Adverse Event Disclosure Education in Canadian Medical Curricula

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Abstract

Purpose: To describe the current state of education for Canadian medical students and residents on disclosure of adverse events (AE) to patients.

Method: The authors developed a cross-sectional online survey and e-mailed it to Canadian Associate Deans of Undergraduate and Postgraduate Medical Education (UGME and PGME) in 2011. The participants reported on inclusion of explicit curricula on disclosure and associated characteristics of the curricula.

Results: The survey had a UGME and PGME response rate of 47% (8/17) and 29% (5/17) respectively. Half of UGME and 100% of PGME participants reported having an explicit curriculum on disclosure, while most reported the educational approach being distributed across different educational modalities. The most commonly reported methods of teaching were lecture, small group discussion, case studies, physicians’ personal stories, and role-playing. Most participants reported that teaching on AE disclosure also occurs via the ‘informal’ curriculum.

Conclusions: Half of UGME and all of PGME participants report that disclosure is explicitly addressed in their institution’s curricula, suggesting that the patient safety educational climate is changing. Medical educators are beginning to recognize the importance of national disclosure guidelines by integrating them into curricula. Medical students and residents are taught about disclosure through a variety of educational methods.

Practice Points

1. The educational climate around patient safety is likely changing: half of UGME and all of PGME participants report that disclosure is addressed in curricula.
2. Lecture, small group discussion and case studies are commonly reported methods used to teach medical trainees about AE disclosure.
3. Some UGME and PGME training programs are using national disclosure guidelines to teach medical trainees.
Keywords: Curriculum

Article

Introduction

An adverse event (AE) is an unintended injury or complication related to the care and/or health services provided to a patient. The Canadian Adverse Events Study (Baker et al. 2004) found that approximately 185,000 hospital visits annually are associated with an AE. Regardless of the cause, the duty to disclose AEs to patients is well grounded in ethical principles, and is recognized by professional bodies. Research to date suggests that patients desire prompt, candid disclosure following an AE, and recommends disclosure training as a component of physician education (Hobgood et al. 2002). However, recent studies indicate that patient safety content is not well represented in medical curricula. The 2006 Clerkship Directors in Internal Medicine Survey (Alper et al. 2009) revealed that only 25% of participants representing Canadian and U.S. medical schools had explicit patient safety curricula. Interestingly, 29% of clerkship directors did not know whether their school had patient safety curricula.

The critical role of education about disclosure at the postgraduate level is apparent, as residents may be involved in disclosing AEs. However, is there a rationale for prioritizing disclosure training for medical students? A recent cross-sectional survey of medical students and residents reveals that 79% of medical students reported involvement with AEs by fourth year of medical school, while 98% of residents reported personal experience with AEs (White et al, 2008). However, only a minority of students, interns, and residents had ever received formal teaching on disclosure. If the majority of medical students and residents are involved in AEs during their training, medical curricula and learners would benefit by prioritizing information required by patients and the specific support needed by trainees (White et al. 2011).

Presently, the methods used to deliver disclosure education to medical students and residents in Canada are largely unknown. By describing the Canadian course of progress in disclosure education, we will gain an understanding of what efforts are underway. The purpose of this study was to describe the current state of education for Canadian medical students and residents on disclosure of AEs to patients by means of an online survey administered to Associate Deans of Undergraduate Medical Education (UGME) and Postgraduate Medical Education (PGME).

Method

Design and Setting

The study design was an online, national cross-sectional survey following the Tailored Design Method, a scientific approach rigorously focusing on reducing error (e.g. non-response error) and maximizing survey response (Dillman, Smyth & Christian 2009). The Dalhousie University Health Sciences Human Research Ethics Board approved the study.

Participant Selection

We invited Associate Deans of UGME and PGME at each of Canada’s 17 medical schools to participate in the study, for a total of 34 invitations. We collected participant e-mail addresses from the Faculty of Medicine websites for each medical school. Participants were asked to forward the survey invitation to a Faculty of Medicine member more familiar with AE disclosure education (e.g. curriculum coordinator) if they were unable to answer the survey questions. We sent two automatic reminder e-mails to participants using the survey software.

Survey Instrument

We defined ‘adverse event’ as an event resulting in unintended harm to a patient, related to the care and/or services provided to the patient rather than to his or her underlying condition. The first survey question
asked for the Canadian region in which the participant’s medical school was located. As several provinces only have one medical school, using broad regional categories (e.g. Western Canada) allowed for greater participant confidentiality. One of the authors (ER) reviewed the literature and national disclosure guidelines and developed 19 questions on education on AE disclosure (multiple-choice, forced-choice, matrix, and free-text). A third-party translator created a French version of the survey. The survey was pilot tested with six members of Dalhousie University Faculty of Medicine and/or Capital District Health Authority involved in medical education and/or patient safety.

