Published in final edited form as:

Med Sci Educ. 2015 December 1; 25(4): 467–472. doi:10.1007/s40670-015-0169-8.

Integrating a Patient Safety Conference into Graduate Medical Education

James D. Katz¹ and Ann Biehl²

James D. Katz: james.katz@nih.gov

¹National Institutes of Arthritis and Musculoskeletal and Skin Diseases, National Institutes of Health, 6N-216F, Building 10, 9000 Rockville Pike, Bethesda, MD 20892, USA

²Clinical Center Pharmacy Department, National Institutes of Health, Bethesda, MD, USA

Abstract

Objectives—The Institute of Medicine has established aims for improvement in patient care that emphasize safe, timely, effective, efficient, equitable, and patient-centered medicine. This goal is echoed by the Accreditation Council for Graduate Medical Education (ACGME).

Methods—The National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) graduate medical education program implemented a Clinical Learning Environment Review (CLER) project whose aim is to support a patient and trainee safety environment. An ongoing biannual patient and learner safety conference is able to capture close calls, safety attitudes, potential learner mistreatment, and trainee fatigue in a nonpunitive manner that supports answering the question, “What was learned and what needs to be improved?”

Results—Group recommendations were captured at a quality improvement conference. We documented a shift in attitudes away from one where the institution is perceived to be weakest at supporting safety reporting.

Conclusions—This project is designed to serve as a mechanism for insuring care that is respectful and responsive to patient needs and values. It identifies keys to avoiding wasted resources or harmful delay while also seeking to improve care based upon scientific knowledge.

Keywords

Safety; Medical education

Introduction

The Institute of Medicine (IOM) has published Aims for Improvement in patient care. Trainees must assess whether or not care is safe, timely, effective, efficient, equitable, and patient centered [1, 2]. This goal is echoed in the Accreditation Council for Graduate Medical Education (ACGME; a nonprofit oversight organization for medical education in the USA) directive for training programs to document a learning environment that

Correspondence to: James D. Katz, james.katz@nih.gov.

Conflicts of Interest The authors declare that they have no competing interests.

encompasses a clinical culture of safety [3]. Therefore, The National Institute of Arthritis and Musculoskeletal and Skin Diseases of the National Institutes of Health (NIAMS/NIH) graduate medical education program implemented a Clinical Learning Environment Review (CLER) project whose aim is to support a patient and trainee safety environment. A key component of our project is to identify work-arounds, failures to adhere to policy, poor knowledge, and near misses (e.g., lab delay, communication impediments, treatment delay, medication error, protocol lapse) [4]. To this end, we generate data on care and education initiatives within the clinical program of NIAMS based upon the IOM (a division of the National Academies of Sciences, Engineering, and Medicine) Aims for Improvement. We rely upon chart review, clinic observations, and assessments of attitudes. This culminates in a report answering the question, “What was learned and what needs to be improved?” As such, our reports address roadblocks to quality care.

Methods

The interdisciplinary biannual conference is a 1-day mandatory event situated within the training program and convened biannually. Fellow trainees [6], the clinical pharmacy specialist, the fellowship program director, and the clinical operations manager comprise the core members attending the conference. One month in advance of the conference, trainees are assigned a cohort of charts to review based upon a personalized prescribing profile (P3) generated by query of the electronic medical record. The electronic query that is run by the Pharmacy Department identifies all instances of drug prescribing for the medication of interest within the immediate prior 6 months for each individual trainee. The fellow on record who is responsible for providing care to the identified patient reviews the chart. The reviews specifically address prespecified questions relevant to patient safety such as “safe use of nonsteroidal anti-inflammatory agents” or “safe use of anti-malarial medications.” A rubric is provided to each trainee to complete prior to the conference (a standardized form for each chart reviewed with questions such as Eye exam within the past year? or Documentation present for greater than standard dosing?). Inherent in the chart review is the need for trainees to assess (a) personal reliability/accountability (reporting findings to the healthcare team), (b) conscientiousness with regard to the timeliness of documentation (clarity of medical note composition), and (c) meticulousness in patient care (timeliness of order writing e.g., for safety labs).

