two-thirds of facilities encounter environments with multiple distractions or interruptions during the medication administration process.

(h) Key Element VIII Staff Competence and Education

Figure 17: Key Element VIII Self-Assessment Item Scores



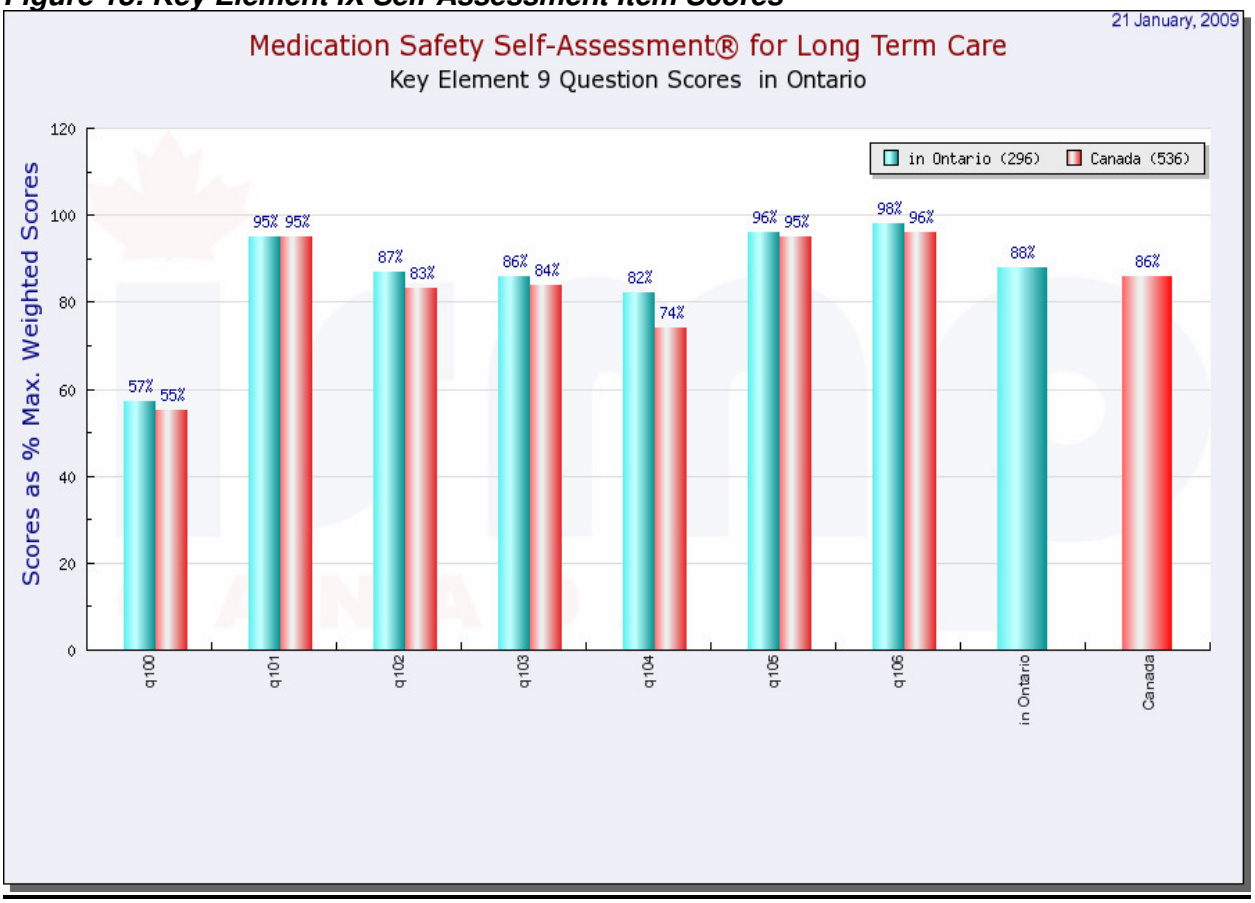
Key Element VIII Staff Competence and Education *and Core Characteristic #14 (Practitioners receive sufficient orientation to medication use and undergo baseline and annual competence evaluation of knowledge and skills related to safe medication practices), #15 (Practitioners involved in medication use are provided with ongoing education about medication error prevention and the safe use of drugs that have the greatest potential to cause harm if misused)* were reviewed:

- Item #90 (*During orientation, practitioners receive information about he Home's/facility's actual error experiences… published errors that have occurred in other Homes… educated about system-based strategies to reduce the risk of such errors)* – 129 sites (44%) scored this item as having no activity (A) or discussion to implement (B)
- item #93 (*A process is in place for routine audits to assure correct medication administration, monitoring of outcomes and follow-up with staff if standards are not met)* – 208 sites (70%) scored this item as being fully implemented and compliant with all the components of the item; outside of Ontario, most facilities across Canada do not meet all the components of this item. The Ontario homes rating E are to be commended for having all components of the process are in place.
- item #95 (*Nurses, pharmacists, and physicians receive ongoing information about medication incidents occurring within the Home, error-prone situations, incidents in other Homes, and strategies to prevent such errors)* – 26 sites (9%) scored A or B

- item #98 and #99 (*When errors occur educational efforts are widespread among all practitioners…; The Medical Advisory and Therapeutics Committee uses medication incident information to identify root causes and to determine appropriate intervention…and the results are reported…)* – 25 sites (9%) scored no activity related to item #98 while 64 sites (22%) indicated no activity for item #99.

(i) Key Element IX Resident Education

Figure 18: Key Element IX Self-Assessment Item Scores

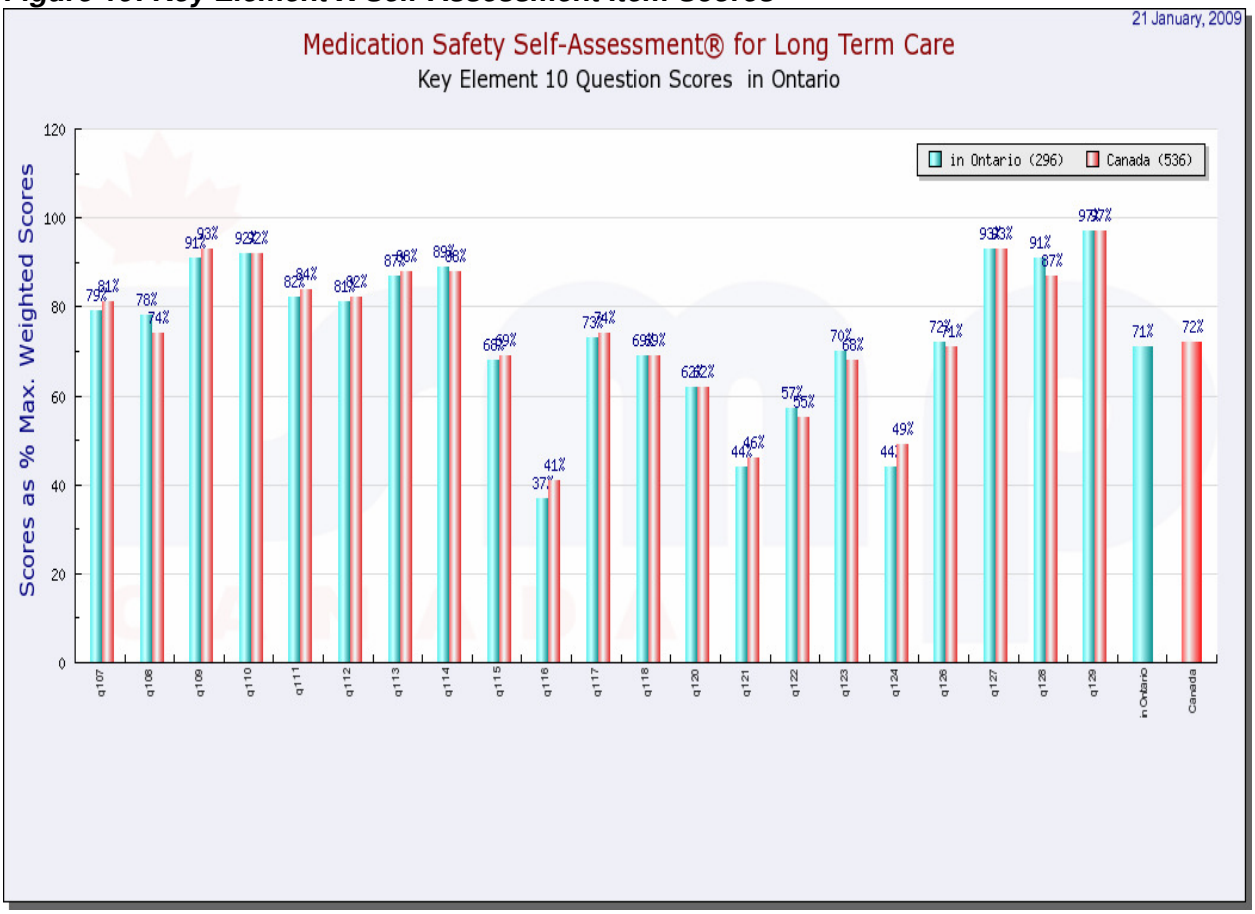


Key Element IX Resident Education *and Core Characteristic #16 (Residents or their substitute decision makers are included as active partners in care through education about the medications and ways to avert harm from medication use)* were reviewed:

- item #100 (…*residents are educated routinely upon admission to assist health care professionals with proper identification…before medications are administered*) – 71 sites (24%) scored A or B as there being no activity to implement
- item #104 (…*practitioner informs the resident, family…of the name and strength of the drug*…) – only 8 sites (3%) scored B; one site scored A. While many sites scored E, multiple sites scored C or D as partially implemented.

