

# Administration of Emergency Medicine

## Can Asking Emergency Physicians Whether or Not They Would Have Done Something Differently (WYHDS) be a Useful Screening Tool to Identify Emergency Department Error?

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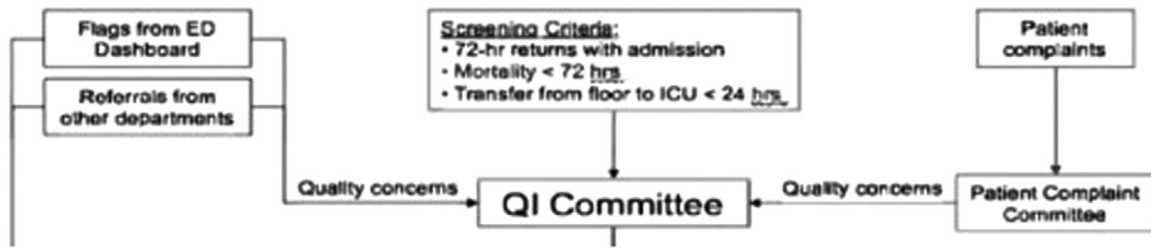
**Abstract—Background:** Error in emergency medicine remains common and difficult to identify. **Objective:** To evaluate if questioning emergency physician reviewers as to whether or not they would have done something differently (Would you have done something differently? [WYHDS]) can be a useful marker to identify error. **Methods:** Prospective data were collected on all patients presenting to an academic emergency department (ED) between 2017 and 2021. All cases who met the following criteria were identified: 1) returned to ED within 72 h and admitted; 2) transferred to intensive care unit from floor within 24 h of admission; 3) expired within 24 h of arrival; or 4) patient or provider complaint. Cases were randomly assigned to emergency physicians and reviewed using an electronic tool to assess for error and adverse events. Reviewers were then mandated to answer WYHDS in the management of the case. **Results:** During the study period, 6672 cases were reviewed. Of the 5857 cases where reviewers would not have done something differently, 5847 cases were found to have no error. The question WYHDS had a sensitivity of 97.4% in predicting error and a negative predictive value of 99.8%. **Conclusion:** There was a significantly higher rate of near misses, adverse events, and errors attributable to an adverse event in cases where the reviewer would have done something differently (WYHDS) compared with cases where they would not. Therefore, asking reviewers if they WYHDS could potentially be used as a marker to identify error and improve patient care in the ED. © 2023 Elsevier Inc. All rights reserved.

**Keywords—**medical error; adverse events; near miss; reviewers; marker; patient care

### Introduction

Medical error is a major cause of preventable morbidity and mortality, with data ranking error as the third leading cause of death in the United States. Studies estimate that greater than 200,000 patients die in the United States each year due to medical error (1). In 1991, the Harvard Medical Practice Study found that two-thirds of treatment complications were attributed to errors in care, and a significant portion were preventable (2). This pivotal study prompted intense national scrutiny of medical error and development of many quality assurance (QA) programs (3). However, despite the National Academy of Medicine's call to action 20 years ago, error in emergency medicine remains prevalent and difficult to identify.

What is an error? An error according to the Institute of Medicine report is the failure of a planned action to be completed as intended (i.e., error of execution) or the use of a wrong plan to achieve an aim (i.e., error of planning) (4). An error in management is the failure to follow accepted practice at an individual or system level; this includes acts of omission (inaction) and commission (actions) and violation of accepted practice (current level



**Figure 1. Structural schematic of how quality assurance issues are referred to different departments within the hospital.** ED = emergency department; ICU = intensive care unit; QI = quality improvement.

of expected performance for the average practitioner or system that manages the condition in question). Medical error can then be defined as deviation from an accepted course of action in a case that may or may not cause harm to the patient (5).

Despite the robust QA programs that have been developed over the past 20 years, it is still difficult to distinguish between a true medical error and a judgment call that coincides with an adverse event. The use of flagged markers such as 72-h returns with admission, floor-to-intensive-care-unit transfers, death within 24 h of admission, and multiple repeat visits are often perceived as the gold standard for identifying emergency department (ED) error, but they remain largely unvalidated expert opinion and fail to identify much of perceived ED error (6,7).

The objective of this study was to evaluate if questioning emergency physician reviewers as to whether or not they would have done something differently (Would you have done something differently? [WYHDS]) can be a useful screening tool to identify ED error.

