Head office commitment to quality-related event reporting in community pharmacy

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ABSTRACT

Background: This research explores how perceptions of head office commitment to quality-related event (QRE) reporting differ between pharmacy staff type and between pharmacies with high and low QRE reporting and learning performance. QREs include known, alleged or suspected medication errors that reach the patient as well as medication errors that are intercepted prior to dispensing.

Methods: A survey questionnaire was mailed in the spring of 2010 to 427 pharmacy managers, pharmacists and pharmacy technicians in Nova Scotia. Non-parametric statistics were used to determine differences based on pharmacy staff type and pharmacy performance. Content analysis was used to analyze the responses to open-ended survey questions.

Conclusion: Demonstrated commitment to QRE reporting, ongoing encouragement and targeted messages to staff could be important steps for head office to increase QRE reporting and learning in community pharmacies. *Can Pharm J* 2012;145:e1-e6.

Results: A total of 210 surveys were returned, for a response rate of 49.2%. However, the current study used only the subgroup of pharmacy staff who self-reported working at a chain pharmacy, for a total of 124 usable questionnaires. The results showed that community pharmacies viewed head office commitment to QRE reporting as an area to improve. In general, high-performing pharmacies ranked head office commitment higher than low-performing pharmacies.

Discussion: One possible reason why high-performing pharmacies ranked the variables higher may be that increased levels of head office support for QRE processes have led these pharmacies to adopt and commit to QRE processes and thus increase their performance.

Introduction

Community pharmacy is a key area in which to implement patient safety and quality improvement practices, due to the significant volume of prescriptions dispensed in the community. While considerable research exists that looked at medication safety within hospitals, there is a growing body of knowledge regarding safety issues in the community setting. Incidence rates in Britain, Denmark and the United States suggest that between 23 and 26 medication errors and near misses occur for every 10,000 prescriptions dispensed.¹⁻³ In Britain, the

primary cause of medication incidents was determined to be misreading the prescription.¹ These findings were echoed in Denmark, with the majority of errors occurring in the transcription phase, including the wrong strength, wrong medicine and wrong dosage.²

By gaining knowledge of the types of errors and incidents that occur in the Canadian community pharmacy setting, opportunities for learning are increased. For the purposes of this paper, quality-related events (QREs) are defined as “known, alleged or suspected medication errors that reach

This research was conducted as part of the SafetyNET-Rx research program. The mission of SafetyNET-Rx is to encourage and support an open dialogue on medication errors and near misses in community pharmacies. Through reporting and learning, community pharmacies are empowered to improve key processes and prevent the reoccurrence of errors. *Cette recherche a été menée dans le cadre du programme de recherche de SafetyNET-Rx. La mission de SafetyNET-Rx est d'encourager et de soutenir un dialogue ouvert sur les erreurs de médicaments et les accidents évités de justesse dans les pharmacies communautaires. Grâce aux déclarations et à l'apprentissage, les pharmacies communautaires sont habilitées à améliorer des processus clés et à prévenir que des erreurs se reproduisent.*

KEY POINTS

- Quality-related events (QREs) in the community pharmacy setting can have serious health consequences. Improving QRE reporting and learning requires visible commitment from head office.
- Differences in assessments were found between high- and low-performing pharmacies in terms of QRE reporting and learning, with high-performing pharmacies rating head office visible support higher. Subsequently, those pharmacies that are performing better in QRE reporting and learning are receiving higher levels of support from head office.
- The results of this research provide a better understanding of pharmacy perceptions regarding head office commitment to QRE reporting. Management commitment is one component necessary for ensuring the success of QRE reporting systems. Knowledge obtained from this study can be applied to help ensure the future success of QRE reporting implementation.

the patient [e.g., incorrect drug, quantity, dose or patient], as well as medication errors that are intercepted prior to dispensing [i.e., near misses].”⁴ For example, QREs can include instances when a correctly written prescription is filled incorrectly by the pharmacy, but also when a pharmacy identifies an incorrectly written prescription and intervenes. In essence, QREs capture not only patient safety issues, but are also intrinsically tied to quality assurance and quality improvement efforts.