In addition to the P3, an incident reporting system is in place for the ongoing reporting of near misses and close calls throughout the previous 6 months. These events are captured in an anonymous manner on a standardized reporting form. Forms are completed by involved personnel at the time of the event and submitted to the Program Director who collates and summarizes the information. These close calls emphasize non-serious potential adverse events that would not be captured under different institutional reporting mechanisms but that reflect barriers to efficient care such as shortcuts taken, delays in diagnosis or treatment, miscommunication, or work-arounds. This, along with the P3 analyses generated by each trainee, ultimately comprises the “data” presented at the conference.

Finally, all trainees are surveyed with regard to institutional attitudes of safety, personal experiences of mistreatment, and fatigue.

Content/Instruments

Contents and instruments used in the study are as follows:

1. The Close Call Reporting System consists of a mechanism by which trainees, faculty, and ancillary healthcare professionals can record and submit an incident report that in turn serves as the basis of a safety conference (Appendix 1).
2. The Safety Attitude Questionnaire (SAQ) is an anonymous survey completed by trainees concerning 12 specific healthcare provider attitudes relevant to patient safety (such as those concerning the work climate, the workload, and the handling of mistakes) [5] (Appendix 2).
3. The Learner Mistreatment Survey is another anonymous survey that invites trainees to report any instances of psychological or physical abuse including (a) public humiliation; (b) physical abuse; (c) requirement to perform personal services; (d) offensive/sexist remarks; or (e) denial of opportunities for training, education, or rewards based upon gender, race, or sexual orientation.
4. The Epworth Sleepiness Scale serves to fulfill the training program's duty to recognize and monitor the impact of sleep deprivation in the healthcare setting [6, 7].

Setting and Participants

Members of the faculty, a specialty pharmacist, rheumatology fellow trainees, members of nursing research support staff, and a practice administrator attend the conferences. The program director serves as the facilitator of the meeting. The timeline of the conference relies upon planning and implementation of 6 months' worth of antecedent data that is collected. But on the actual day of the conference, the agenda begins with allotted time for survey instrument completion followed by a brief presentation of scientific data pertinent to the drug in question. Then the bulk of the conference centers on a discussion of the results of the chart review. The minutes of the conference along with a compilation of the results of all survey data are then used to generate a summary report to the Clinical Director of NIAMS.

Curriculum Design

At the time of the conference, the following questions are addressed (as considered in retrospect):

1. What did you *discover* from your review?
2. In terms of *safety*, what, if anything, can be done to avoid harm to patients from care that is intended to help them?
3. In terms of *person-centered care*, how can the provision of care that is respectful or responsive to individuals' needs and values be improved?
4. In terms of *timely and efficient care*, what, if anything, can be done to reduce potentially harmful delay and to avoid wasted resources?

5. In terms of *effective care*, what, if anything, can be done to improve the provision of services that are based upon scientific knowledge?
6. In terms of *equitable care*, what, if anything, can be done to insure that care is provided that does not vary in quality because of a person's characteristics?
7. Based upon your analysis, do you recommend a "root cause analysis" conference or a "near misses and work-arounds" conference?

Response Process

At the time of the conference, the pharmacist presents pertinent scientific literature in order to facilitate group discussion about patient safety in the setting of the use of these pharmaceutical agents. The discussion is structured upon the curriculum design questions outlined above. Group conclusions or calls for further research are formalized in a letter to the Designated Institutional Official overseeing graduate medical education or to the Clinical Director of the Institute.

Results

Trainee Characteristics

First and second year rheumatology fellows in an ACGME-approved graduate medical education program comprise the overall demographic of trainees participating in the conferences. As is true of national trends, there are more female than male rheumatology trainees at our institution (83 % female during the time of this project).

Instruments Findings

Close call reporting captured 12 specific incidents including, most notably, those pertaining to medication-related incidents. These are enumerated in Table 1.

With regard to survey data, across-the-board agreement was documented concerning the fact that a culture of safety is present in all areas. However, it should be noted that in some cases, a neutral response was recorded for various items by at least one individual (Appendix 2).

There are no (anonymously) reported instances of (a) public humiliation; (b) physical abuse; (c) requirement to perform personal services; (d) offensive/sexist remarks; or (e) denial of opportunities for training, education, or rewards based upon gender, race, or sexual orientation.