(j) Key Element X Quality Processes and Risk Management and Core Characteristic

Figure 19: Key Element X Self-Assessment Item Scores



Key Element X Quality Processes and Risk Management *and Core Characteristic #17(A non-punitive, system-based approach to error reduction …), Core Characteristic #18 (…detect and report errors…analyze incidents…for the purpose of redesigning systems…), Core Characteristic #19 (Simple redundancies…double checks …to detect and correct serious errors…) and Core Characteristic #20 (Proven infection control practices…)* were reviewed:

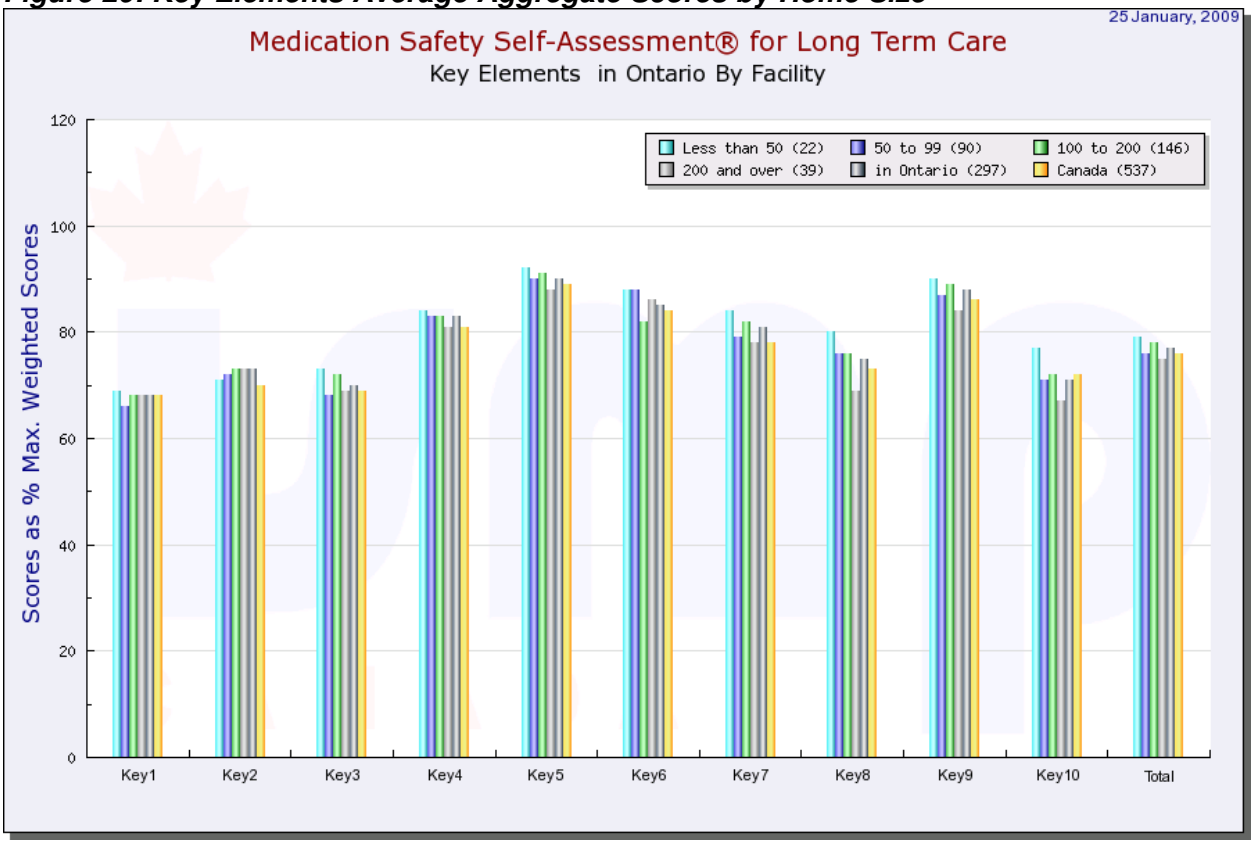
- item #115 (*Specific medication safety objectives…careful analysis of causes, etc. …in strategic plan)* – 66 sites (22%) scored A or B indicating no activity
- item #116 (*…trained practitioners …to enhance detection of medication errors…)* – 178 sites (60%) scored this item as having no activity..
- item #121(*The Medical Advisory and Therapeutics Committee …reviews and uses published error experiences…)* – 158 sites (53%) scored themselves as having no activity on this item
- item #122 (*The Medical Advisory and Therapeutics Committee…analyzes recorded adverse events in the Home. .and uses …for system improvement…)* –102 sites (34%) ranked this item A or B

- item # 124 *(Nurses permanently document…on the MAR…an independent double check…high-alert drugs before administering…)* - 145 sites (49%) scored an A or B identifying no activity on this item.
- item #126 – Two-thirds of homes scored D or E, indicating that staff members have and use appropriate medication handling practices (to avoid direct contact with the skin). However, one-third of homes do not practice this infection control and staff safety process.

(iv) By Home Size

Figure 20 depicts the breakdown of Key Element average aggregate scores by the size of the home (according to number of beds).

Figure 20: Key Elements Average Aggregate Scores by Home Size

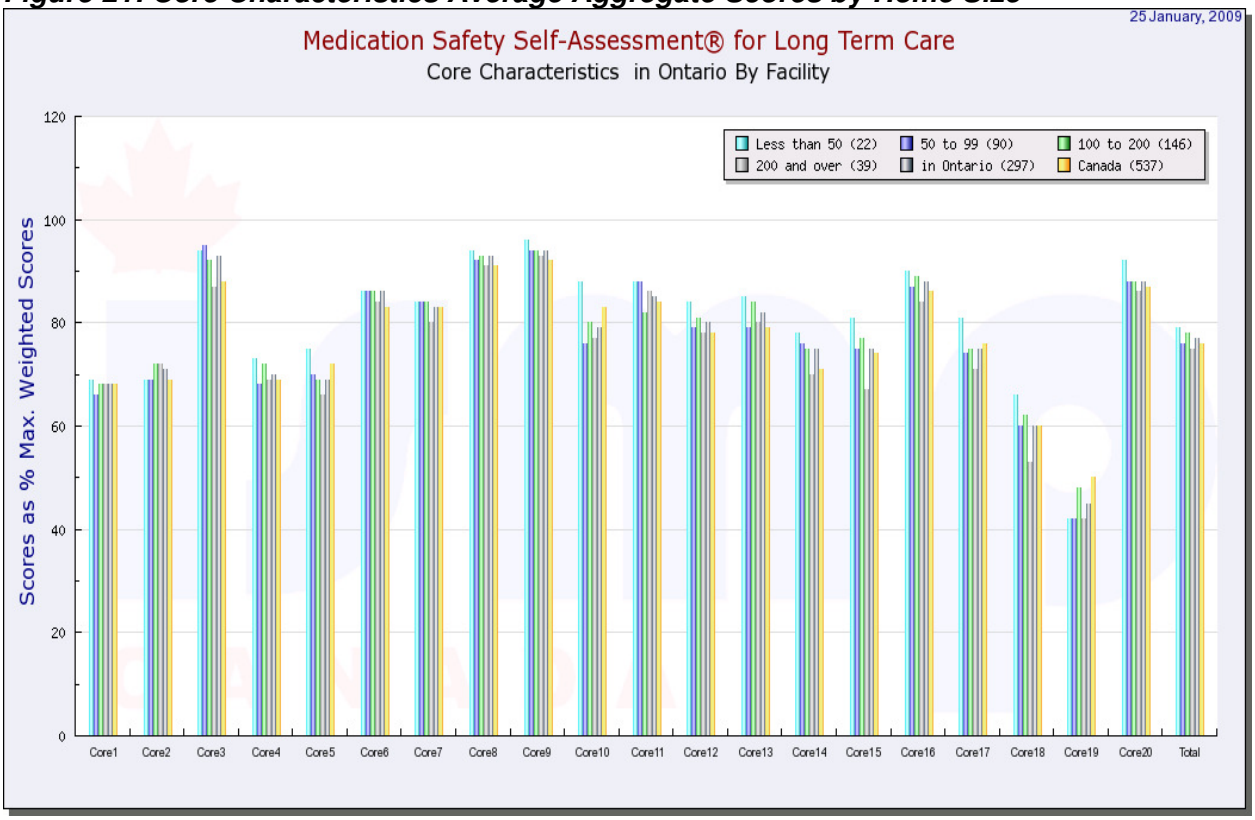


As can be seen in this graph and the following table, the aggregate scores for some Key Elements may differ with the size of the home.

Table 6: Average Aggregate Scores for Key Elements by Home Size

Key Element	≤50 beds	50-99 beds	100-200 beds	≥200 beds
I	69%	66%	68%	68%
II	71%	72%	74%	73%
III	73%	68%	72%	69%
IV	84%	83%	83%	81%
V	92%	90%	91%	88%
VI	88%	88%	82%	86%
VII	84%	79%	82%	78%
VIII	80%	76%	76%	69%
IX	90%	87%	89%	84%
X	77%	71%	72%	67%
Ontario	79%	76%	78%	75%
Canada	75%	76%	76%	74%

Figure 21: Core Characteristics Average Aggregate Scores by Home Size



For any variance, either higher or lower than provincial and Canadian average aggregate scores, the individual home can use the reports created by their own data entry and review the items to identify specific ones that may contribute to a higher or lower than average score.