Improving QRE reporting is an important step in better understanding and learning from patient safety and quality issues in community pharmacies. Frequently cited barriers to better QRE reporting include lengthy and time-intensive processes, not enough time to complete reporting tools during the workday, uncertainty regarding which incidents to report, a lack of anonymity, a lack of support from the organization and coworkers, insufficient follow-up on reported incidents and the belief that a formal reporting process is not required.⁵⁻⁸ Many of these barriers speak to a lack of knowledge regarding QRE reporting and inadequate commitment by organizational leaders to ensure that staff are supported in their efforts to report. Management and governance have been shown to affect pharmacist attitudes toward participating in reporting and learning strategies, with such things as blame culture and reactive management hindering involvement.¹

As a precursor to addressing such issues, it is critical that head office management demonstrate a visible commitment to improved QRE reporting and learning in the pharmacy. Head office management refers to the regional and national

management of franchise and chain pharmacies. It is proposed that head office commitment will differ among high-performing and low-performing pharmacies, as determined by their ability to report and learn from QREs. The purpose of this research was to ascertain the degree of head office visible support for QRE reporting and learning in community pharmacies. We evaluated how assessments of support differed based on staff type (i.e., pharmacy managers, pharmacists, technicians) and level of pharmacy performance (i.e., high vs low) in terms of QRE reporting and learning.

Methods

We mailed the Survey of Quality-Related Events (QREs) Reporting and Learning in Community Pharmacies to 427 pharmacy staff, including pharmacy owners/managers, pharmacists and technicians in Nova Scotia, Canada, in the spring of 2010. The survey measured staff perceptions relating to QRE reporting, including demographics, pharmacy culture, characteristics of existing reporting practices and management commitment to quality improvement. We captured responses with a 7-point Likert-type scale ranging from strongly disagree (1) to strongly agree (7). We also included open-ended questions to elicit greater detail on issues related to QRE reporting and learning. The Research Ethics Board of St. Francis Xavier University, Nova Scotia, provided ethics approval for the study.

For the purposes of this paper, we examined only questions regarding head office support. Specifically, the survey asked 8 questions to assess head office commitment to QRE reporting and learning, representing approximately 10% of the survey content. In addition to these questions, open-ended questions allowed staff to comment on the strengths and weaknesses of their head offices with respect to QRE reporting and learning.

Pharmacies were classified into either high- or low-performing groups based on 2 specific characteristics: QRE reporting and QRE learning. QRE reporting signifies how well each pharmacy believes it performs in terms of reporting QREs. QRE learning refers to how well each pharmacy perceives it performs in terms of learning from QREs. Both variables were captured on a scale ranging from 0 to 100 (100 indicating the highest possible performance level). Pharmacies were placed in either the low- or high-performing group based on their reported scores.

The nonparametric Kruskal-Wallis test was used to identify and assess differences (between the 8 head office questions) based on staff type

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(i.e., staff pharmacist, technician, pharmacy manager). The Mann-Whitney U test was used to assess differences based on pharmacy performance (i.e., high vs low).

Nonparametric analysis is appropriate as all data violated the assumption of normality, as confirmed by examining a normal probability plot. As the group sizes of pharmacy staff type and pharmacy performance were unequal, this assumption violation could have greatly impacted the findings if parametric statistics were applied. As a result, our discussion of differences is focused on medians and ranks and not the means of the raw data. All nonparametric tests were performed using SPSS version 15.

To explore the qualitative data, content analysis was performed. Content analysis is defined as “any technique for making inferences by objectively and systematically identifying specified characteristics of messages.”⁹ Content analysis is a commonly used research method for “developing an objective and systematic description of the manifest content of qualitative and archival data.”¹⁰ Given the different terminology that respondents used when describing commitment to QRE reporting, we selected the meaning-oriented method of content analysis comprised of identifying key themes (versus counting words). Two researchers independently reviewed the data to identify themes or categories that emerged from the open-ended questions. The 2 team members then met and presented their initial categories. After iterative analysis and discussion, they reached a consensus on a list of main themes and subthemes. SPSS Text Analysis for Surveys version 2.0 was used for analysis of the open-ended questions.