## Methods

Between November 2016 and November 2021, we conducted a prospective observational study of consecutive patients presenting to an urban, tertiary care, academic medical center ED with an annual volume of ~ 57,000 patients. All cases who met the following criteria were systematically identified for review by an electronic medical record system: 1) returns to the ED within 72 h and admitted on second visit; 2) admitted from the ED to the floor and then transferred to the intensive care unit within 24 h; 3) expired within 24 h of ED arrival; or 4) referred for quality review by any medical provider who was involved in the case (e.g., physician, nurse, technician) or by patients themselves via submitted patient complaints (Figure 1). Cases that were identified by the above screening criteria were then referred for individual review by an emergency physician who was not involved in the patient's care. Using a structured 8-point Likert scale to assess for error and preventable or nonpreventable adverse

events, the individual reviewer would score the case on the Likert scale (Figure 2). After the case was reviewed using the structured electronic tool, the individual reviewer was then additionally mandated to report whether they would have done something differently in the management of the case (Figure 3). If the reviewer's answer was affirmative, the reviewer had to document specifics of their reasoning in narrative format.

When an individual review of a case scored a 4 or more on the Likert scale of error and adverse events, the case would then be referred to the ED QA committee for multidisciplinary review to adjudicate whether an error or adverse event was evident (5). A score of < 4 was not considered an error or adverse event but rather, given as feedback to the provider. The ED multidisciplinary QA committee is made up of physicians, residents, nurses, case managers, hospital-wide quality administration, ED leadership, and QA follow-up staff. Available information for review includes time stamps of care: assignment to case, order entry records, paging system texts and times, laboratory results, radiology reports, physician and nursing notes, and interviews with all health care professionals who were involved in the case. With that information, the ED committee conducted a consensus review using a full root-cause analysis to determine whether an error or adverse event was present. As this was a health care quality review, this study was granted exemption by the hospital's Institutional Review Board.

## Results

Of 6672 cases reviewed, reviewers chose to do something differently in 815 cases. Of these 815 cases, 374 were found to have error (95% confidence interval [CI] 0.403–0.471); 29 of these cases also had adverse events that were attributable to ED error (95% CI 0.023–0.049). Of the remaining 441 cases where reviewers would have done something differently (WHDSD), there were no errors and 5 adverse events. This leaves 5857 case reviews where reviewers would not have done something differently. Of these 5857 cases, 10 were found to have error,

#1 : Were Error(s) made by the ED team?			
Score	Description	Performance Level	QA Response
<input type="radio"/> 1	No Error	Perfect	No Reviewer feedback to team necessary, no QA committee review necessary
<input type="radio"/> 2	Judgment calls that the reviewer may not have made but can accept; with no apparent consequences	Minor Flaws	
<input type="radio"/> 3	Possible errors in care of little consequence that did not compromise care in any appreciable way		Reviewer gives feedback to team, but no QA committee review necessary
<input type="radio"/> 4	Moderate errors with resulting consequences that had the potential to compromise care, but which did not appear to compromise care	Moderate Flaws	Discussion in QA committee with appropriate feedback and +/- remediation
<input type="radio"/> 5	Moderate errors with resulting consequences that may have compromised care		
<input type="radio"/> 6	Major errors that with consequences that compromised care but where the overall care was within the standard of care	Major Flaws	
<input type="radio"/> 7	Major errors that resulted in compromised care and which violated the standard of care		
<input type="radio"/> 8	Major errors that grossly violated the standard of care	Egregious	

Figure 2. Likert scale used by reviewers to determine presence of medical error in QA cases. ED = emergency department; QA = quality assurance.

**REQUIRED - Would you have done anything differently ?**  YES  NO

(If YES, please enter what you would have done differently in the Reviewer Comments below)

**Case warrants further QA review**  
for possible changes in ED function or management even though No clear adverse event or error

Figure 3. Mandatory question of “WYHDSD” listed at the end of a QA case review. QA = quality assurance; ED = emergency department.

Table 1. Error Identification for “WYHDSD”