It should be remembered that some of the self-assessment parameters are not yet widely implemented, but reflect a level of practice to which all homes should aspire (e.g., technology).

(v) By LHIN

a) By Key Elements

Table 7 summarizes the scores as percentage of maximum weighted scores for Key Elements by LHIN region. The number of participating homes is highlighted in brackets under the LHIN name. As previously mentioned, the average aggregate score for Ontario is 77% compared with the national aggregate of 76%.

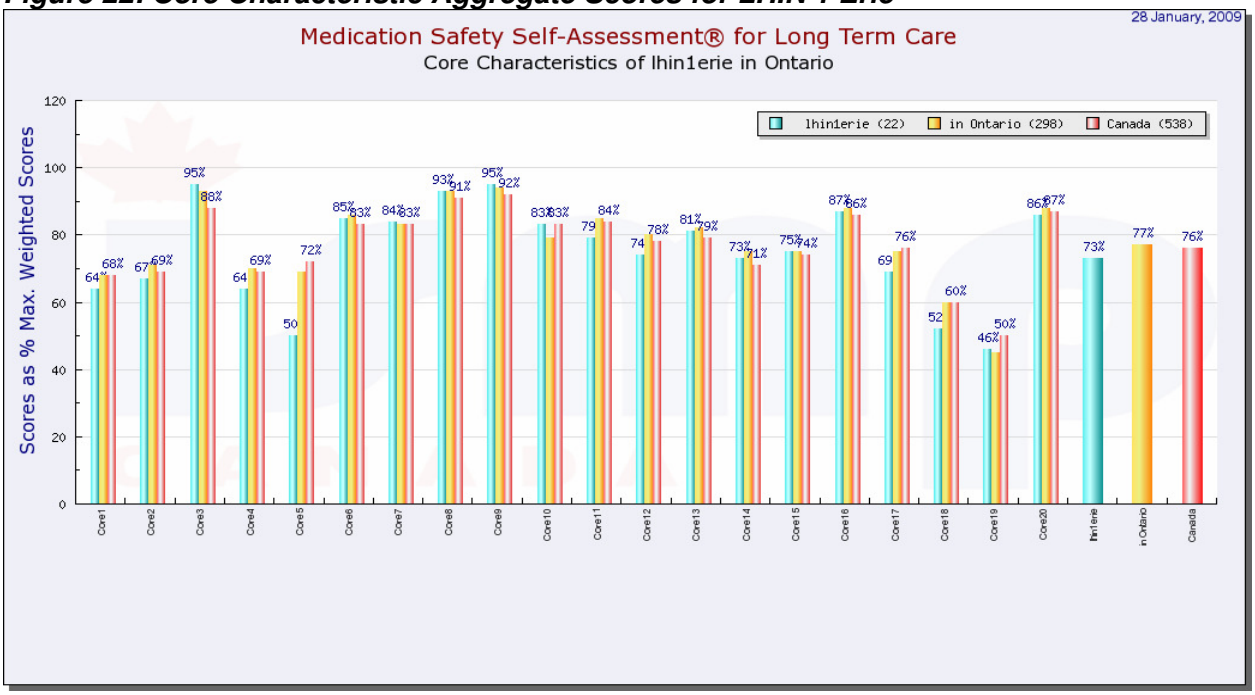
Table 7 – Average Aggregate Scores for Key Elements by LHIN Region

LHIN *(# MSSA completed)*	***Key I***	***Key II***	***Key III***	***Key IV***	***Key V***	***Key VI***	***Key VII***	***Key VIII***	***Key IX***	***Key X***	***LHIN Av***
1. Erie St. Clair (22)	*64%*	*70%*	*64%*	*78%*	*91%*	*79%*	*76%*	*74%*	*87%*	*65%*	*73%*
2. Southwest (37 now 38)	*69%*	*78%*	*74%*	*85%*	*91%*	*79%*	*82%*	*80%*	*87%*	*76%*	*79%*
3. Waterloo Wellington (18)	*66%*	*72%*	*74%*	*81%*	*90%*	*78%*	*78%*	*68%*	*84%*	*67%*	*75%*
4. Hamilton Niagara Haldimand Brant (42)	*69%*	*70%*	*69%*	*82%*	*90%*	*83%*	*78%*	*74%*	*89%*	*71%*	*76%*
5. Central West (10)	*78%*	*74%*	*71%*	*84%*	*94%*	*90%*	*87%*	*84%*	*90%*	*73%*	*81%*
6. Missi-ssauga Halton (11)	*72%*	*76%*	*79%*	*86%*	*93%*	*87%*	*89%*	*79%*	*93%*	*76%*	*81%*
7. Toronto Central (12)	*70%*	*80%*	*71%*	*86%*	*90%*	*85%*	*76%*	*68%*	*84%*	*68%*	*76%*
8. Central (29)	*65%*	*76%*	*74%*	*84%*	*93%*	*84%*	*81%*	*81%*	*88%*	*75%*	*79%*
9. Central East (31)	*68%*	*72%*	*68%*	*83%*	*89%*	*89%*	*84%*	*80%*	*91%*	*76%*	*78%*
10. South East (19)	*65%*	*68%*	*64%*	*82%*	*87%*	*97%*	*82%*	*67%*	*85%*	*63%*	*73%*
11. Champlain (27)	*71%*	*72%*	*76%*	*84%*	*91%*	*88%*	*82%*	*75%*	*90%*	*74%*	*79%*
12. North Simcoe Muskoka (15)	*66%*	*78%*	*72%*	*80%*	*88%*	*73%*	*78%*	*73%*	*88%*	*70%*	*76%*
13. North East (21)	*62%*	*65%*	*63%*	*80%*	*88%*	*92%*	*80%*	*72%*	*85%*	*68%*	*73%*
14. North West (3)	*61%*	*66%*	*73%*	*73%*	*92%*	*100%*	*79%*	*74%*	*88%*	*71%*	*75%*

(ii) By Core Characteristics

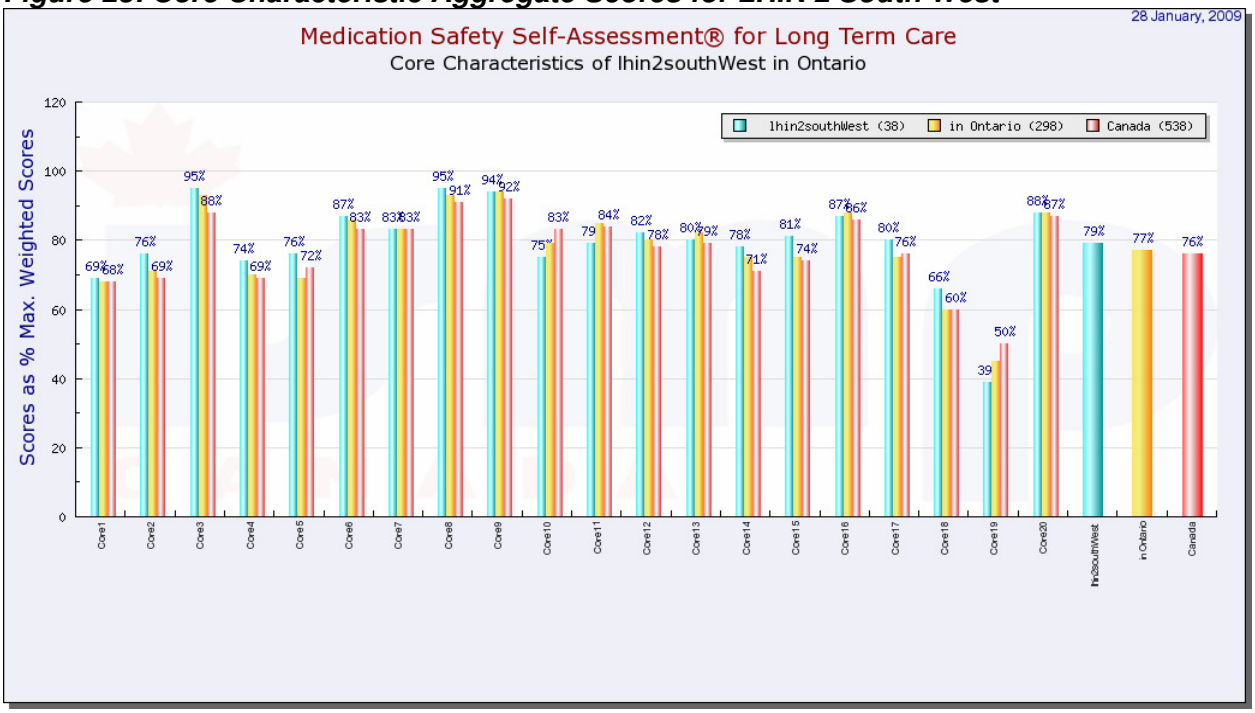
Below are graphs of the core characteristics scores for each LHIN. Following each graph, core characteristics are noted that may be worthwhile for follow up by the LHIN. Selection of A vs E for some items by a few homes was questioned as some scores appeared inappropriately high.

