Medical Safety and Community Practice: Necessary Elements and Barriers to Implement a Safety Learning System

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Abstract

A safety learning system (SLS) is a system that monitors patient safety incident information and analyzes it to develop and implement improvement strategies to increase patient safety. The purpose of this paper is to discuss the necessary elements of a community-based family medicine practice SLS in Alberta Health Services – Calgary zone, and barriers to, and facilitators of, the implementation of this system. An SLS was developed in the research program Medical Safety in Community Practice.

To determine the elements necessary to implement an SLS in community-based family medicine practice, we performed a comprehensive literature review, internal investigator discussions and internal investigator and external stakeholder reviews of key design elements. The system is currently being implemented and tested in community-based family practices as part of the program.

Steps identified for implementation: included determining key design elements including creating a website and ascertaining a classification system or taxonomy; developing recruitment strategies; establishing an incident analysis methodology; building a knowledge translation strategy; and pursuing sustainability. These elements produced an SLS that is easily incorporated into community-based family medicine clinics.

A safety learning system (SLS) is a system that monitors patient safety incidents and analyzes them to develop and implement improvement strategies for increasing patient safety. In the past, SLSs have been primarily directed toward the acute care setting. However, the majority of health system interactions occur in the community.

There are a number of reporting systems for medical incidents around the world (World Alliance for Patient Safety 2005). Most of these systems have been developed for acute care, with elements added later for community-based care; this creates some interesting challenges due to differences in these settings. There are many distinctions between community-based practice and acute care that necessitate particular approaches to patient safety, such as the structure of employer-employee relationships, organizational structure, accreditation requirements, complexity of care and language.

In reporting systems such as the Australian Advanced Incident Management (AIM) system, a system that was developed for acute care, the majority of reports on errors are submitted by nursing staff (P. Dutt, personal communication, May 2006). In community-based practices in Canada, non-physician staff are typically directly employed by the physicians of the clinic as opposed to being employed by the hospital. Thus, staff in the community are more directly associated with the person or people who hire and fire them. This creates a different hierarchy and power differential than is encountered in the acute care

setting. Staff in community practice may be more hesitant than staff in acute care to report incidents. In the Medical Safety in Community Practice program, we have found that most reports are submitted by physicians (Sterling et al. 2008). We also found that in some clinics, staff had not thought to question how the clinic was run or to examine how they could be involved in improving the safety and flow of the clinic (O'Beirne et al. 2009).

In acute care, there is an overlying organizational structure in which policies and procedures are developed. In community care, the individual physician or clinic normally sets policies and procedures. In the community, engagement of the physicians is critical. If a physician within the clinic is not engaged, entry into the clinic is unlikely.

In Canada, there are no requirements that physicians participate in patient safety or quality assurance activities within their community-based practices, and individual practices are not accredited. This is in contrast to acute care – hospitals undergo stringent accreditation procedures, and patient safety is one of the elements required for hospital accreditation.

Compared with acute care, a family practice typically sees patients of lower acuity over extended time frames. Family physicians and their staff develop long-term relationships with patients. These factors influence the type and frequency of hazards and incidents that are reported (Dovey 2002; Dovey et al. 2002), and the language used to describe incidents is different. Since most of the systems that have been developed for acute care use language that is focused on areas that are found in acute care, for example, pertaining to equipment failures or intravenous drugs, it may be difficult for a physician who practices solely in the community to relate to these reporting systems.

The purpose of this paper is to describe the necessary elements of an SLS within community-based family physician clinics, and barriers to and facilitators of its implementation.

Methods

To determine the necessary elements to implement an SLS in community-based family medicine practice, we performed a comprehensive literature review (O'Beirne et al. in press), internal investigator discussions and internal investigator and external stakeholder reviews of key elements. Internal investigators included researchers, decision-makers, policy experts and physicians. Individual and group discussions were held to delineate the elements necessary to implement an SLS. External stakeholders included physicians, nurses, office staff, communication specialists, quality improvement professionals, member of the public and administrators. Either individually or in a group, internal investigators and external stakeholders reviewed the elements. The elements also underwent continuous improvement through evaluation by program participants.

To determine barriers and facilitators to implementation, the SLS was launched in 13 community-based practices.

Results

A list of system implementation elements was determined by combining points from the literature review (Brockway 2006) and internal investigator discussions. The elements included determining key design factors, including ascertaining a classification system or taxonomy; developing and implementing recruitment strategies; establishing an incident analysis methodology; building a knowledge translation strategy; and pursuing sustainability.

> **In Canada, there** are no requirements that physicians participate in patient safety or quality assurance activities within their community-based practices.