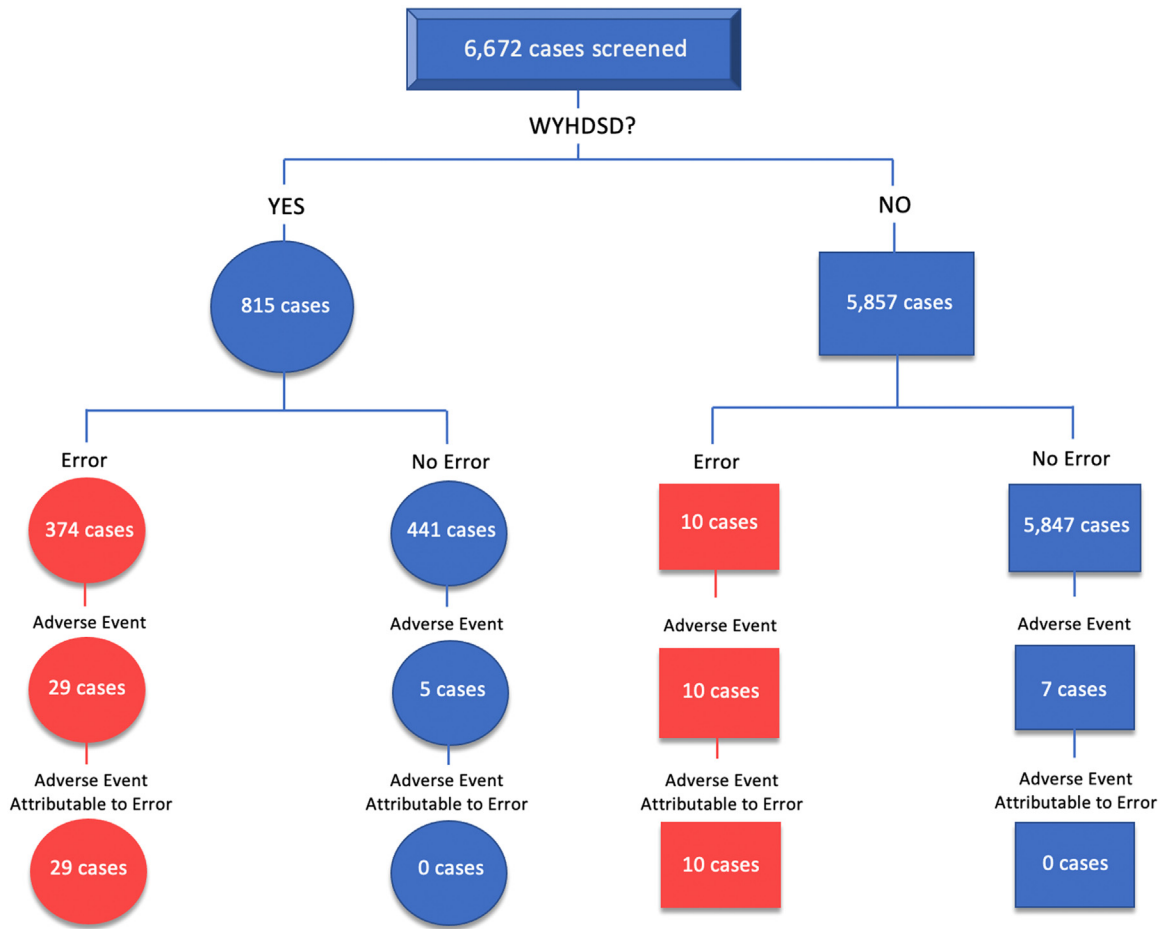
	Error	No Error	Total
Cases where reviewers would have done something differently	374	441	815
Cases where reviewers would NOT have done something differently	10	5847	5857
Total	384	6288	6672

WYHDSD = Would you have done something differently?

all of which also had adverse events attributable to ED error. The remaining 5847 cases had no errors and 7 adverse events (Table 1). Figure 4 is a flow diagram illustrating the breakdown and classification of the results. Overall, the question WYHDSD has a sensitivity of 97.4% (95% CI 95.3–98.7) and negative predictive value of 99.8% (95% CI 99.7–99.9) for identifying ED error (Table 2). Table 3 is a taxonomy of the types of medical error that were identified by asking WYHDSD.

### Discussion

This study identified a novel marker to assess for error. As noted, medical error is a major source of morbidity and mortality in the United States. This may be even more pervasive in emergency medicine, given its unique combination of challenges not seen in other medical specialties. Some examples include an undifferentiated and unfamiliar patient population, a consistently dynamic en-



**Figure 4. Structural schematic illustrating case distribution.** WYHDS = Would you have done something differently?

**Table 2. “WYHDS” as a Screening Tool for Identifying ED Error**

“WYHDS” as a Screening Tool for Identifying Error	Value	95% CI
Sensitivity	97.4%	95.3–98.7%
Specificity	92.9%	92.3–93.6%
Negative predictive value (NPV)	99.8%	99.7–99.9%

WYHDS = Would you have done something differently?; ED = emergency department; CI = confidence interval.

environment often faced with understaffing, and a lack of routine verification of medications and allergies by nurses/pharmacists. This new marker may add one more tool to the arsenal available in the search for the ideal vehicle to identify medical error. Additionally, the question of WYHDS could be used as a future single marker of error, in lieu of our current standard markers of error. This study illustrates the reliability of the question WYHDS for ruling in error with a sensitivity of 97.4%. Therefore, QA committees may be able to use the sole question of WYHDS to identify error in future cases when performing random chart review or single case evaluation. This one question could be used as the sole marker to identify

error, rather than employing the entire traditional QA process; in turn, eliminating multiple steps in the QA process and decreasing efforts significantly for QA case review. Identifying inadequacies and inefficiencies by utilizing this additional tool may help maximize resource utilization, patient safety, and patient outcomes.

