AN ASSESSMENT OF THE COMPASS QUALITY IMPROVEMENT INITIATIVE:

A SUMMARY OF KEY FINDINGS

COMPASS
Community Pharmacists Advancing **Safety** in Saskatchewan

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Overview

The purpose of this report is to assess the changes that have occurred in Saskatchewan community pharmacies through the use of the COMPASS quality improvement program. COMPASS (i.e., Community Pharmacists Advancing Safety in Saskatchewan) is a quality improvement program that provides community pharmacy staff with the tools needed to better report and learn from medication incidents and implement system-based changes to reduce the likelihood of similar incidents occurring again. Medication incidents are defined for this report as:

> Any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the healthcare professional, patient, or consumer. Medication incidents may be related to professional practice, drug products, procedures, and systems, and include prescribing, order communication, product labelling, packaging, nomenclature, compounding, dispensing, distribution, administration, education, monitoring, and use.[1]

While there are many valuable insights into patient safety that can be gained through an initiative such as COMPASS, the goal of this report is to:

- Determine the uptake of various COMPASS tools, including the medication incident reporting system and safety self-assessment survey;
- Identify the key benefits and challenges of COMPASS use; and
- Assess how the safety culture of the pharmacy, including working conditions, safety focus, blame culture, and organizational learning, has changed through COMPASS use.

AT A GLANCE

This report…

Explores the uptake of various COMPASS tools, such as the medication incident reporting tool and self-assessment survey.

Identifies the key benefits and challenges of COMPASS use.

Assesses how the safety culture of the pharmacy, including working conditions, safety focus, blame culture, and organizational learning, has changed through COMPASS use.

[1] ISMP Canada (2016) Definition of Terms, https://www.ismp-canada.org/definitions.htm, Accessed May 19, 2016.

Study Methods

To address these objectives, a survey was conducted with pharmacists from community pharmacies that piloted the COMPASS program. Ethics approval for the study was obtained from the St. Francis Xavier University Research Ethics Board, which reviewed this study's research methods and protocols following the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans.

In February 2016, 308 questionnaires were mailed to Saskatchewan pharmacists whose community pharmacy was part of the COMPASS pilot project. Of the 308 questionnaires mailed, a total of 100 were returned for an initial response rate of 32.5%. However, of these 100 returned questionnaires, 11 were excluded from further analyses due to insufficient information. Cases were excluded if the pharmacist was not fully aware that COMPASS was being used in their pharmacy or if there was significant missing data, especially regarding questions related to pre- and post-COMPASS comparisons. In addition, seven questionnaires from pharmacists that have worked at their current pharmacy for less than six months were excluded from further analyses, as they were not employed in the pharmacy long enough to provide a detailed assessment of COMPASS (e.g., may not have been involved in at least one quarterly meeting, insufficient pre- and post-COMPASS experience). Removing these questionnaires, a total of 82 questionnaires were retained for this report, yielding a usable response rate of 26.6%

Key Findings

Respondent Demographics

Pharmacist groups represented among the 82 usable questionnaires included pharmacy owners (11, 13.4%), pharmacy managers (16, 19.5%), staff pharmacists (52, 63.4%) and relief pharmacists (3, 3.7%). Of the 82 pharmacists, 58 (70.7%) were female and 24 (29.3%) were male. The average length of time working in community pharmacy practice reported was 16.5 years, with an average of 9.0 years spent at their current pharmacy.

AT A GLANCE

Demographics

Pharmacists worked an average of 16.5 years in community pharmacy, with an average of 9.0 years spent at their current pharmacy.

Pharmacists were most likely to work for an independent or banner pharmacy.

Over a third of pharmacists indicated that no formal process existed in their community pharmacy for reporting medication incidents.

More pharmacists reported working in a community pharmacy located in a city (51, 62.2%) than in a town (21, 25.6%) or rural setting (9, 11.0%).[2] Pharmacists were most likely to work for an independent or banner pharmacy (49, 59.8%) and least likely to work within a mass merchandiser setting (5, 6.1%). The mean number of staff pharmacists per pharmacy was 4.2, with a mean of 4.0 pharmacy technicians on staff. The average weekly prescription volume was 1450.

Many pharmacists reported that they had a formal process or steps in place for reporting medication incidents (51, 62.2%). These processes ranged from manual to fully computerized, with manual processes (35, 42.7%) far more common than computerized ones (2, 2.4%). Despite many pharmacists having a formal process in place for reporting medication incidents, over a third of pharmacists (31, 37.8%) indicated that no formal process existed in their community pharmacy prior to COMPASS.