Figure 22: Core Characteristic Aggregate Scores for LHIN 1 Erie



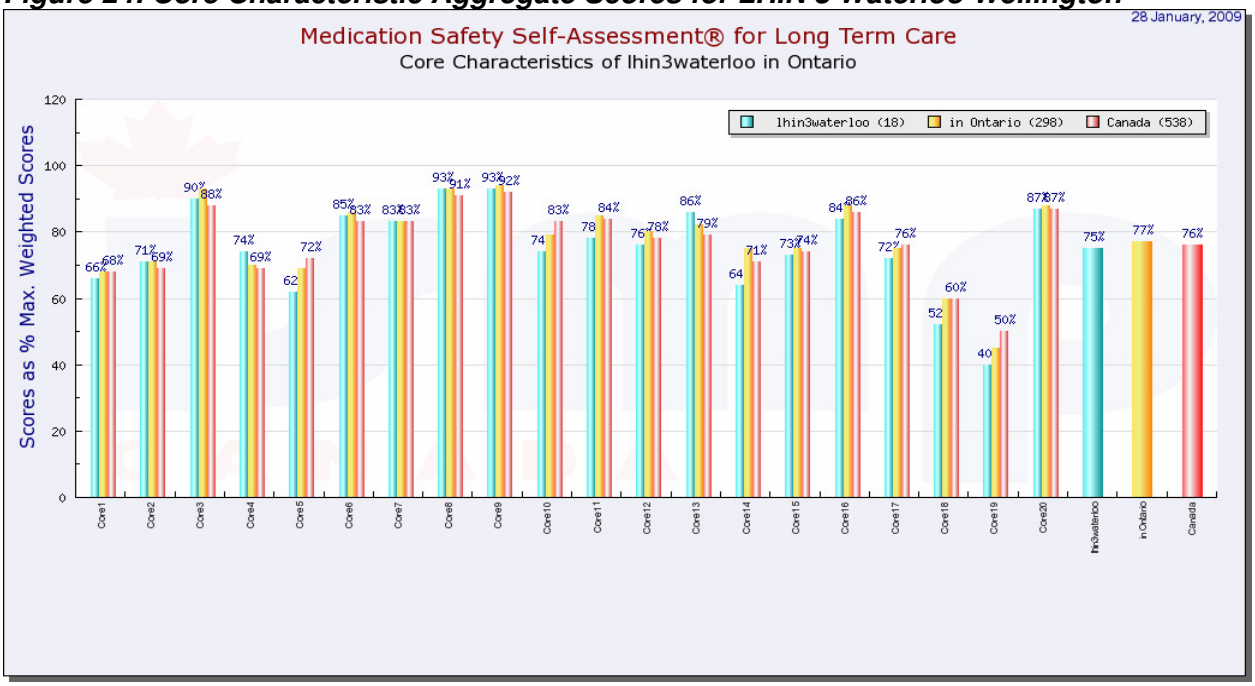
Core Characteristics 3, 4, 5, 17 and 18 are areas (that have 6% or greater difference from the national aggregate) that the LHIN may wish to review.

Figure 23: Core Characteristic Aggregate Scores for LHIN 2 South West



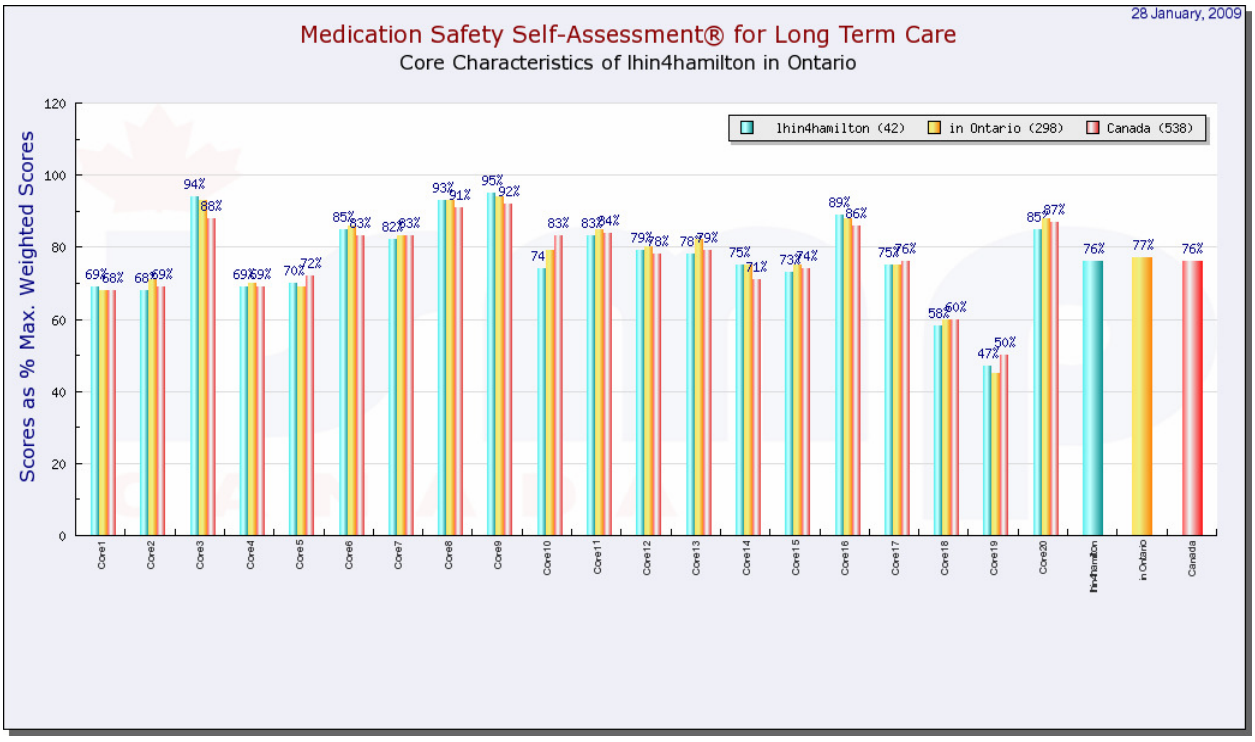
Core Characteristics 2, 3, 10 and 19 are areas (that have 6% or greater difference from the national aggregate) that the LHIN may wish to review.

Figure 24: Core Characteristic Aggregate Scores for LHIN 3 Waterloo Wellington



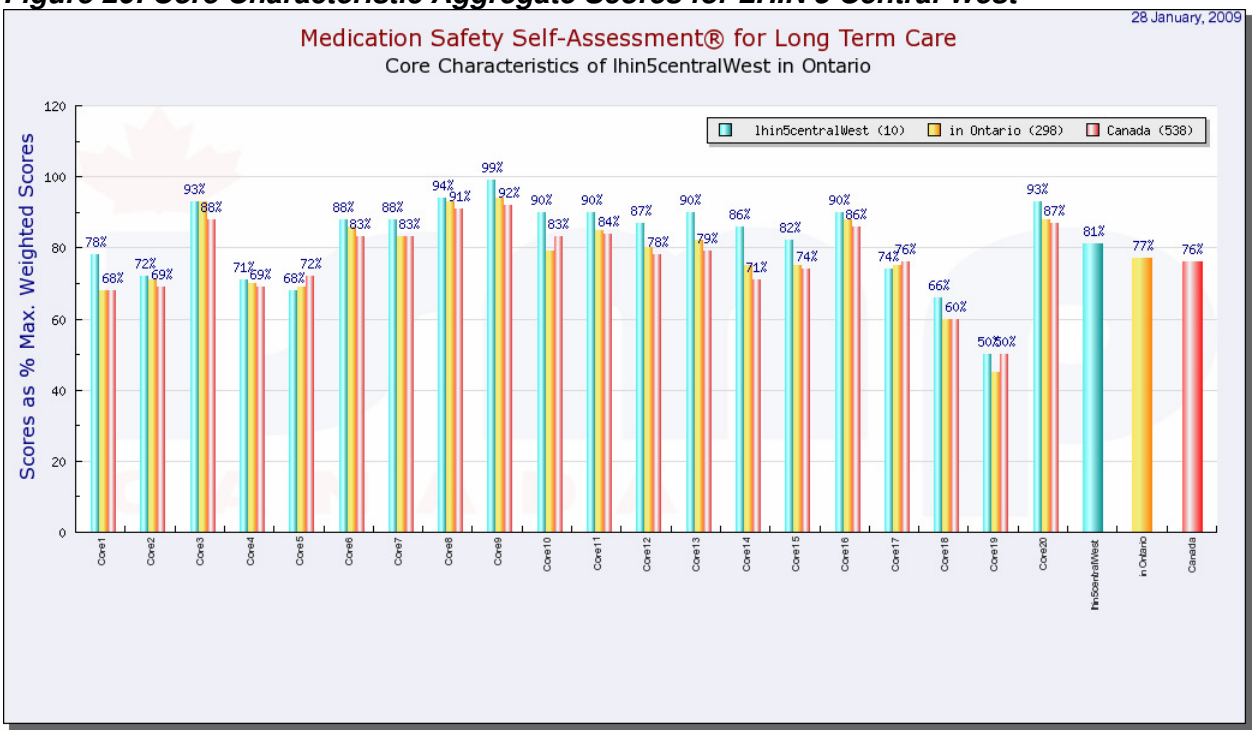
Core Characteristics 5, 10, 13, 14, 18 and 19 are areas (that have 6% or greater difference from the national aggregate) that the LHIN may wish to review.