Data from the Epworth Sleepiness Scale revealed a range of scores from 0 to 15 with a mean of 5.75. Aggregate scoring is only useful to document that the general experience of the training program does not appear to contribute to an overall increased risk to patient safety since this number is considered within the norm. However, at the level of the individual, an elevated Epworth Sleepiness score culminates in an interview with the program director to determine if the trainee is suffering from fragmented sleep, prolonged work hours, or misalignment of sleep-wake cycles. Program-specific and nonprogram-specific factors are solicited (e.g., frequent travel for family reasons). If necessary, other program faculty members are interviewed. At the same time, it is prudent to recognize that ethnic differences

are known to impact the interpretation of the Epworth Scale and hence it is not a perfect test for assessment of alertness [8]. Ultimately, if fact-finding warrants, the trainee is referred to an internist for further assessment.

The P3 analysis conference resulted in formal recommendations by the group (Table 2).

The formal recommendations produced by the conference are enumerated in Table 2. An illustrative example of the quality improvement (QI) conference in action concerns an analysis of “documentation of an eye exam within the past 12 months” in individuals on anti-malarial therapy. Approximately 20 % of patients did not get such an eye exam. Analysis of the reasons for such a lapse revealed both patient-specific and physician-specific reasons. Patient-specific reasons include compliance issues and psychiatric issues. Physician-specific reasons include lack of scientific consensus within the literature concerning this guideline (at least within the first 5 years of therapy with standard dosing).

Another illustrative example concerns an analysis of the provision of equitable care. Some patients who cannot drive are less likely to be compliant with obtaining medications and safety labs. For this reason, supporting public transportation by providing metro fare cards is one mechanism to reduce this “barrier” to care. A patient support fund is available for this purpose.

Feasibility/Acceptability

This project is designed to serve as a mechanism for insuring care that is respectful and responsive to patient needs and values. It identifies keys to avoiding wasted resources or harmful delay while also seeking to improve care based upon scientific knowledge.

Furthermore, the conference satisfies training requirements for attaining competence in patient care (PC: Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health), interpersonal and communication skills/professionalism (ICS: Fellows must be able to work effectively as a member of a healthcare team), and systems-based practice (SBP: Fellows must demonstrate an awareness of, and responsiveness to, the larger context and system of healthcare). As such, it supports the attainment of the educational milestone specifically involving the concise presentation of relevant information along with guidance for action. It further serves to demonstrate effective exchange of information and effective collaboration with other medical professionals.

Discussion

In this communication, we outline how our trainees participate in identifying systemic errors and engage in implementing potential solutions. In this manner, trainees learn to link professionalism to patient safety.

In order to implement such a patient safety culture within the academic setting, a nonthreatening environment is crucial. Incident reporting systems (sometimes termed close call reporting) are best encouraged when a nonpunitive, cooperative approach is encouraged [9, 10]. To this end, our conference asks, “How can we make it better?” rather than, “How

can we punish underperformance?” Ultimately, by way of this format, our learners demonstrate leadership in establishing behavioral expectations for an ongoing safety culture.

At the same time, patient safety is threatened when providers are stressed. Such stress may derive from institutional factors (noxious safety climate) [11], professional factors (unethical treatment) [12], or personal factors (fatigue) [13, 14]. To this end, we concurrently assess learner stress.

Some behavior towards trainees is unethical. Breaches of ethics must be actively identified and aggressively dealt with. Despite substantial increases in the number of female physicians, reports of gender-based discrimination and sexual harassment remain common, even in academia [12]. When trainees are victims of unethical behavior and when such events go unreported, the experience may have lasting adverse effects, not just in psychological health but also in professional development such as with peer-reviewed publications, career satisfaction, and perception of career advancement.

Although there existed no frankly negative ratings on the safety attitudes questionnaire, the following questions deserve closer assessment in order to assure the hospital administration that an early trend is not being detected: (a) “hospital management provides a work climate that promotes patient safety and shows that patient safety is a top priority”; (b) “hospital units cooperate and coordinate with one another to provide the best care for patients”; (c) “procedures and systems are good at preventing errors and there is a lack of patient safety problems”; (d) “staff are informed about errors that happen, given feedback about changes implemented, and discuss ways to prevent errors”; (e) “mistakes are reported whether or not they cause harm”; and (f) “staff feel that their mistakes and event reports are not held against them, and that mistakes are not kept in their personnel file.”