Determining Key Design Factors

The literature review (Brockway 2006) uncovered multiple design factors that were applied in the implementation of our SLS. The following list first describes the key design factors found in the literature (in boldface) and barriers and facilitators (where they exist), and then details whether there is a difference between these factors in acute care and family practice (if one exists):

1. **Information from all clinical and non-clinical personnel in clinics elicited.** We have found that most of the reports in community care are submitted by physicians (Sterling et al. 2008), whereas in acute care, reports are submitted by nursing.
2. **A well-defined, inclusive definition provided of what constitutes an incident.** The definition of an *incident* is the same in acute care and family practice. The World Health Organization (WHO) defines a patient safety incident as "an event or circumstance which could have resulted, or did result, in unnecessary harm to a patient" (World Alliance for Patient Safety 2007b), and its definition has been adapted by replacing the word *circumstance* with *process* for use in our SLS. Also, the word *unnecessary* was omitted to encourage reporting.
3. **Timely and routine feedback provided to the clinics.** Most family practices do not have regular safety meetings; hence, we had to create meetings to close the loop. Meetings were held every six to eight weeks with each clinic to discuss outcomes, share improvement strategies from other clinics and choose new topics. Clinics were able to act quickly to plan and implement improvements as they are autonomous units.

4. **Immunity from legal action established.** Privilege allows for candid discussion within a quality assurance committee without fear of legal repercussions. In acute care, legislation creates privilege for quality assurance activities. Obtaining privilege for community practice was very difficult as there is no governing body for primary care with a quality improvement umbrella in Alberta. We obtained privilege through the Health Quality Council of Alberta.

5. **Voluntary reporting.**

6. **Removal of all identifying information about the participants in the incident**. In small community clinics, even when all identifying information is removed, the identity of the reporter can still be determined. To decrease the vulnerability of staff, all reported incidents were shared with all participating clinics.

7. **Confidential reporting.**

8. **Reports reviewed by Program Panel.** Within acute care, there are often panels whose function is to review and analyze adverse events. In community practice, this infrastructure is absent and, in fact, not possible depending on the size of the clinic. A Program Panel housed within the research program was formed to provide review and analysis of incidents.

9. **Primary purpose is to improve healthcare and educate.** The culture in community practice is still often one of shame and blame. Through participation in the program this gradually changed within the clinics.

10. **Multiple means for reporting 24/7.** Even though reports can be submitted either online or by fax, we have found that most reports are submitted by fax, even in those clinics that are fully computerized. We were unable to offer telephone submission due to the prohibitive cost of this service.

11. **Secure reporting.** To enable secure reporting at a reasonable price, a secure server service had to be obtained for online reporting and to maintain the database. In addition, it was necessary to have a fax machine in a locked room for faxed reports.

12. **Database of errors and associated solutions.** The website allows for the posting of an "incident of the month" and tested solutions to reduce the likelihood of this type of incident occurring.

13. **Multi-factorial approach to coding errors.** A classification specific to community care has not been developed; hence, the International Classification of Patient Safety developed by WHO (World Alliance for Patient Safety 2007a) is being used. With a few exceptions, we have found that most of the incidents from primary care can be classified using this system.

14. **Reporting form uses check boxes and narrative with an emphasis on narrative.** The current form is shown in Figure 1.

Developing and Implementing Recruitment Strategies

In acute care, participating in a safety or quality improvement program is mandated by the organization. In Canada, there is no requirement for community-based practices to participate in a safety or quality improvement program. It is difficult to engage community clinics in safety initiatives since many view quality improvement activities as time consuming, not understanding the benefits to both efficiency as well as patient safety that these activities can afford. Thus, a recruiting strategy to participate in an SLS is required for community-based practice. We initially focused on presenting to physician leaders at physician business meetings and to managers at primary care network meetings. We were hoping that these leaders would help engage other physicians. This did not happen.

We next presented sessions on patient safety to physicians at continuing medical education (CME) sessions. This strategy was marginally more successful (two participating clinics after nine presentations).

We then introduced enhanced incentives including remuneration for non-physician staff time ($25 per hour), $20 compensation per report, Mainpro-C (maintenance of proficiency) credits for physicians, promotional materials (pens and pads with our logo and contact information), disclosure training and lunch at the recruiting meeting. Two other changes were to focus our presentation on the experiences of the clinic to which we were presenting instead of on what had been found in previous research, and to ensure that the recruitment presentation was delivered by a physician. These changes netted seven participating clinics from eight presentations.

We also found that it is not necessary to engage an entire clinic. In each of two larger clinics, we have recruited a physician and supporting staff. These groups undergo improvement strategies and disseminate the successful strategies throughout the larger clinic.