Figure 25: Core Characteristic Aggregate Scores for LHIN 4 Hamilton Niagara Haldimand Brant



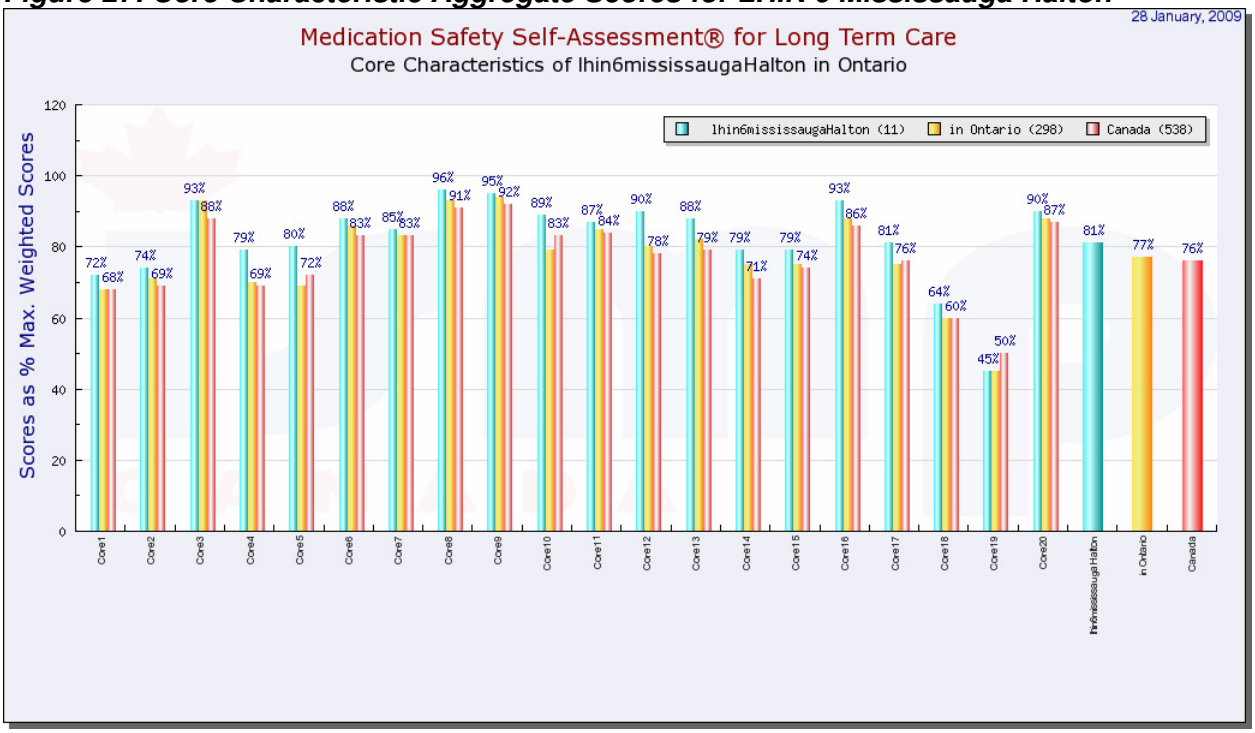
Core Characteristics 3 and 10 are areas (that have 6% or greater difference from the national aggregate) that the LHIN may wish to review.

Figure 26: Core Characteristic Aggregate Scores for LHIN 5 Central West



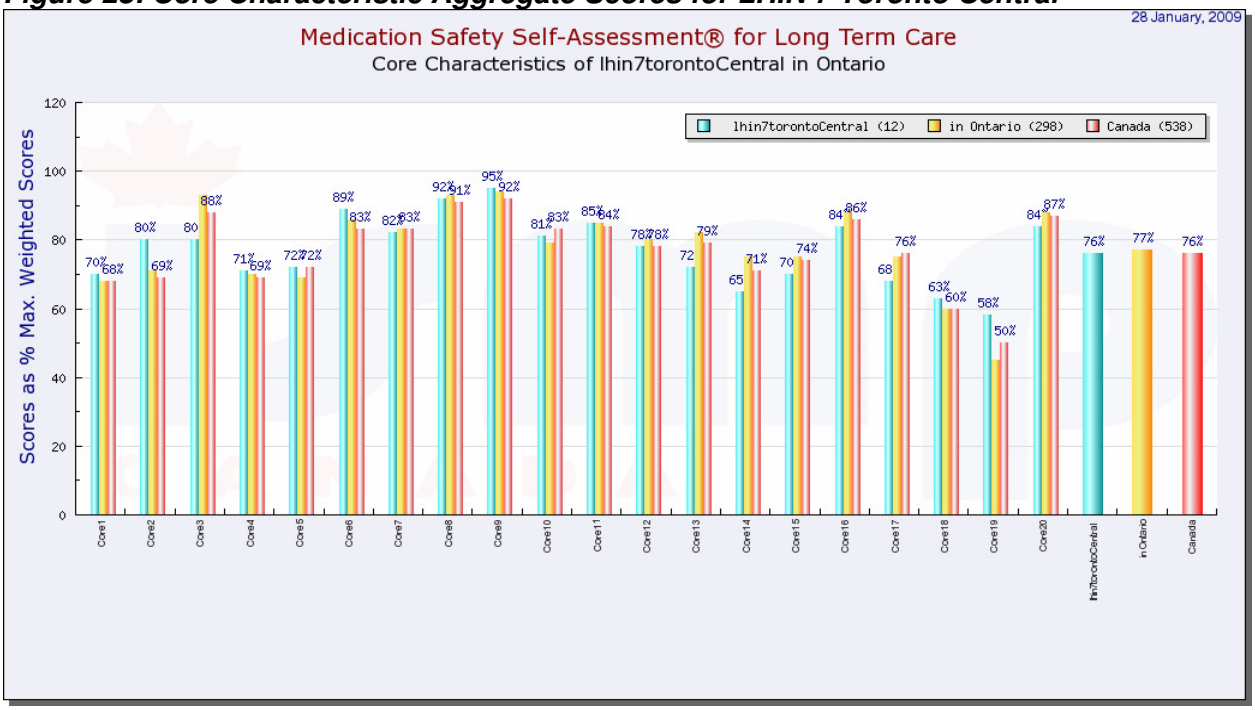
Core Characteristics 1, 9, 10, 12, 13, 14, 15 are areas (that have 6% or greater difference from the national aggregate) that the LHIN may wish to review.

Figure 27: Core Characteristic Aggregate Scores for LHIN 6 Mississauga Halton



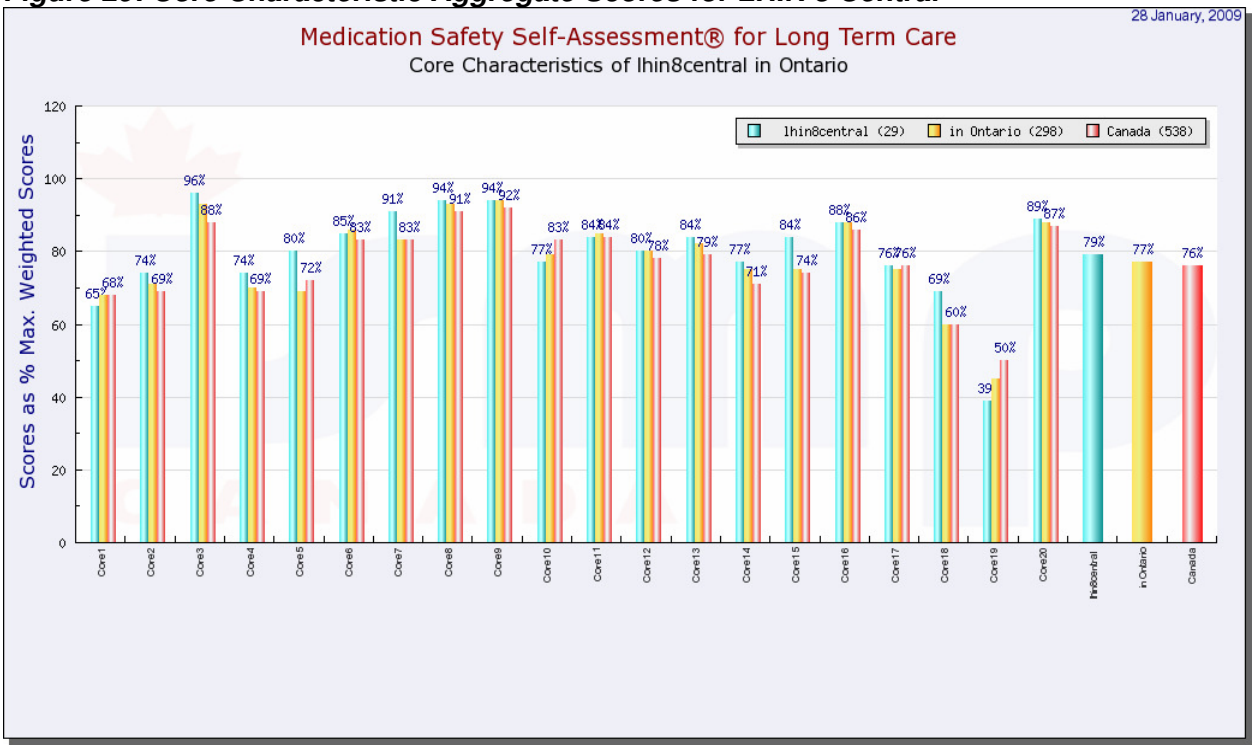
Core Characteristics 4, 5, 10, 12, 13, 14 and 16 are areas (that have 6% or greater difference from the national aggregate) that the LHIN may wish to review.