Results

Of the 427 surveys distributed, 210 were returned, for an initial response rate of 49.2%. For this research, however, we performed a subgroup analysis comprised of pharmacy managers, staff pharmacists and pharmacy technicians who self-reported being employed in pharmacies that were part of a chain. This constraint reduced the subgroup analysis to 124 surveys.

Of the 124 usable surveys, pharmacy managers completed 20 (16.1%), staff pharmacists completed 46 (37.1%) and pharmacy technicians completed the remaining 58 (46.8%). There were 59 (51.8%) pharmacies classified as low-performing pharmacies, while 55 (48.2%) were classified as high-performing pharmacies.

To explore how perceptions of head office's commitment to QRE processes varied according to

POINTS CLÉS

- Les incidents liés à la qualité (ILQ) dans les pharmacies communautaires peuvent avoir des conséquences graves pour la santé. Pour améliorer la déclaration de tels incidents et en tirer les leçons qui s'imposent, il faut un réel engagement de la part du siège social.
- Les résultats d'évaluations ont indiqué des disparités entre les pharmacies à haut rendement et celles à faible rendement au chapitre de la déclaration et de l'apprentissage d'ILQ, car les premières évaluant plus élevé le soutien réel de la maison-mère. Subséquemment, les pharmacies qui obtiennent le meilleur rendement à ce chapitre ont davantage de soutien du siège social.
- Les résultats de cette recherche permettent de mieux comprendre la perception des pharmacies à l'égard de l'engagement du siège social envers la déclaration des ILQ. L'engagement de la direction est un élément nécessaire à l'efficacité des systèmes de déclaration des ILQ. Les connaissances découlant de cette étude peuvent contribuer à l'efficacité de prochains systèmes de déclaration d'ILQ.

staff type, the nonparametric Kruskal-Wallis test was used. Results of the Kruskal-Wallis test suggest that perceptions did not differ among pharmacy managers, pharmacists and pharmacy technicians for any variables concerning head office support for QRE processes. Since no differences existed based on staff type, this allowed us to group all responses together when analyzing the perceptions of head office support for QRE processes based on high- and low-performing pharmacies in terms of QRE reporting and QRE learning.

Subsequently, an overall performance score for each pharmacy was determined by taking the average of its QRE reporting performance and QRE learning performance. Those pharmacies that reported a score in the bottom half when compared to all other pharmacies (i.e., 75 and below) were placed in the low-performing group, while those pharmacies that reported a score in the top half (i.e., 76 and above) were placed in the high-performing group. Spearman's correlation was run between the QRE reporting variable and QRE learning variable to determine if they were actually measuring 2 different things. The analysis showed that QRE reporting and QRE learning were only slightly correlated (Spearman correlation = 0.414, $p \leq 0.000$), indicating that they were viewed as distinct variables by respondents.

Finally, the nonparametric Mann-Whitney U test was used to determine how perceptions of head office support for QRE processes varied based on pharmacy performance. This analysis resulted in differences being found for 6 out of 8 variables (Table 1), with high-performing pharmacies rat-

ing each of these 6 variables higher than low-performing pharmacies.

We performed content analysis on the open-ended data. The main theme that emerged, as cited by 26 (54.2%) respondents, concerned a lack of knowledge regarding QREs and the reporting processes involved. With regard to head office's role and visible involvement in QRE reporting, there seemed to be an overall lack of knowledge:

"They need to make it more apparent that they have a QRE reporting process."

— *Manager, 6 months*

"I really have no knowledge of them having any systems in place for QRE reporting." —

Pharmacist, 8 years

"[I'm] not sure what they have available to support us with respect to handling QREs."

— *Pharmacist, 2 years*

"I wasn't aware that head office was involved."

— *Pharmacist, 6 years*

"I have no contact with head office."

— *Pharmacy technician, 9 years*

Furthermore, a need to improve head office feedback regarding QRE reports was cited several times in the qualitative analysis. Examples of verbatim comments from respondents include the following:

"[Head office] encourages filling out incident reports. Not sure if there is follow-up. I do not hear about it."