Finally, during the course of our project, and through an analysis of the safety attitude reporting, we noted a shift in attitudes away from one where the institution is weakest at supporting safety reporting to one where interdisciplinary-cooperative effort is not optimized for an environment of safety [15]. In this manner, future analysis of such trends may help us identify shifts in the overall institutional safety culture. However, it is important to note that this project has not been designed to answer the question as to whether or not the intervention, itself, effects any changes in safety attitudes over time.

Conclusion

We successfully implemented a patient safety conference that supports a clinical learning environment with the ultimate goal of improving patient outcomes. We have created a culture that is free of blame and open for information provided by incident reporting. The surveys, chart reviews, and incident reporting systems outlined here are the backbone of our CLER project, where good information flow supports and encourages other kinds of cooperative behavior such as problem solving, innovation, and inter-departmental bridging. In sum, our experience demonstrates that it is feasible and productive to integrate a quality infrastructure into a graduate medical education program. Our approach may be considered a

model for systematically integrating professionalism, personal responsibility, and patient safety in the academic setting.

Acknowledgments

This study was supported in part by the Intramural Research Program of the National Institute of Arthritis and Musculoskeletal and Skin Diseases, National Institutes of Health. The authors thank Dr. Adam Schiffenbauer for his critical reading and comments on this manuscript.

References

1. Quinn DC, Bingham JW, Gariss GW, Dozier EA. Residents learn to improve care using the ACGME core competencies and Institute of Medicine aims for improvement: the health care matrix. *J Grad Med Educ.* 2009; 1(1):119–26. [PubMed: 21975718]
2. Gamm L, Kash B, Bolin J. Organizational technologies for transforming care: measures and strategies for pursuit of IOM quality aims. *J Ambul Care Manage.* 2007; 30(4):291–301. [PubMed: 17873660]
3. Weiss KB, Wagner R, Nasca TJ. Development, testing, and implementation of the ACGME Clinical Learning Environment Review (CLER) Program. *J Grad Med Educ.* 2012; 4(3):396–8. [PubMed: 23997895]
4. St Pierre M. Safe patient care—safety culture and risk management in otorhinolaryngology. *GMS Curr Top Otorhinolaryngol Head Neck Surg.* 2013; 12:Doc09. [PubMed: 24403977]
5. Wagner C, Smits M, Sorra J, Huang CC. Assessing patient safety culture in hospitals across countries. *Int J Qual Health Care.* 2013; 25(3):213–21. [PubMed: 23571748]
6. Aurora RN, Caffo B, Crainiceanu C, Punjabi NM. Correlating subjective and objective sleepiness: revisiting the association using survival analysis. *Sleep.* 2011; 34(12):1707–14. [PubMed: 22131609]
7. Baron KG, Liu K, Chan C, Shahar E, Hasnain-Wynia R, Zee P. Race and ethnic variation in excessive daytime sleepiness: the multi-ethnic study of atherosclerosis. *Behav Sleep Med.* 2010; 8(4):231–45. [PubMed: 20924836]
8. Hesselbacher S, Subramanian S, Allen J, Surani S, Surani S. Body mass index, gender, and ethnic variations alter the clinical implications of the Epworth sleepiness scale in patients with suspected obstructive sleep apnea. *Open Respir Med J.* 2012; 6:20–7. [PubMed: 22670164]
9. Dennison RD. Creating an organizational culture for medication safety. *Nurs Clin North Am.* 2005; 40(1):1–23. [PubMed: 15733943]
10. Mick JM, Wood GL, Massey RL. The good catch pilot program: increasing potential error reporting. *J Nurs Adm.* 2007; 37(11):499–503. [PubMed: 17975466]
11. Sexton JB, Helmreich RL, Neilands TB, Rowan K, Vella K, Boyden J, Roberts PR, Thomas EJ. The Safety Attitudes Questionnaire: psychometric properties, benchmarking data, and emerging research. *BMC Health Serv Res.* 2006; 6:44. [PubMed: 16584553]
12. Carr PL, Ash AS, Friedman RH, Szalacha L, Barnett RC, Palepu A, Moskowitz MM. Faculty perceptions of gender discrimination and sexual harassment in academic medicine. *Ann Intern Med.* 2000; 132(11):889–96. [PubMed: 10836916]
13. Avidan AY. Sleep and fatigue countermeasures for the neurology resident and physician. *Continuum (Minneapolis Minn).* 2013 Feb; 19(1 Sleep Disorders):204–22. Sleep and fatigue countermeasures for the neurology resident and physician. [PubMed: 23385703]
14. Avidan AY, Vaughn BV, Silber MH. The current state of sleep medicine education in US neurology residency training programs: where do we go from here? *J Clin Sleep Med.* 2015; 7(4): 421–5.
15. Danielsson M, Nilsen P, Ohrn A, Rutberg H, Fock J, Carlfjord S. Patient safety subcultures among registered nurses and nurse assistants in Swedish hospital care: a qualitative study. *BMC Nurs.* 2014; 13(1):39. eCollection. [PubMed: 25435809]