Use of COMPASS Tools

A key component of COMPASS is reporting medication incidents to a national database using ISMP Canada's CPhIR online tool. Pharmacies represented in the study have been using COMPASS for an average of 14 months, with a range of 6 to 36 months. Most pharmacists (56, 68.3%) are familiar with CPhIR, having reported at least one incident. However, most pharmacists have not reported recently (at the time of questionnaire completion). It appears that the extent of reporting has slowed since initial COMPASS adoption.

Overall, pharmacists reported low CPhIR usage during COMPASS adoption, with 23 (28.0%) having reported no medication incidents in the past month (at the time of questionnaire completion) and 11 (13.4%) having reported no incidents since the start of COMPASS. Furthermore, 37 (45.1%) pharmacists could not estimate the number of medication incidents that the pharmacy reported to CPhIR in the past month (at the time of questionnaire completion) and 41 (50.0%) could not estimate the number of incidents that the pharmacy reported to CPhIR since the start of COMPASS.

[2] One pharmacist chose not to answer this question.

AT A GLANCE

Findings

Pharmacies had been using COMPASS for an average of 14 months.

Pharmacists are not fully utilizing the formal tools and techniques of COMPASS.

Significant cultural changes occurred in the pharmacy during COMPASS use.

Finding time to report and meet to discuss incidents and becoming overwhelmed by near miss reporting are the largest challenges faced.

As part of the COMPASS initiative, community pharmacies are expected to complete an initial MSSA upon program adoption and one every year during COMPASS use. The range of MSSA participation by the pharmacists in this study varied. Twenty-three (28.0%) pharmacists did not know if their pharmacy completed the MSSA. Two (2.4%) pharmacists confirmed that a MSSA was never completed. However, for the most part, in pharmacies that completed the MSSA, the pharmacist was involved.

Since the start of COMPASS, 17 (20.7%) pharmacists reported that no formal meeting had been held to discuss medication incidents. Forty-two (51.2%) pharmacists indicated that between 1 and 5 formal meetings have been held, and 8 (9.8%) pharmacists reported that between 5 and 9 meetings have been held in their pharmacy. When meetings were held, pharmacists were usually in attendance.

Of those pharmacists that were involved in such meetings, the vast majority reported feeling comfortable talking about medication incidents and were involved in such discussions. However, pharmacists were almost evenly split with their involvement in the development of an improvement plan based on these discussions. A large number of pharmacists did not know if their pharmacy developed an improvement plan based on incident discussion (20, 24.4%) or confirmed that no plan was developed (22, 26.8%). However, when a plan was developed, most pharmacists were involved.

Safety culture changes during COMPASS use

To assess the impact of COMPASS use on the safety culture of the pharmacy, pharmacists were asked to indicate their agreement (i.e., 1 – strongly disagree to 5 – strongly agree) with a series of questions related to working conditions, blame culture, safety focus, and organizational learning.[3] Pharmacists were asked to first answer these questions thinking of the conditions in the pharmacy before the adoption of COMPASS (i.e., pre-COMPASS use). They were then asked to answer the same questions again thinking of conditions in the pharmacy at time of questionnaire completion (i.e., while using COMPASS) (i.e., post-COMPASS use).

Working conditions relate to staffing levels and working hours that might impact the level of safety at a pharmacy. Overall, pharmacists indicated improvements in two areas related to working condition, specifically a reduction in the view that staff work in “crisis mode” trying to do too much, too quickly and that it is by luck that more serious mistakes don’t happen. Perceptions of staff work load and hours did not change while using COMPASS (Table 1).

[3] Phipps, D.L., De Bie, J, Herborg, H. et al (2012) Evaluation of pharmacy safety climate questionnaire in European community pharmacies, International Journal for Quality in Health Care, 24(1):16-22.

Table 1. Working conditions

Working Conditions	N	Pre COMPASS Mean	Post COMPASS Mean	Sign. Diff (Pre-Post)	Sign.
There are not enough staff to handle the workload	79	2.62	2.56		
Staff work in "crisis mode" trying to do too much, too quickly	79	3.47	3.23	.24	.000
Staff work longer hours than is sensible for patient care	79	2.04	2.01		
It is by luck that more serious mistakes don't happen in the pharmacy	79	2.38	2.14	.24	.000

Safety focus captures the commitment to patient safety in the pharmacy. Respondents believed that their pharmacies did have a safety focus prior to implementing COMPASS (i.e., means less than 3), but the data shows that safety focus has improved even further since instituting COMPASS. While using COMPASS, there was a decrease in the view that training in safety is irritating, costly, and time consuming and that little commitment is paid to patient safety until a medication incident does occur (Table 2).