— *Pharmacist, 6 years*

"We have a very good system that collects info about QREs, but rarely do we get feedback."

— *Pharmacist, 7 years*

"[Head office] supports anonymous reporting, but we get little feedback on errors that have occurred and how to learn from them."

— *Pharmacist, 3 years*

Overall, the content analysis revealed that community pharmacy staff believed that there were limited head office QRE reporting processes in place or they were uncertain if such policies even existed (54.2%). Staff also felt that head office did not sufficiently focus on feedback and learning (25%) or QRE reporting (8.3%) and that head offices were generally uninvolved.

Discussion

The results of this study showed that community pharmacies viewed head office commitment to QRE reporting as an area to improve. In general, high-performing pharmacies ranked the variables higher than low-performing pharmacies, with 6 variables being significantly different: 1) genuine interest in improved reporting, 2) sufficient support mechanisms, 3) sufficient follow-up, 4) regular discussions regarding QRE reporting, 5) interest in staff satisfaction with reporting and 6) supporting learning to improve processes.

High-performing pharmacies strongly believed that head office has a genuine interest in improving QRE reporting. This differed from responses given by low-performing pharmacies, that neither strongly agreed nor disagreed with this statement. Another area where high-performing pharmacies believed head office was doing well was in supporting learning from past QREs in order to improve the dispensing process. Low-performing

TABLE 1 Perceptions of head office support based on QRE reporting

QRE reporting and learning	Low-performing pharmacies		High-performing pharmacies		Significance	
	No.	Median ‡	No.	Median ‡	Mann-Whitney U	p-value
Head office...						
Has a genuine interest in improved QRE reporting*	52	4.00	54	6.00	765.50	0.000
Has sufficient support mechanisms to assist with QRE reporting and learning (e.g., training programs, funds)*	47	4.00	50	5.00	642.00	0.000
Grants sufficient authority to the pharmacy to change core work/dispensing processes	54	4.00	46	4.00	1208.00	0.810
Provides sufficient follow-up when an error is reported*	45	4.00	47	4.00	572.50	0.000
Has regular discussions with the pharmacy regarding QRE reporting*	55	3.00	49	4.00	633.00	0.000
Is interested in having staff satisfied with the QRE reporting process†	52	4.00	47	5.00	854.50	0.008
Supports anonymous reporting of QREs	47	4.00	47	4.00	988.50	0.368
Supports learning from past QREs to improve dispensing processes*	52	4.00	49	6.00	770.50	0.000

* $p \leq 0.001$; † $p \leq 0.01$; ‡ Based on a 7-point (i.e., 1–7) scale.

pharmacies ranked this action significantly lower than high-performing pharmacies. Management interest in and support for the QRE process has been shown to be a critical success factor in QRE process implementation in the past and is an area that low-performing pharmacies can look to improve upon in the future. Improvement in these key areas is likely to lead to an improvement in overall QRE performance in community pharmacies.

One possible reason why high-performing pharmacies ranked the variables higher may be that increased levels of head office support for QRE processes have led these pharmacies to adopt and commit to QRE processes and thus increase their performance. Management support is a critical success factor in QRE process implementation and results from this study provide further evidence of this. However, even though high-performing pharmacies rated head office support for QRE processes higher than low-performing pharmacies, the general perceived level of head office support was low. These findings were also reflected in the qualitative analysis. The results demonstrate that head office support for the QRE process does have an effect on pharmacy performance; however, more work is needed to bring head office support up to the levels expected by community pharmacies.

Overall, there is a need for more research regarding head office support of QRE reporting in the community setting. Studies conducted in the hospital setting found that management support can and does play a role in the success of QRE reporting processes. In a study of near-miss reporting in nursing homes, Wagner et al.¹¹ found that successful implementation of a near-miss reporting system required a supportive leadership approach. The authors further highlighted several factors that are used by staff as indicators of management support, including 1) focusing on the process and not the person, 2) training nurses to see the benefits of reporting, 3) creating incentive programs to promote reporting and 4) maintaining a positive attitude toward reporting among all levels of management.