Survey re-administration
At the time of administration, the survey software registered a high number of ‘out-of-office’ or ‘vacation’ messages mainly from postgraduate participants. In an effort to ensure a representative sample from Canadian medical schools, we re-sent the survey in February 2012.

Descriptive findings
The primary descriptive finding was the presence of an explicit curriculum on disclosure of AEs to patients. ‘Explicit curriculum’ is understood as educational material formally described in written goals and objectives. The majority of survey questions elicited quantitative information about the characteristics of education on AE disclosure. Limited qualitative information (e.g. additional information regarding the curriculum) was elicited via free-text boxes.

Data Analysis
We analyzed the results in de-identified, confidential format. Medical schools/institutions were used as the unit of analysis. Unanswered items were not included in the analysis. Descriptive statistics were performed using a standard statistical software program (STATA, version 9, College Station, Texas).

Results
Eight of 17 UGME Associate Deans and 5 of 17 PGME Associate Deans completed the survey, for response rates of 47% and 29% respectively. The overall survey response rate was 38%. Figure 1 summarizes institutional affiliation (by Canadian region) as reported by survey participants. One invited participant was unable to complete the survey, but provided curriculum details and teaching material via e-mail correspondence. This information was not included in the analysis.

Table 1 summarizes responses regarding inclusion or non-inclusion of an explicit curriculum on disclosure of AEs to patients. Half of UGME participants and 100% of PGME participants reported having an explicit curriculum on disclosure of AEs. Eighty-eight percent of UGME participants and 60% of PGME participants reported that their educational approach involved distributing material across more than one topic or
educational modality. The remaining UGME and PGME participants (12% and 40% respectively) reported having a standalone module, lecture, or workshop on the topic.

Table 1.

<table>
<thead>
<tr>
<th>Presence of curriculum on disclosure of AEs to patients</th>
<th>No. (%)</th>
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<td>4 (50)</td>
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<tr>
<td>No</td>
<td>4 (50)</td>
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<tr>
<td>PGME</td>
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<tr>
<td>Yes</td>
<td>5 (100)</td>
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<td>No</td>
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Eighty percent of PGME participants reported that an AE disclosure curriculum had been implemented for a period of one to five (1-5) years, compared to 50% of UGME participants reporting implementation over the same length of time. Half of UGME participants reported 1 to 2 hours of total curriculum time devoted to AE disclosure, while the remaining half reported 3 or more hours of time. In contrast, 60% of PGME participants reported 2 to 3 hours of total curriculum time devoted to AE disclosure.

Educational methods and timing within program

The most commonly reported educational methods used to teach AE disclosure at the UGME and PGME levels are summarized in Table 2. Participants were asked to indicate when and how these methods are delivered. At the UGME level, use of lecture was reported across all four years of training, appearing most often in 2nd year. Small group discussion was nearly equally distributed across all four years, while role-playing and case studies were reported only in years 1 and 2. Less commonly reported methods included clinical teaching (1 participant) and training DVD/video (1).

At the PGME level, the most common educational methods (see Table 2) were reported to take place during PGY-1, although most participants were unsure of when they occur. Less common methods included clinical teaching (2), training DVD/video (2), standardized patient (2), online learning module (2), and reflective exercise (2).

Table 2.

<table>
<thead>
<tr>
<th>Educational method</th>
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<th>No. using at any time (PGME)</th>
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<tbody>
<tr>
<td>Lecture</td>
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<td>5</td>
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<tr>
<td>Small group discussion</td>
<td>4</td>
<td>4</td>
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<tr>
<td>Case studies</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Physicians’ personal stories</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Role-playing</td>
<td>2</td>
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National disclosure guidelines

At both the UGME and PGME levels, most participants reported that the majority of the national disclosure guidelines are included in their curriculum (17 of 21 guidelines were included in the curricula of at least 75% of UGME participants, while 19 of 21 guidelines were included in the curricula of at least 80% of PGME participants). Guidelines with the lowest levels of inclusion at the UGME level were “Patient given the option of having a support person(s) present”, “Occurs at a time and location of the patient’s preference”, “A brief overview of the investigative process that will follow” and “An offer of practical and emotional support”. At the PGME level, the guidelines of “A brief overview of the investigative process that will follow” and “Providing adequate time for questions” had the lowest levels of inclusion. At least 50% of
UGME and 80% of PGME participants reported that all barriers to disclosing an AE (e.g. fear of losing patient’s trust, possibility of litigation) were addressed in the curricula.