Table 2. Safety Focus

Safety Focus	N	Pre COMPASS Mean	Post COMPASS Mean	Sign. Diff (Pre-Post)	Sign.
Training in safety has a low priority and is seen as irritating, time consuming and costly	78	2.32	2.10	.22	.003
Staff are seen as already trained to do their job, so why would they need more training	79	2.29	2.16		
"Lip service" is paid to patient safety until an actual safety incident occurs	66	2.52	2.23	.29	.001

Overall, pharmacists highlight a reduction in the blame culture in the pharmacy during COMPASS, with all four elements of blame culture showing statistically significant reductions (Table 3). During COMPASS, large reductions occurred to the view that it feels like the person is being reported, not the problem, when a medication incident occurs and that staff are reluctant to report medication incidents.

Table 3. Blame Culture

Blame Culture	N	Pre COMPASS Mean	Post COMPASS Mean	Sign. Diff (Pre-Post)	Sign.
There is a blame culture, so staff are reluctant to report medication incidents	79	2.24	1.81	.43	.000
Staff feel that their mistakes are held against them	77	2.27	2.01	.26	.003
When a medication incident is reported, it feels like the person is being reported, not the problem	78	2.92	2.33	.59	.000
Medication incident discussions aim to assign blame to individuals	78	1.95	1.64	.31	.000

Organizational learning is the ability and willingness of the community pharmacy to proactively develop and maintain a safe working environment. The organizational learning construct captures pharmacists agreement on a number of items relating to how well their pharmacy reports and discusses medication incidents as they occur, trains staff on medication safety issues, develops and implements quality improvement plans, and encourages open discussions of medication incidents (Table 4).

Overall, pharmacists had a more positive outlook on organizational learning during COMPASS usage than prior to starting the program. Large improvements occurred in the view that staff routinely discuss ways to prevent medication incidents from happening again, all staff are constantly assessing risks and looking for improvements, and medication incident discussions aim to learn from errors and communicate the findings widely. Smaller improvements (relative to the other elements of organizational learning) occurred for the extent that the pharmacy manager/owner seriously considers staff suggestions for improving patient safety and staff will freely speak up if they see something that may negatively affect patient care.

Table 4. Organizational learning

Organizational Learning	N	Pre COMPASS Mean	Post COMPASS Mean	Diff (Pre-Post)*	Sign.
Staff routinely discuss ways to prevent medication incidents from happening again	79	2.91	3.80	-.89	.000
All staff are constantly assessing risks and looking for improvements	78	3.06	3.91	-.85	.000
Staff are routinely informed about medication incidents that happen in the pharmacy	78	3.19	3.91	-.72	.000
The culture is one of continuous improvement	76	3.41	3.92	-.51	.000
The effectiveness of any changes made following a medication incident are evaluated	77	2.52	3.23	-.71	.000
The pharmacy learns and shares information about safety with staff and other pharmacies	74	2.95	3.47	-.53	.000
The team has a shared understanding and vision about safety issues; everyone is equally valued and feels free to contribute	78	3.21	3.77	-.56	.000
Following a medication incident, there is a real commitment to change throughout the pharmacy	76	3.22	3.84	-.62	.000
Staff will freely speak up if they see something that may negatively affect patient care	78	3.77	4.12	-.35	.000
Medication incident discussions are seen as learning opportunities	77	3.26	3.99	-.73	.000
Medication incident discussions aim to learn from errors and communicate the findings widely	76	3.08	3.92	-.84	.000
The pharmacy manager/owner seriously considers staff suggestions for improving patient safety	79	4.11	4.37	-.25	.000
All staff have education and training in safety	73	2.93	3.52	-.59	.000

* Given the wording of the questions, a negative difference indicates an improvement in performance.

Benefits and challenges of COMPASS use

An open-ended question was used to identify the most significant benefits of COMPASS use. Pharmacists identified a wide range of benefits. Example verbatim comments include:

- *"Even though we had a formal med incident written reporting system, COMPASS has made us more accountable in reporting + made us look more closely at our "near misses" to prevent more serious incidents"*
- *"Better ability to report problems & then have an open forum to discuss and evaluate. It has us learning from each mistake + moving forward positively to prevent it from repeating"*
- *"Sharing incidents with all staff, and discussing ways to minimize them. COMPASS is a formal consistent way that all pharmacies can standardize incident reporting + discussion for greater safety and learning"*
- *"The staff is taking it upon themselves to prevent errors and not relying on the 'checking' pharmacist to catch it. More questions are asked instead of pushing it through because near misses are known instead of just the errors that reach the patient"*
- *"Real commitment to change, rather than half-heartedly discussing the issue and then forgetting about it"*
- *"Increased communication surrounding med errors and near misses. Awareness of situations that may contribute to an error and proactiveness in preventing errors"*
- *"The 'process' of conducting the MSSA was the most valuable tool in the COMPASS project. It allowed us to lend thought to the store layout etc. to try and develop better flow / less risk of incidents"*

PHARMACY VOICES

Benefits of COMPASS

Increased communication surrounding errors and near misses.