The problem with insufficient feedback for those who report QREs is the risk of futility — as one pharmacist surveyed stated, “nothing is done about the incident so why bother reporting it?” This notion is further supported by Kanse and colleagues,¹² who found that organizational factors have the greatest impact on the effectiveness of reported QREs and cited management priorities as one of these organ-

izational factors. Kanse et al. also stated that one reason that QRE recovery opportunities were missed was because management did not see it as a high enough priority. One issue that has been reported is the one-way flow of information from community pharmacies to head office. Feedback is being relayed to head office and is likely being used to assess the overall risks of the organization; however, pharmacies are receiving no feedback in return. This is an area that head offices may need to focus on resolving in the future.

The current study has several limitations. The first limitation is the relatively small sample size drawn from a single province in Canada. As a result, the data may not be generalizable to all community pharmacy settings, franchises or chains. The small sample size may also impact the significance of the statistical analysis. Second, our findings are based on the perceptions of pharmacy managers, staff pharmacists and technicians. Because of this, results cannot be compared between in-store pharmacy staff and head office management to identify possible discrepancies. Further research in this area could include the perceptions of in-store and head office pharmacy management personnel. The inclusion of head office personnel would build upon the current exploratory research and represents an intriguing direction for future study.

QRE reporting highlights a critical step in improving patient safety and quality in community pharmacies. This study sought to better understand pharmacy perceptions of head office commitment to QRE reporting as one component for ensuring the success of QRE reporting systems. Overall, the results suggest that pharmacies do not feel that head office is sufficiently committed to the process. Commitment to QRE reporting, ongoing encouragement and targeted messages to staff are important steps in further increasing QRE reporting. Future research into the root causes responsible for the gap between staff expectations and management performance, including the effects of organizational culture, may more fully reveal how to improve all 3 elements of a successful QRE reporting process. ■

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References

1. Ashcroft DM, Quinlan P, Blenkinsopp A. Prospective study of incidence, nature and causes of dispensing errors in community pharmacies. *Pharmacoepidemiol Drug Saf* 2005;14:327-32.
2. Knudsen P, Herborg H, Mortensen AR, et al. Preventing medication errors in community pharmacy: frequency and seriousness of medication errors. *Qual Saf Health Care* 2007;16:291-6.
3. Witte D, Dundes L. Prescription for error: process defects in a community retail pharmacy. *J Patient Saf* 2007;3:190-4.
4. Nova Scotia College of Pharmacists. Standards of practice for quality assurance programs in community pharmacies. Halifax (NS): Nova Scotia College of Pharmacists; 2010. Available: <http://141.109.38.4/resources/Standards%20of%20Practice%20for%20Continuous%20Quality%20Assurance%20in%20Community%20Pharmacies.pdf> (accessed April 11, 2012).
5. Evans SM, Berry JG, Smith BJ, et al. Attitudes and barriers to incident reporting: a collaborative hospital study. *Qual Saf Health Care* 2006;15:39-43.
6. Osborne J, Biais K, Hayes, J. Nurses' perceptions: when is it a medication error? *J Nurs Adm* 1999;29:33-8.
7. Wakefield DS, Wakefield BJ, Uden-Holman T, Blegen MA. Perceived barriers in reporting medication and administration errors. *Best Pract Benchmarking Healthc* 1996;1:191-7.
8. McArde D, Burns N, Ireland A. Attitudes and beliefs of doctors towards medication error reporting. *Int J Health Care Qual Assur* 2003;16:326-333.
9. Holsti OR. *Content analysis for the social sciences and humanities*. Reading (MA): Addison Wesley; 1969.
10. Ibeh KIN, Ibrahim E, Panayides PM. International market success among smaller agri-food companies: some case study evidence. *Int J Entrepreneurial Behav Res* 2006;12:85-104.
11. Wagner LM, Capezuti E, Ouslander JG. Reporting near-miss events in nursing homes. *Nurs Outlook* 2006;54:85-93.
12. Kanse L, Van Der Schaaf TW, Vrijland ND, Van Mierlo H. Error recovery in a hospital pharmacy. *Ergonomics* 2006;49:503-16.