Figure 28: Core Characteristic Aggregate Scores for LHIN 7 Toronto Central



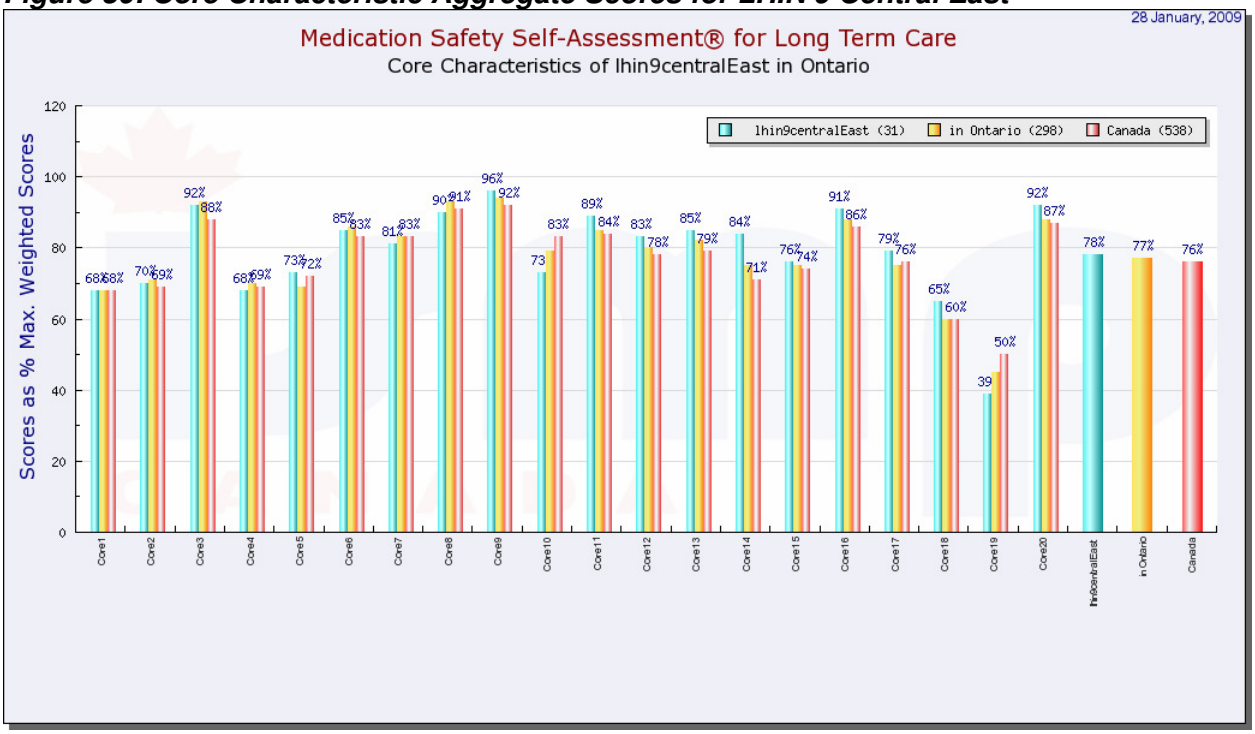
Core Characteristics 2, 3, 6, 13, 14, 17 and 19 are areas (that have 6% or greater difference from the national aggregate) that the LHIN may wish to review.

Figure 29: Core Characteristic Aggregate Scores for LHIN 8 Central



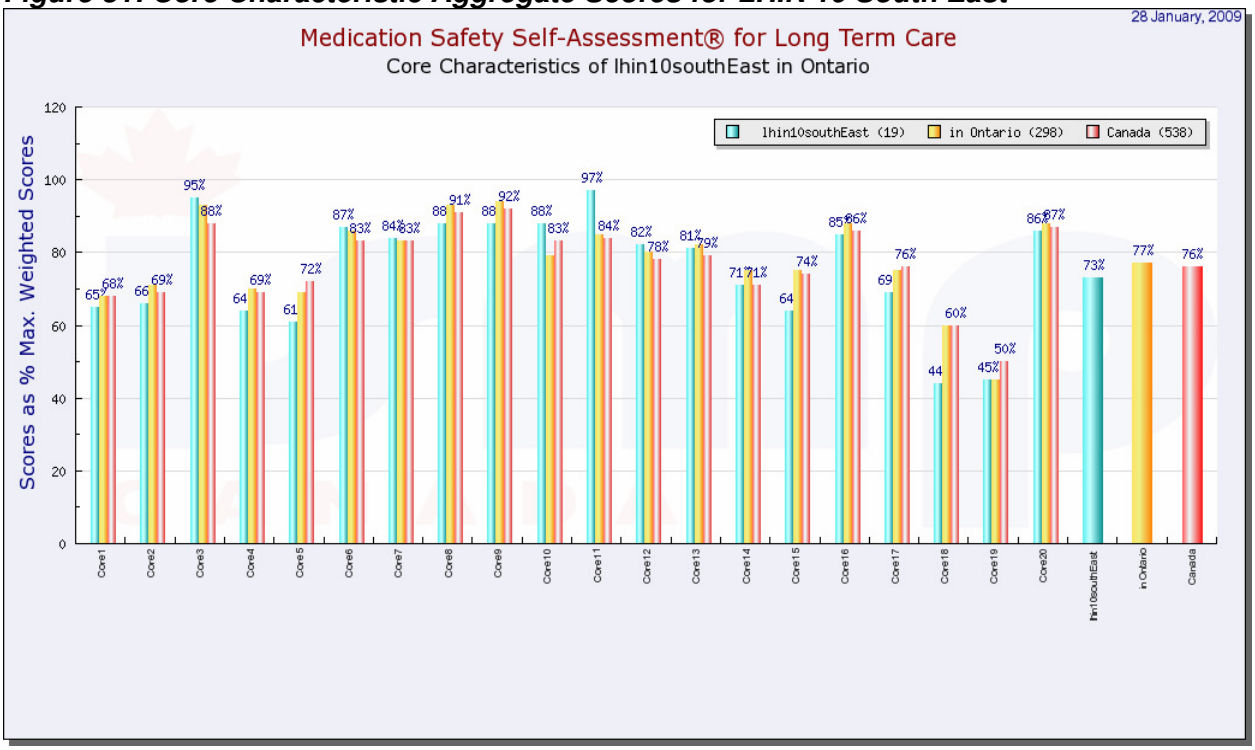
Core Characteristics 3, 5, 7, 10, 14, 15, 18, and 19 are areas (that have 6% or greater difference from the national aggregate) that the LHIN may wish to review.

Figure 30: Core Characteristic Aggregate Scores for LHIN 9 Central East



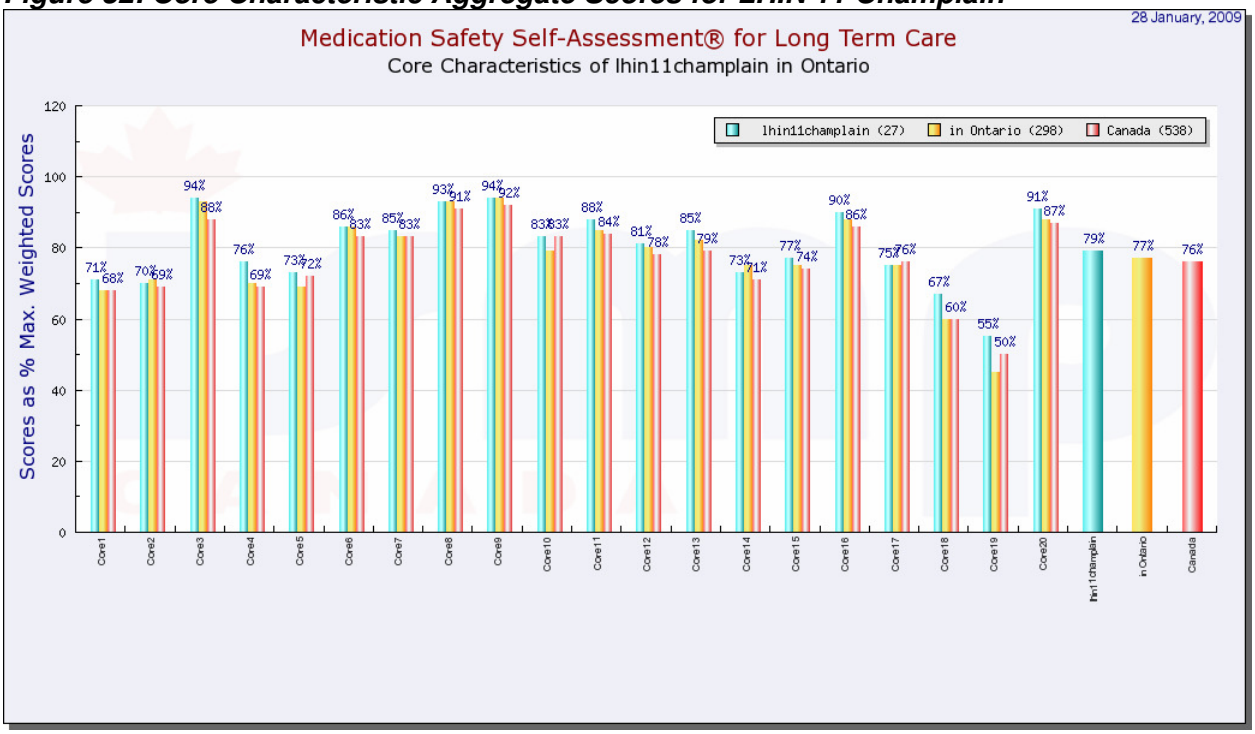
Core Characteristics 10, 13, 14, and 19 are areas (that have 6% or greater difference from the national aggregate) that the LHIN may wish to review.