Concomitantly, this marker may help with the overall QA remediation processes and solutions used to help eliminate future adverse events. We believe that these QA processes need to be nonpunitive or disciplinary in nature, for this would be counterproductive. Those subject to QA reviews often become defensive, thereby limiting productive analysis and discussions about what systems-based

**Table 3. Types of Medical Error That Were Identified By Asking “WYHDS”**

5 major themes of medical error identified	Not acquiring necessary information (e.g., not completing a relevant physical examination)	Not acting on data that were acquired (e.g., abnormal vital signs or labs)	Knowledge gaps by clinicians (e.g., not knowing how to reduce a hernia)	Communication gaps (e.g., poorly written discharge instructions)	Systems issues (e.g., improper patient registration)
Percentage of WYHDS attributable to each category of medical error	9.8%	15.5%	45%	13%	16.4%

WYHDS = Would you have done something differently?

changes could be implemented to prevent such occurrences. If review of cases is centered on answering, “what could have been done differently,” rather than identifying certain actions or inactions that were deemed to be an “error,” we believe the traditional punitive nature of quality improvement could be substantially ameliorated.

#### Limitations

Limitations of this study include the use of a single institution, which can limit the generalizability of the conclusions and introduce institution-specific bias. Additionally, although we employ multiple methods to obtain relevant cases, all cases undergo an initial individual review, and only if scored high enough on a Likert scale by the reviewer are they then brought to the QA committee for adjudication. Therefore, there is the possibility of selection bias and subsequent missed cases and error. Additionally, the cases that are screened and brought to QA for individual review are already of a very select population of high-risk cases. These cases are either personally flagged for review or identified via screening criteria, therefore already existing as high-risk cases with a stronger likelihood for potential errors. The question “WYHDS” might function differently if used for randomized cases with no predetermined risk factors for error. The study is also a retrospective review, with some reviewers unable to fulfill academic obligations of timely review of cases. This could introduce a memory bias during follow-up interviews as providers may no longer remember the details of a case accurately. Lastly, although each reviewer could introduce their own biases, there have been a stable number of reviewers over the course of the past 5 years, thus helping to ameliorate this bias.

#### Conclusion

In this study, we found a significantly higher rate of near misses, adverse events, and adverse events attributable to an error in cases where the reviewer WHDS, compared with cases where they would not. Thus, asking a simple question such as WYHDS may be a useful screening tool in lieu of, or in addition to, traditional ED markers of error.

#### Declaration of Competing Interest

None.

#### References

1. Makary MA, Daniel M. Medical error—the third leading cause of death in the US. *BMJ* 2016;353:i2139.
2. Brennan TA, Leape LL, Laird NM, et al. Incidence of adverse events and negligence in hospitalized patients. Results of the Harvard Medical Practice Study I. *N Engl J Med* 1991;324:370–6.
3. . Errors in health care: a leading cause of death and injury. In: Kohn LT, Corrigan JM, Donaldson MS, editors *To err is human: building a safer health system*. Washington, DC: The National Academies Press; 2000. p. 26–42.
4. Stelfox HT, Palmisani S, Scurlock C, Orav EJ, Bates DW. The “to err is human” report and the patient safety literature. *Qual Saf Health Care* 2006;15:174–8.
5. Gurley KL, Burstein JL, Wolfe RE, Grossman SA. Using a rule-based system to define error in the emergency department. *J Am Coll Emerg Physicians Open* 2020;1:887–97.
6. Klasco RS, Wolfe RE, Wong M, et al. Assessing the rates of error and adverse events in the ED. *Am J Emerg Med* 2015;33:1786–9.
7. Klasco RS, Wolfe RE, Lee T, et al. Can medical record reviewers reliably identify errors and adverse events in the ED? *Am J Emerg Med* 2016;34:1043–8.

### Article Summary

#### **1. Why is this topic important?**

Medical error cannot be adequately addressed and solved without first identifying it. Therefore, it is essential to find standardized markers to aid in identifying emergency department (ED) error to improve patient care.

#### **2. What does this study attempt to show?**

This study attempts to show that through asking physician reviewers the simple question of “would you have done something differently? [WYHDSD],” we are able to identify ED medical error and multiple other areas that are in need of quality improvement.

#### **3. What are the key findings?**

The key findings of this study are that the question “WYHDSD” has a sensitivity of 97% and negative predictive value of 99% for identifying ED error/adverse events and may be a useful screening tool for identifying error.

#### **4. How is patient care impacted?**

Medical error is a major cause of preventable morbidity and mortality, with it being the third leading cause of death in the United States. Therefore, any way to increase the identification of medical error will help to create a future health care system in which medical error is not a leading cause of death amongst our patients.