**Seeking support after involvement in an AE**

50% of UGME participants and 100% of PGME participants reported that their curriculum recommends that trainees seek support following involvement in an AE. Additionally, 100% of PGME participants reported that specific recommendations are made regarding where residents may seek support.

**The informal curriculum**

All UGME and PGME participants were asked whether trainees learned about AE disclosure through the informal curriculum, defined as “an unscripted and highly interpersonal form of teaching and learning taking place among and between faculty and students” (Hafferty 1998). Seventy five percent of UGME participants and all PGME participants reported that this type of teaching occurs at their institution. As reported by one UGME participant, “students would observe this being done (both well and likely not well) during clinical observerships and rotations” and would have “an opportunity to debrief with a clinical mentor about issues that they observe.”

**Discussion**

**Approach to education and presence of explicit curriculum**

This online, national cross-sectional survey of Associate Deans of Undergraduate and Postgraduate Medical Education found that 50% of UGME participants and 100% of PGME participants reported having an explicit curriculum on disclosure of AEs to patients. This suggests greater institutional recognition of the importance of this topic in comparison to the 2006 findings that only 25% of US and Canadian medical schools had a patient safety curriculum (Alper et al. 2009), under which disclosure is typically taught as a subtopic. Half of UGME and 80% of PGME participants reported having implemented an explicit curriculum on disclosure for one to five years. Developments such as the establishment of the Institute of Healthcare Improvement, which offers online training courses on patient safety (Institute for Healthcare Improvement 2013), are transforming the climate in which medical education is delivered. This may partially account for recent implementation of curricula on disclosure.

This study reports multiple pedagogical approaches, as most participants reported an educational approach distributed across more than one topic and/or educational modality. A 2009 Canadian Medical Protective Association (CMPA) consultation meeting revealed that most Canadian medical schools reported using a ‘scatter’ approach to teaching patient safety, suggesting that the topic is either not explicitly addressed in an integrated fashion, or that a variety of learning styles or teaching methodologies are used (Canadian Medical Protective Association 2009). Possibly, the ‘scatter’ approach is the method by which medical schools and residency programs first begin to integrate this topic into the overarching curriculum. It has been suggested that recognition and disclosure of medical error comprise a core, distinctly defined competency in medicine (Christmas & Ziegelstein 2009). Such recommendations may explain why 12% of UGME and 40% of PGME participants reported having a standalone lecture, module or workshop on disclosure of AEs to patients.

**Popular educational methods and timing**

The three most commonly reported methods of addressing AEs among UGME and PGME participants were lecture, small group discussion, and case studies. Common use of lecture and small group discussion has been reported elsewhere in teaching patient safety (Alper et al. 2009), as well as lectures specific to disclosure (Gunderson et al. 2009; Keller, Bell & Dottl 2009) and facilitated discussion (Bell, Moorman & Delbanco 2010; Gunderson et al. 2009). Less commonly reported methods in this study included role-playing at the UGME level, which was employed in a recent pilot study (Bell, Moorman & Delbanco 2010). Training DVDs have been used to teach disclosure in pilot studies (Bell, Moorman & Delbanco 2010; Gunderson et al. 2009) but were reported less commonly at the UGME and PGME levels in this study. Interestingly, three PGME participants reported that physicians’ personal stories are used to teach residents about disclosure. Such stories can be poignant and may have considerable educational potential in connecting
personal experience with the concept of patient-centred care. Future research should address educational outcome measures for the most widely used educational methods to teach this topic.

At the UGME level, lecture and small group discussion were implemented across all four years, while role-playing and case studies were reported only in the preclinical years (1 and 2). At the PGME level, commonly reported methods were most often indicated as taking place in PGY-1, although several participants were unsure of exact timing. The UGME results suggest an effort in ensuring disclosure is addressed longitudinally, which is preferable, as it should be a core goal across medical education to ensure trainees are skilled at disclosure (White et al. 2011) and that explicit instruction in patient safety occurs across the undergraduate curriculum (Alper et al. 2009).