Figure 31: Core Characteristic Aggregate Scores for LHIN 10 South East



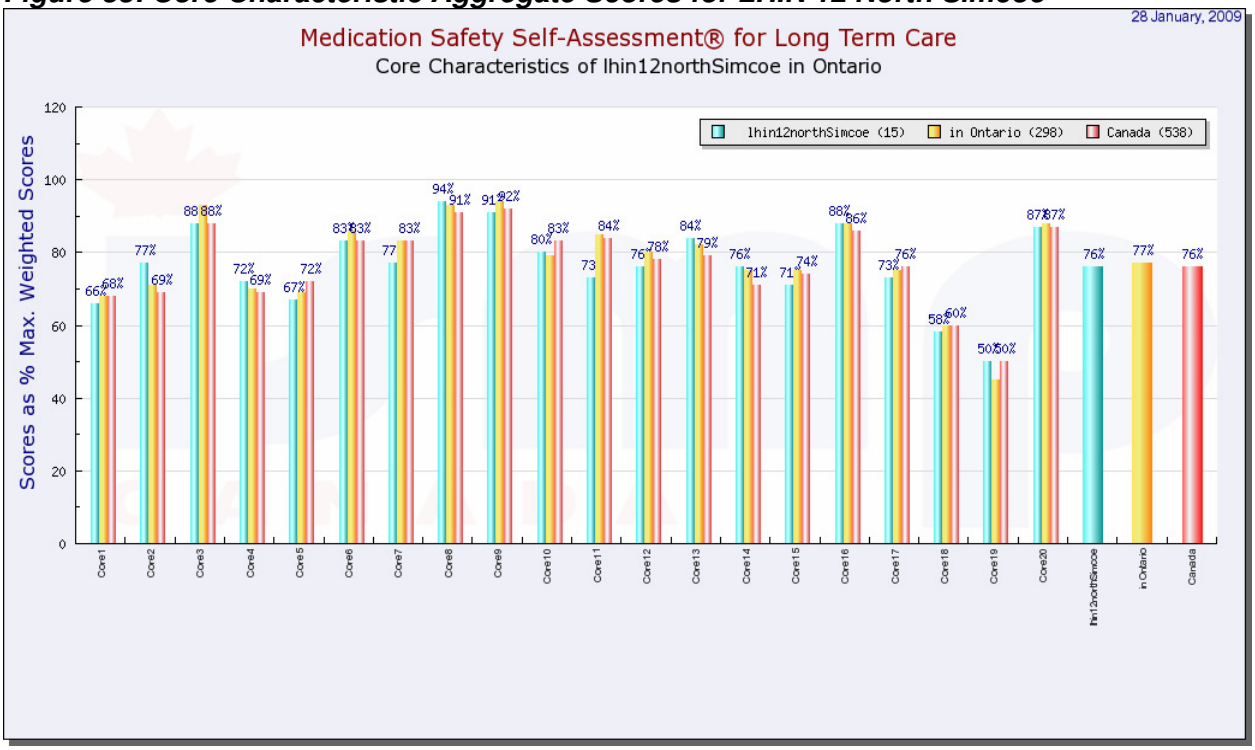
Core Characteristics 3, 5, 11, 15, 17, and 18 are areas (that have 6% or greater difference from the national aggregate) that the LHIN may wish to review.

Figure 32: Core Characteristic Aggregate Scores for LHIN 11 Champlain



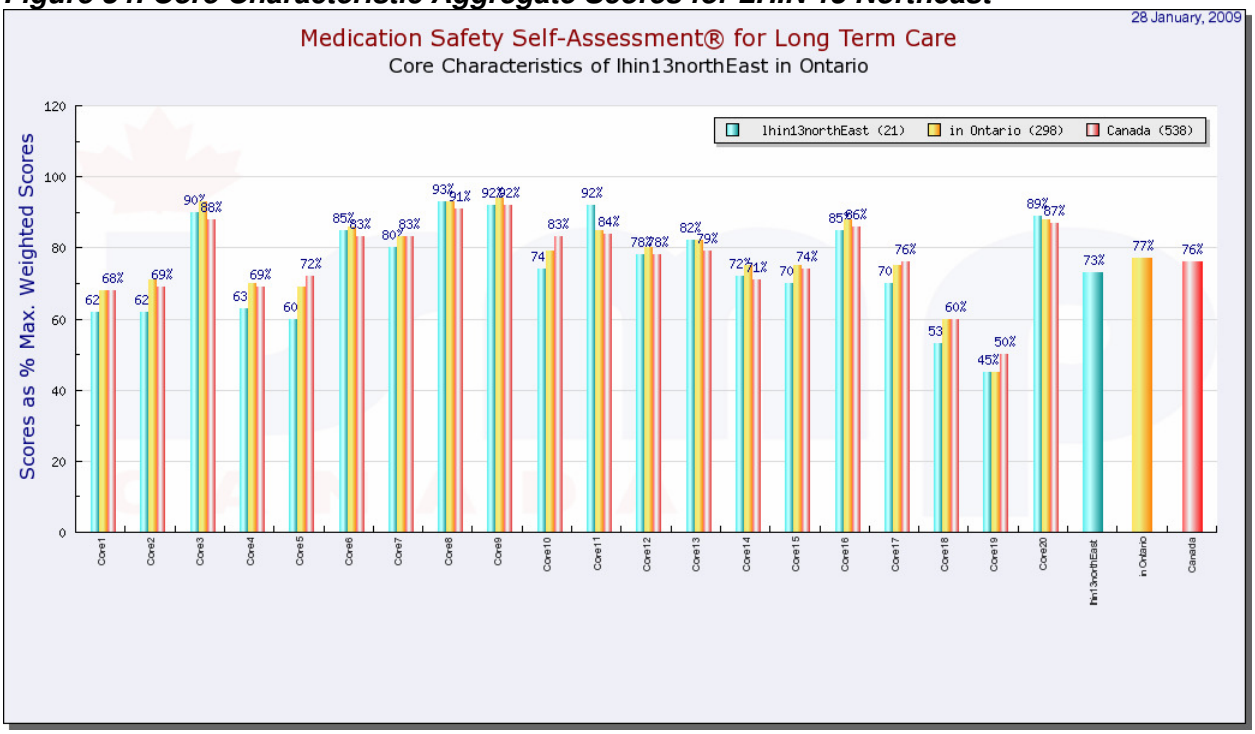
Core Characteristics 3, 4, 13, and 18 are areas (that have 6% or greater difference from the national aggregate) that the LHIN may wish to review.

Figure 33: Core Characteristic Aggregate Scores for LHIN 12 North Simcoe



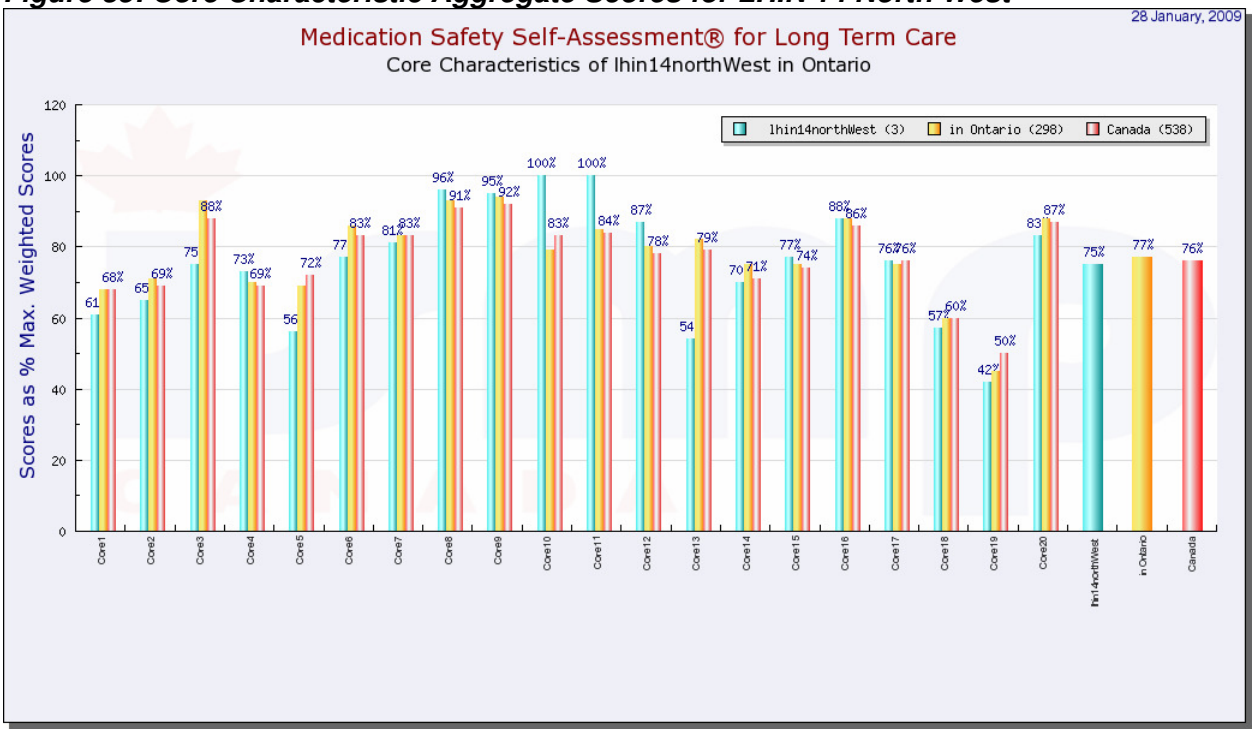
Core Characteristics 2, 7, and 11 are areas (that have 6% or greater difference from the national aggregate) that the LHIN may wish to review.