Awareness of situations that may contribute to an error and proactiveness in preventing errors.

Better ability to report problems & then have an open forum to discuss and evaluate.

It has us learning from each mistake + moving forward positively to prevent it from repeating.

- *"Making safety a higher priority than it was previously. Taking blame away from individuals and highlighting the types of errors we make most commonly instead"*

- *"Some days we cannot find enough relief staff. I feel safer than before because of the constant use of proactive checks. Nothing goes out before all checks are done"*

- "*The biggest benefit [is that] it opens a conversation & discussion on errors & provides a learning opportunity. It makes people aware that mistakes do happen, & it is valuable to discuss them, rather than tucking it away*"

- *"We have reduced the number of errors that leave the pharmacy with our new system"*

Analyzing the open-ended data using content analysis, a number of key benefits are being realized through COMPASS use. These key benefits include an increase awareness of safety issues, improved discussion of near misses, reduction in the blame and fear of discussing medication incidents, and perceived reduction in number of incidents that are occurring in the pharmacy.

Despite these benefits, there are a number of real challenges that pharmacists are facing with COMPASS use. Example verbatim comments from pharmacists include:

- *"There is a ridiculous amount of near misses (which we try to document), but can NOT keep up with all of them throughout a regular day. The biggest challenge is to input the near miss"*

- *"Not every "near miss" is being reported because of frequency of incidents + realizing how many near misses are happening. Also I find it challenging to find time to have regular scheduled meetings to discuss incidents + revisit our MSSA"*

PHARMACY VOICES

CHALLENGES

There is a ridiculous amount of near misses (which we try to document), but can NOT keep up with all of them.

Staff feel it takes too much time and interferes with work flow especially when busy.

Our biggest challenge is one of our pharmacists doesn't agree with using COMPASS. This creates some awkward situations.

What to report…It got too redundant.

- *"It became too tedious to document every little error. I understand documenting what we consider significant errors + appreciate the simplicity of the system. However, it became too hard to report everything. I do believe our # of errors has decreased, but there will always be small errors"*

- *"Time and a good method to record, especially near misses (never recorded). Staff feel it takes too much time and interferes with work flow especially when busy. Arranging a staff meeting is also very difficult as it usually creates overtime"*

- *"What to report… We started reporting every label that required reprinting for whatever reason (missed refills, wrong doctor, brand change) and it got too redundant. We will now focus on true ERRORS… and any "incidents" that we have detected such as allergies, drug interaction, wrong info on RX from doctor (strength, directions), etc."*

- *"Time – sometimes we get behind in documenting incidents when we are busy – we try and do a few each day when we have a few minutes (in reality, that's all it takes)"*

- *"We are a busy pharmacy, but the dispensary staff recognized this as an important project. I have concerns regarding keeping the high level of vigilance we have had in the previous year as staff has not highlighted as many errors as per usual in the last few months. Are we that much better, or have we lost a bit of that focus?"*

Analyzing the open-ended data using content analysis, a number of challenges are limiting the use of COMPASS in community pharmacies. These key challenges include finding time to report incidents as they occur, finding time to meet to discuss incidents, determining what should be reported and what should not, not realizing any value from the program after reporting a medication incident, maintaining momentum and interest in COMPASS, and the lack of support from one or a few individuals, thereby limiting COMPASS use by others.

PHARMACY VOICES

CHALLENGES

Finding time to report incidents as they occur and meet to discuss incidents.

Determining what should be reported and what should not.

Not realizing any value from the program after reporting a medication incident.

Maintaining momentum and interest in COMPASS.

Lack of support from one or a few individuals, thereby limiting COMPASS use by others.

Summary of Findings

Community pharmacy practice in Canada is currently undergoing significant changes. Expanded pharmacist services, coupled with the regulation of pharmacy technicians, means major changes are occurring to the key processes within community pharmacies. It is critical that formal quality improvement programs be developed to support such efforts and to establish and maintain public trust in the ability of community pharmacies to deliver these new services.