Inclusion of national disclosure guidelines

Professional bodies such as the CMPA have published disclosure guidelines targeting health care professionals (Canadian Medical Protective Association 2008). However, current training efforts may not yet be consistent with these guidelines (White et al. 2011). As recently as 2006, it was found that medical students are rarely taught about national patient safety goals (Alper et al. 2009). Our data show that among the participants reporting an explicit curriculum on AE disclosure, the majority includes most of the national disclosure guidelines. This finding suggests an increased level of institutional awareness of guidelines and recognition of their importance in medical education. All PGME participants indicated that residents are provided with specific recommendations about where to seek support following an AE, which may reflect the increased level of responsibility in disclosure discussions at the postgraduate level. At the UGME level, the guideline of “An offer of practical and emotional support” showed a less concrete level of agreement regarding inclusion. It is clear that patients desire support following an AE (Hobgood et al. 2002) so medical schools and residency programs should consider this carefully when developing patient-centred learning objectives relating to disclosure.

Half of UGME and 80% of PGME participants with explicit curricula reported that all barriers to disclosure listed in the survey are addressed. These barriers are pertinent considerations and can vary from fear of losing a patient’s trust to fear of litigation. However, if an AE is disclosed with honesty, this may lead to increased trust on behalf of the patient (Bismark 2009).

Informal curriculum

Teaching about disclosure of AEs to patients commonly occurs through the ‘informal curriculum’. Indeed, 75% of UGME and 100% of PGME participants reported that this teaching method occurs (to the best of their knowledge). As noted elsewhere, the ‘hidden’ curriculum of medicine has the potential to influence trainees with respect to AEs (Bell, Moorman & Delbanco 2010). Allowing trainees to witness disclosure conversations is a good learning opportunity (Bradley & Brasel 2007) and may help them to recognize disclosure as a component of respectful patient care (Kaldjian et al. 2007). However, as one participant indicated, trainees may be observing ineffective disclosure discussions as well as effective ones. One study on physicians’ attitudes and practices has found that 19% of physician participants reported not disclosing a minor error (Kaldjian et al. 2007). Although role-modeling is no doubt a valuable opportunity for trainees, it is important for medical educators to include components of effective disclosure interactions in the explicit curriculum, in order to mitigate variation in the quality of physician role-modeling.

The study has several limitations. There is potentially non-response bias due to a high number of participants being away on vacation during the summer survey administration. The demographic data show that Atlantic and Western Canada are under-represented at the UGME level, while Quebec and Western Canada are under-represented at the PGME level. There may have been a lack of clarity among participants over what constitutes an explicit curriculum, as one participant reported their medical school did not have one, yet described a standalone lecture approach. Additionally, undergraduate medical education is uniform within any given medical school, while postgraduate medical education comprises many different residency programs varying in educational objectives and modalities. Despite this, all PGME participants reported having an explicit curriculum used to teach all residents, which may at the very least suggest that this area of patient safety is gaining momentum in Canadian postgraduate medical education.
In summary, our study suggests that education on AE disclosure has become more of a priority for medical educators. Our findings show that disclosure is explicitly addressed in the curricula of half of UGME and all PGME participants, suggesting that the patient safety educational climate is changing. The commonly reported educational modalities in this study align well with those found in the literature. Medical educators are beginning to recognize the importance of national disclosure guidelines by integrating them into curricula. Medical students and residents are taught about disclosure through a variety of educational methods including lecture, discussion, and case studies, as well as informal teaching. Future work should be done to investigate outcome measures for the most commonly used educational modalities.

Notes on Contributors: Elyse Ross is a 4th year medical student at Dalhousie Medical School in Halifax, Nova Scotia. Dr. Ackroyd-Stolarz is an Assistant Professor in the Department of Emergency Medicine at Dalhousie University, Halifax, Nova Scotia.

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Declaration of Interest: Elyse Ross held a Dalhousie University Faculty of Medicine Patrick Madore Memorial Studentship. The authors have no other declarations of interest to report.

Ethical approval: Dalhousie University Health Sciences Research Ethics Board granted ethical approval of this study.
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Table 1. Presence of Explicit Curriculum at the Undergraduate Medical Education and Postgraduate Medical Education Level as Reported by Participants in the 2011 Canadian Online Survey on Adverse Event Disclosure Education*

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*Four UGME participants indicated their institution did not have an explicit curriculum and were advanced to the next relevant question

Table 2. Common Educational Methods Used at the Undergraduate Medical Education and Postgraduate Medical Education Level as Reported by Participants in the 2011 Canadian Online Survey on Adverse Event Disclosure Education

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Figure 1. Region of Institutional Affiliation as Reported by Undergraduate Medical Education and Postgraduate Medical Education Participants in the 2011 Canadian Online Survey on Adverse Event Disclosure Education