Establishing an Incident Analysis Methodology

In acute care, incident analysis is usually undertaken only for severe adverse incidents. In community practice, severe adverse incidents are rare. What is being reported most often are close calls. The SLS for family practice focuses on developing improvement strategies for priority incidents, not necessarily severe ones; hence, a different approach for analyzing incidents is needed. Acute care often uses root-cause analysis (Wilf-Miron et al. 2003) or Health System Safety Analysis (Davies 2000; Sanz 1991). In family practice, the Model for Improvement (Langley et al. 1996) was chosen and, together with the Institute of Cultural Affairs' Technology of Participation group facilitation methods (Institute of Cultural Affairs in the U.S.A. 2008), it constitutes our incident analysis/improvement methodology. This process is easily learned and applied to the types of incidents occurring in community practice. Through the use of

Figure 1. Medical Safety in Community Practice reporting form

Source: Medical Safety in Community Practice. Incident Reporting Form. 2008. University of Calgary.

require outside help in disseminating their successes and failures. Our dissemination strategies have focused on the research team sharing improvement strategies between participating clinics, our website (http://mscp.ca), CME events and conference presentations and workshops. Each of these strategies has been successful in sharing our learnings. Attending individual clinics is labour intensive but has the potential to change the culture within each clinic. Presenting to a larger group at CME and conference events disseminates learning more quickly but is not as effective in ensuring that the participants understand the methodology, can apply it within their setting and can engage the rest of their clinic in the activities.

Pursuing Sustainability

Many acute care organizations in Canada are required to have an SLS for accreditation; thus, sustainability is not an issue in these settings. In community practice, participating in an SLS or quality assurance/quality improvement activities is not a requirement for practice. Therefore, to engage clinics and find a home for the SLS, clinics and stakeholders must be shown the utility of these activities. The following organizations were identified possible homes for the governance of the SLS: Alberta Health Services – Calgary (Quality, Safety and Health Information), the Health Quality Council of Alberta, the College of Physicians and Surgeons of Alberta, the Institute for Safe Medication Practice, the Alberta Medical Association, the Alberta College of Family Physicians and the Canadian Medical Protective Association. At this point, none have been approached to take over the program.

these processes, clinics are able to analyze incidents in order to develop, implement and evaluate improvement strategies.

Building a Knowledge Translation Strategy

Community practices are geographically dispersed and have little infrastructure and inadequate resources for transferring knowledge from one clinic to another. These practices thus

Discussion

When determining the key design factors, one could ask, why should so much time be spent developing a community-based SLS when there are internationally a number of systems that are functioning well in the acute care sector? Why not just adapt these systems for community-based care? A few systems have attempted to do this, including National Health Services in the United Kingdom (Scobie et al. 2005), the Veteran's Administration in the United States (Connell 2002) and AIM in Australia. In the United Kingdom, one half of a percent of reports come from general practice (Scobie et al. 2005). In Australia, those reporting to AIM are mostly nurses and anesthetists (P. Dutt, personal communication, May 2006). This raises two issues to be considered in designing an SLS: first, the structure of the employee-employer relationship and, second, the perceived "ownership" of the system. Nurses submit most reports in acute care, whereas physicians report more often in the community, according to our findings. Some staff in community practice may be hesitant to report incidents since they are usually not unionized, are more likely to work with the same people every day and are employed by the physician.

Reporting systems and SLSs may also be more successful if the participants in the system feel that the system addresses their needs.

When developing and implementing recruiting strategies, two issues were encountered: gaining access to the clinics and providing incentive to participate. Woodward found that at the clinic level, it is vital that leadership be committed to a safety culture (Woodward 2005). In participating clinics, we found that the family physicians needed to buy in to the program to ensure recruitment. Having a physician make the initial call, be present at the recruitment meeting and be part of the facilitation team for each subsequent meeting improved physician engagement. Physicians in community clinics are usually the business owners and can greatly influence policy, culture and activities conducted within the clinic. In acute care, the hospital administration decides on and sets policy and influences culture.

Incentives to participate in patient safety activities are needed since there are no requirements in Canada for community-based clinics to partake in safety activities or have a policy on patient safety. Our initial incentives of paying staff and offering Mainpro-C credits were inadequate. Since each clinic may have

had a slightly different attitude to an SLS and its applicability to the clinic, changing the recruitment presentation to focus on clinic's experiences with patient safety may have helped the clinic's members to understand the applicability of an SLS in their clinic. Competition for physician time from other projects made it evident that physicians needed to be compensated for their time; therefore, $20 was offered for each completed report. After showing the applicability of an SLS to individual clinics and offering compensation for time to report, recruitment improved dramatically.

The incident analysis methodology was chosen to translate reported safety incidents into meaningful change that did not unduly disrupt the flow of the clinic. The method also had to be easy to learn and use and work well for the lower severity and near miss (Dovey et al. 2002; Rubin et al. 2003) incidents that occur most often in community-based practice. The Model for Improvement was chosen because it is flexible enough to adapt to community-based incidents and simple enough to learn quickly; it encourages small tests of change so that clinic function is not disrupted.

Efforts to ensure sustainability of our SLS are still in the early stages. One strategy may be through voluntary accreditation of community practices that incorporates a safety component.

Conclusions

The elements necessary to implement an SLS have produced a system that is easy to use in community-based family medicine clinics within Alberta Health Services – Calgary zone. Areas requiring further work are improving the recruitment strategies and pursuing the sustainability of an SLS in the community. HQ

Acknowledgements

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