Appendix 1

Close Call Reporting

Aim

The aim of close call reporting is to identify organizational vs. point of care processes that may need to be improved.

A “good catch” reporting form is an anonymous report concerning events that do not qualify for adverse event reporting to the IRB but that involve frustrations or barriers to efficient care such as shortcuts taken, delays in diagnosis or treatment, miscommunication, near misses, or work-arounds to overcome barriers to good care.

1. Date, time, location of event
2. Involved, witnessed, or heard about it
3. Your occupation (e.g., nurse, faculty, fellow, pharmacist, etc.)
4. Anonymized details of the event (no names or identifiable patient or employee data)
5. Contributing factors to the event (e.g., environment, equipment, communication issues, policy issues, workload, distraction, inattentiveness, etc.)
6. Suggestions for avoiding the close call in the future

Appendix 2

Anonymous Safety Attitudes Project

Anonymous Safety Attitudes Project (ASAP) is a measure of healthcare provider attitudes about issues relevant to patient safety.

(Tally of numbers of responses to each question over two consecutive safety conferences.)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Staff support one another, treat each other with respect and work together as a team				3	7
2. Supervisors/managers consider staff suggestions for improving patient safety, praise staff for following patient safety procedures and do not overlook patient safety problems				3	7
3. There is a learning culture in which mistakes lead to positive changes and changes are evaluated for effectiveness				3	7
4. Hospital management provides a work climate that promotes patient safety and shows that patient safety is a top priority			1	5	4
5. Procedures and systems are good at preventing errors and there is a lack of patient safety problems			1	4	5

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
6. Staff are informed about errors that happen, given feedback about changes implemented and discuss ways to prevent errors			1	4	5
7. Staff freely speak up if they see something that may negatively affect a patient and feel free to question				4	6
8. Mistakes are reported whether or not they cause harm			1	3	6
9. Hospital units cooperate and coordinate with one another to provide the best care for patients			2	4	4
10. There are enough staff to handle the workload and work hours are appropriate to provide the best care for patients				5	5
11. Important patient care information is transferred across hospital units and during shift changes				5	5
12. Staff feel that their mistakes and event reports are not held against them, and that mistakes are not kept in their personnel file			1	3	6

Table 1

Frequency of incidents captured over 6 months

Event	Occurrences
Lapse in sharps handling	1
Lapses in infection control	2
Duplicate infusion orders	1
Lack of written documentation for the need for medication	1
Clerical scheduling error causing near miss premature dosing event	1
Standard administration comment removed from medication order set during the copy-reorder process	1
Standard operating procedures not followed for the ordering and monitoring of ancillary infusion protocol medications	5

Table 2

Quality improvement conference outcomes

Analytic point	Group recommendation
Initial vs. follow-up prescribing documentation	Special attention to documentation for prescribing to younger patients.
Person-centered care	Broader implementation of phone call follow-ups and greater involvement of families.
Person-centered care	Provide drug information handouts using computer-generated templates. Using software services such as Lexicomp® to provide patient-specific information in their native language.
Timely and efficient care	Completion of patient-related notes and tasks the same day as the patient is seen.
Effective care	Systematizing reminders for safety labs and asking patients to restate what they heard at the appointment.
Equitable care	Identifying and aiding the patient in obtaining primary/specialty medical care outside of the NIH is hindered by economic and political factors since many of our patients have poor or no health insurance and some are undocumented.