Figure 34: Core Characteristic Aggregate Scores for LHIN 13 Northeast



Core Characteristics 2, 4, 5, 10, 11, 17, 18 are areas (that have 6% or greater difference from the national aggregate) that the LHIN may wish to review.

Figure 35: Core Characteristic Aggregate Scores for LHIN 14 North West



Core Characteristics 1, 2, 3, 5, 6, 10, 11, 12, 13, and 19 are areas (that have 6% or greater difference from the national aggregate) that the LHIN may wish to review.

INTERPRETATION OF RESULTS

A) System Strengths Across the Province

Table 8 highlights the specific self-assessment items that scored 90% or higher of maximum achievable score. These self-assessment items are presented by their respective Key Element and Core Characteristic.

Table 8: System Strengths Based on Provincial Aggregate Data and 90% or Higher of Maximum Achievable Score

KEY ELEMENT	CORE CHARACTERISTIC	DESCRIPTION
I Resident Information	*1*	*Item #5 pharmacy systems screens for allergies and flags for staff during order entry* *Item #6 current allergy information on MARs* *Item #10 basic resident information visible on medication orders and transmitted to pharmacy* *Item #15 clinical drug monitoring* *Item #16 critical lab value notification system for MDs*
II Drug Information	*2*	*Item #18 drug references are reviewed annually* *Item #21, involving the pharmacist as an active member of the care team* *Item #26 updates for pharmacy computer system loaded at least quarterly* *Item #28 pharmacy computer system maintains medication profiles* *Item #29 copies of formulary are available* *Item #30 new/repeat order process in place*
	3	
III Communication of Drug Orders and Other Drug Communication	*4*	*Item #31 information complete on medication orders* *Items #36, 37,38 telephone order policy followed*
IV Drug Labelling, Packaging and Nomenclature	*5*	
	6	*Item #45 clear and distinctive labels* *Item #48 medications and biologicals labelled for individual residents* *Items #51-53 labelling of commercially available IVs; those that scored A-D imply use but not fully implemented which is a risk; assume E scores reflect lack of use* *Item #54 drugs dispensed in labelled, ready-to-use single dose packaging* *Item #55 drugs remain in original packaging to point of administration*
V Drug Standardization, Storage, and Distribution	*7*	*Item #57 IV solutions A to D scores reflect improvement opportunity; assume E scores reflect lack of use* *Items #58,59 standard drug times and dosing windows established*
	8	*Items #61,62 drug delivery to facilities and nursing notification* *Items #64-67drugs available to meet resident needs*
	9	*Item #69 non-prescription medications stocked* *Item #71 limited after hours stock* *Item #72 on-call pharmacist available*

	10	
VI Medication Delivery Device Acquisition, Use and Monitoring	***11***	***Item #78 limited medication administration device types***
VII Environmental Factors	***12***	***Item #80 lighting adequate*** ***Item #83 medication storage appropriate*** ***Item #85 refrigerator used to store residents' medications***
	13	
VIII Staff Competence and Education	***14***	***Item #92 new practitioner orientation time can be individualized***
	15	
IX Resident Education	***16***	***Item #101 current resident photograph available to assist nursing staff in identifying the resident before medication administration.*** ***Item #105 resident/family encouraged to ask questions about meds*** ***Item #106 follow up resident/family concerns regarding medication***
X Quality Processes and Risk Management	***17***	***Item #109 no disciplinary action to those who make an error*** ***Item #110 no demerit system for those who make an error***
	18	
	19	
	20	***Item #127 hand washing prior to preparing or administering injections*** ***Item #128 avoid using multiple dose vials*** ***Item #129 eye, ear, topicals not used for more than one resident***

B) Potential Quality Improvement Initiatives

There are some common themes in the results of Ontario and Canada. Some changes are dependent upon human and fiscal resources; others upon developing working relationships with other health care sites and with the community. There also is the opportunity for those homes that scored E on specific items to share their practices and implementation learning to those who scored A or B for those items.

It is also important for each home to review its own reports, particularly the items that were scored A or E, to ensure that the appropriate score was chosen. A implies that the item is applicable to the residents to whom the home provides service, but that item has not been discussed and/or there is no activity to consider it. Whereas, the E score is appropriate for items that do not apply to the home because there is no resident need identified OR the item is fully implemented and thus does not pose a safety risk to residents. The inappropriate choice of A or E can have significant impact on the total score for a Core Characteristic and may be misleading. Further if a home is one of the few selecting A or B for a specific item that may be a flag for seeking improvement action.

There are a number items where a few homes scored A or B indicating no implementation. These homes would benefit from learning from others that have fully implemented those items. Systems for sharing such information may be helpful to develop.

Also it should be noted that Accreditation Canada includes in its Required Organizational Practices (ROP):

- Medication reconciliation at admission
- Medication reconciliation at referral/transfer

- Dangerous abbreviations (in effect in 2009).

Table 9 highlights areas of challenge suggested by the results which could be considered for home, corporate, regional or province-wide quality improvement initiatives. The items were taken based on an arbitrary cut off point of 60% and/or on data compiled from the Canadian experience with the Medication Safety Self-Assessment® for Long Term Care. There are still many valid and beneficial items that may be of value to pursue by individual homes that may have ranked their items higher than 60%. The selection by an individual home may be determined by the weight of an item (can be determined from own scores), by what is perceived as a particular problem by staff in a home, by other information available in the home (e.g. medication incident reports, adverse events reports), other initiatives to which an item could be aligned (e.g. technology implementation, Accreditation), staffing and other resource requirements etc.

Table 9: Potential Quality Improvement Activity
(Based on provincial results and using cut off level of 60% or less of achievable score and/or on data compiled from the Canadian experience with the Medication Safety Self-Assessment® for Long Term Care)
(Impact score: *** highest importance; ** moderate importance; **lower importance)

KEY ELEMENT	CORE CHARACTERISTIC	DESCRIPTION	IMPACT SCORE
I Resident Information	1	Item 14, along with 12 and 13 suggest any effort toward medication reconciliation at the time of admission, discharge or transfer will enhance resident safety.	#14 ** #12 ** #13 **
		Item 4 (allergy alerts) also may be impacted by admission processes as well as ongoing communication to prescribers	#4 *
		Item 9 (bar coding during administration) offers future opportunities for improvement with further research and development to fit LTC sector needs	#9 ***
		Item 1 (laboratory values) may be impacted by admission processes and communication to prescribers	#1 *
II Drug Information	2	This functionality should be incorporated into software designs and requested by purchasers (in specifications) as homes move to introduce more technology:	
		Item 22 CPOE dose range checks	#22 *
		Item 23 Pharmacy computer dose range checks	#23 **
		Item 24 Pharmacy computer maximum dose checks for high alert meds	#24 *
		Item 25 CPOE maximum dose checks	#25 *
	3		
III Communication of Drug Orders and Other Drug Communication	4	Item 32 including clinical indication in drug orders	#32 *
		Item 33 list of prohibited, dangerous abbreviations	#33 ***
		Item 39 eMARs and CPOE included in software design	#39 **
		Item 41 automated medication systems	#41 **
IV Drug Labelling, Packaging and Nomenclature	5	Item 43 review of medication safety literature and action	#43 **
		Item 49 machine readable coding, e.g., bar coding	#49 **
	6		

V Drug Standardization, Storage, and Distribution	***7***	***Item 56 distinct labels, limited concentration for high alert drugs*** ***Item 60 procedure related to self-medication***	***#56** ***#60****
	8		
	9		
	10		
VI Medication Delivery Device Acquisition, Use and Monitoring	***11***		
VII Environmental Factors	***12***	***Item 84 distraction-free drug order and processing areas*** ***Item 86 interruptions minimized during administration of medication***	***#84***** ***#86*****
	13		
VIII Staff Competence and Education	***14***	***Item 90 incident information during orientation*** ***Item 93 audits re administration, monitoring***	***#90***** ***#93*****
	15		
IX Resident Education	***16***	***Item 100 resident education regarding own identification to staff***	***#100*****
X Quality Processes and Risk Management	***17***	***Item 116 practitioners employed to detect errors, analysis, reduction plan***	***#116****
	18	***Item 121 Medical Advisory and Therapeutics Committee uses published error experiences*** ***Item 122 Committee analyzes adverse events in Home and uses for improvement***	***#121**** ***#122****
	19	***Item 124 Permanent documentation for double checks of high alert drug administration***	***#124*****
	20		