Medical error in dermatology practice: Development of a classification system to drive priority setting in patient safety efforts

Alice J. Watson, MD, MPH,[a] Kelley Redbord, MD,[b,c,d] James S. Taylor, MD,[e] Alison Shippy, MPH,[f] James Kostecki, MS,[f] and Robert Swerlick, MD[g]

Boston, Massachusetts; Rockville, Maryland; Vienna, Virginia; Washington, District of Columbia; Cleveland, Ohio; and Atlanta, Georgia

Background: To date, no study to our knowledge has examined the nature and scope of medical error in dermatology practice.

Objective: We sought to collect and categorize physician-reported errors in dermatology practice.

Methods: A survey regarding most recent and most serious errors was developed and distributed to dermatologists attending US meetings. A total of 150 responses were received outlining 152 most recent errors and 130 most serious errors. Survey responses, along with classification systems for other specialties, were used to develop a classification system for medical error in dermatology.

Results: The respondents' demographics reflected the specialty: 63% were male, 60% were older than 50 years, and 60% were in solo or group private practice. Of the most recent errors reported, 85% happened once a year or less, and 86% did not result in harm to patients. The most common categories of both most recent and most serious errors were related to assessment (41% and 31%, respectively) and interventions (44% and 52%, respectively). Assessment errors were primarily related to investigations, and commonly involved the biopsy pathway. Intervention errors in the most recent and most serious errors were split between those related to medication (54% and 27%) and those related to procedures (46% and 73%). Of note, 5 and 21 wrong-site surgeries were reported in the most recent and most serious errors groups, respectively.

Limitations: Our findings are subject to respondent and recall bias and our classification system, although an important first step, is likely incomplete.

Conclusion: Our findings highlight several key areas of patient care in need of safety initiatives, namely the biopsy pathway, medication management, and prevention of wrong-site surgery. (J Am Acad Dermatol 2013;68:729-37.)

Key words: medical error; patient safety; practice improvement; quality of care; Universal Protocol; wrong-site surgery.

In 1999, The Institute of Medicine's sentinel report, "To Err Is Human," brought the issue of medical error to the forefront of both medical and public attention.[1] Since then great strides have been made with regard to inpatient care; however, the issue of medical error in ambulatory practice remains relatively understudied.[2-4]

Dermatology practice is increasingly varied and complex, encompassing advanced surgical techniques, laser and light therapy, detection of

From the Department of Dermatology, Massachusetts General Hospital and Harvard Medical School[a]; Private Practice in Rockville[b] and Vienna[c]; George Washington University, Washington[d]; Department of Dermatology, Cleveland Clinic[e]; American Academy of Dermatology, Washington[f]; and Emory Medical School, Atlanta.[g]

This was a project of the Adverse Events Work Group of the Committee on Patient Safety and Quality of Care, American Academy of Dermatology; nominal administrative costs.

Preliminary findings were presented at the 12th Annual National Patient Safety Foundation Congress, Orlando, FL, May 17-19, 2010.

Conflicts of interest: None declared.

Accepted for publication October 27, 2012.

Reprint requests: Alice J. Watson, MD, MPH, Department of Dermatology, Massachusetts General Hospital, 55 Fruit St, Boston, MA 02114. E-mail: AJWatson@partners.org.

Published online January 28, 2013.

0190-9622/$36.00

http://dx.doi.org/10.1016/j.jaad.2012.10.058

potentially life-limiting cancers, and the use of powerful systemic agents. Each of these areas of practice carries potential for error.[5] Individual errors do not always lead to harm, but can function as an early warning system to prevent more serious occurrences in the future.[6]

Other ambulatory specialties, such as otolaryngology and primary care, have attempted to classify errors within their practice.[7,8] Identifying prevalent and/or serious sources of error is an important first step to prioritizing improvement efforts and designing safer systems of care.[9]

Currently there is no central repository that contains information on medical error in dermatology practice, but we believed that physicians would be able to recall and report instances of error from their own practice, which collectively could provide valuable insights. We therefore conducted a convenience sample survey study of dermatologists, asking them to report the most recent and most serious errors that had occurred in their practice. This information was used to construct a classification system for errors in dermatology practice.

CAPSULE SUMMARY

- To date, no study to our knowledge has examined the nature and scope of medical error in dermatology practice.
- Our findings highlight several key areas of patient care in need of safety initiatives, namely the biopsy pathway, medication management, and prevention of wrong-site surgery.
- Through a combination of best practice guidelines and practice level initiatives we believe improvements can be made that will positively impact the experience of both patients and physicians.

METHODS

Survey design and administration

A 1-page, 2-sided survey instrument was developed in collaboration with a team of dermatology and survey specialists. We outlined the definition of error we wished clinicians to consider as "anything that has happened anywhere in your practice (office, hospital, operating room, emergency room, phototherapy or laser suite etc.) that was not anticipated, should not have happened, and makes you say 'I don't want this to happen again'. It can be small or large, administrative or clinical—anything you feel should be avoided in the future." Respondents were asked to describe the most recent error in their practice, along with the consequences of the error[10] and the frequency with which this kind of error has occurred in their practice. Respondents were also asked to describe the most serious error encountered in their practice. The survey also included basic demographic and practice characteristics.

Survey sample

The survey was distributed to attendees of 3 meetings in the spring of 2009. One meeting was local and the other 2 were national events. None were subspecialty events. As per the study protocol, the identity of the meetings or the attendees was not disclosed to preserve anonymity given the sensitive nature of these data. Because of convenience sampling it was not possible to generate an accurate response rate. Physicians were not offered any financial incentive to participate in this study. This research protocol was approved by the Institutional Review Board at Emory University, Atlanta, GA.

Development of classification system

All responses were entered into an electronic spreadsheet for analysis. An initial classification system was developed by a panel of expert clinicians through discussion of potential sources of error in dermatology and integration of elements of existing frameworks identified through a literature search. A care flow—based approach was used and the classification system was structured to have 3 levels of detail in defining an error: primary, secondary, and tertiary. The primary options were assessment (errors relating to history, examination, investigations, or diagnosis), intervention (errors related to procedures or medications), administrative, communication, other, not an error, and insufficient information. Secondary and tertiary classification was used to further subdivide each error.

An iterative approach was then used whereby a sample of 20 responses was independently classified, according to the original framework, by 3 physician raters (2 board-certified dermatologists and 1 dermatology resident). A group discussion followed where discordant responses were reviewed and a consensus reached. For example, inadvertent injection of saline in place of lidocaine as anesthesia before a punch biopsy was initially considered by some raters to be a medication error and by others to be a procedural error. After discussion, the raters decided this should be considered a medication error because of incorrect administration by a provider.

The framework was revised to incorporate new categories of error. This process was repeated several times until the framework was believed to be