COMPASS is a turn-key quality improvement program that allows pharmacies with no, or a limited, quality improvement program to implement one very quickly. COMPASS is built upon the best and state-of-the-art quality improvement practices occurring in both community pharmacy and other high-reliability industrial sectors.

The research literature supports the benefits of a quality improvement program (e.g., same tools, processes, and requirements across multiple pharmacy types, sizes, and locations) such as COMPASS. For example, key benefits experienced with the adoption of the SafetyNET-Rx quality improvement program included[4]:

- Transition from a shame culture of medication incident reporting to an open and supportive culture;
- Increase understanding of the circumstances where incidents are most likely to occur, as well as shortcomings in the existing dispensing process;
- Increased awareness/confidence of individual actions. Staff are more mindful of their individual actions and confident that the dispensing process is safe;
- Perceived reduction in the number of common or similar incidents that are occurring in the pharmacy; and
- The quality improvement program is followed on a day-to-day basis and accepted as a normal part of the dispensing/work process.

Results from both the quantitative and qualitative data in this study indicate that many similar improvements are being experienced with COMPASS use. The most significant improvements have been an increase in the openness of discussing medication incidents and the development of a supportive (versus blame) culture of reporting. For example, the quantitative and qualitative data

[4] Boyle T. A., Bishop A., Duggan K., et al. (2014) "Keeping the “continuous” in continuous quality improvement: Exploring perceived outcomes of CQI program use in community pharmacy" Research in Social & Administrative Pharmacy, 10(1), pp. 45-57.

highlight that the most significant improvements during COMPASS use were culture based and included: more openness in talking about medication incidents; staff routinely discussing ways to prevent medication incidents from happening again; and staff adopting the view that incident discussions are learning, and not blame and shame, opportunities. In addition to cultural changes, improvements have occurred that are more process focused, such as a better understanding of where medication incidents are most likely to occur and the feeling of enhanced safety.

One important benefit of pharmacy quality improvement programs identified in the research literature is that these programs become accepted as a normal part of one's work day.[5] However, results of this study suggest that this benefit has not yet been fully realized with the COMPASS program. While pharmacists have been discussing medication incidents informally during COMPASS use, the more formal tools, such as CPhIR and MSSA, are not fully used.

The research literature highlights that for programs such as COMPASS, using the technology tools (e.g., CPhIR, MSSA), and finding the time to formally report and discuss medication incidents, are the two biggest factors limiting full program use[5]. Encouraging pharmacy staff to use the formal tools and techniques of COMPASS is the most immediate challenge facing this initiative.

Given the benefits realized by COMPASS pharmacies so far (e.g. improved safety focus, decreased blame culture, increased organizational learning from incidents), the survey results provide strong support for the continued use of COMPASS. However, to enhance program use, a number of changes to COMPASS should be considered by the Saskatchewan College of Pharmacy Professionals.

RECOMMENDATIONS

Rollout the COMPASS quality improvement program to all community pharmacies in Saskatchewan.

Develop a strategy to better engage community pharmacy staff in the formal tools and techniques of COMPASS.

Explore and widely communicate batched or hybrid forms of medication incident reporting.

[5] Boyle T. A., MacKinnon, N., Mahaffey T., Duggan K., Dow, N. (2012) "Challenges of standardized continuous quality improvement programs in community pharmacies: The case of SafetyNET-Rx", Research in Social & Administrative Pharmacy, 8(6), pp.499-508.

Key changes include:

- Work with community pharmacy staff, ISMP Canada, and other stakeholders to develop a strategy to better engage community pharmacy staff in the formal tools and techniques of COMPASS;

- Explore (and, if selected, widely communicate) batched or hybrid forms of medication incident reporting that enable pharmacies to better level the additional workload caused by reporting medication incidents;

- Explore developing guidelines for what constitutes the bar for a reportable near miss;

- Work with ISMP Canada to develop new ways that the CPhIR data generated by COMPASS participants can be used to better enable proactive learning (e.g., learning from incidents occurring in pharmacies elsewhere in Saskatchewan);

- Develop an online COMPASS training program that could be used by newly hired staff pharmacists and pharmacy managers.

Conclusion

This report reviews the use of the COMPASS quality improvement program by community pharmacists, the key challenges faced with such use, and the benefits being realized. The study's findings support the continued use of COMPASS in Saskatchewan. To enhance COMPASS use, a number of changes should be considered, such as possible guidelines for near miss reporting and an examination of how the data generated through COMPASS can better support proactive learning from medication incidents.