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Reporting Adverse Medical Events in Indiana:

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News Media and Health Provider Perceptions and Expectations

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EXECUTIVE SUMMARY

Indiana Governor Mitch Daniels issued an executive order in January 2005 directing Indiana health and medical professionals to report adverse event data to the Indiana State Department of Health (Indiana State Medical Association, 2007). The Indiana State Department of Health (ISDH) subsequently commissioned the Regenstrief Center for Healthcare Engineering at Purdue University to gather information that would inform the long term strategy for reporting the data received from Indiana health and medical providers.

The purpose of this report is to identify how Indiana news media professionals and Indiana health and medical professionals perceive adverse events and the regulation requiring health and medical professionals to report medical adverse events data to the state. To accomplish this goal, Purdue University researchers conducted an email survey targeting Indiana news media professionals and focus groups with Indiana health and medical professionals. Specifically, the goals of this project were to 1) identify barriers to the medical adverse events regulation and to identify solutions to those barriers, 2) to better understand how the data should be communicated to the public in order to improve patient safety, and 3) to identify the Indiana news media's perceptions of medical adverse events.

Focus group data were collected from health and medical professionals across Indiana. Responses revealed a range of understanding and misunderstanding of the concepts medical errors and adverse events, as well as the reporting system in general. Moreover, themes across groups included anxiety toward the public reporting of medical adverse events, the perception that the system is punitive, and an almost universal agreement regarding the potential for the system to educate health care providers and leaders about errors and near misses. The research was supplemented by an email survey to gauge the understanding of medical adverse events by

Indiana's news media. Results indicate that the news media recognize the complexity of medical adverse events, but believe the data should be made available for the public to prevent future medical adverse events. The data reveal that the ISDH will play a key role in the success of the reporting system. A host of communication strategies need to be implemented by the ISDH to maximize the positive impact of these mandatory reported data, and to ensure that health professionals do not fear reporting medical adverse events.

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I. INTRODUCTION

In January 2005, Indiana Governor Mitch Daniels issued an executive order directing Indiana health and medical professionals to report adverse event data to the Indiana State Department of Health (ISDH) (Indiana State Medical Association, 2007). As of 2006, the National Academy for State Health Policy listed 27 states that have implemented medical adverse events reporting procedures. [1] In January 2006, Indiana health and medical professionals began reporting 27 different types of serious preventable medical adverse events to the ISDH. [2] A preliminary report was released on March 6, 2007.

The reporting of adverse events is a complicated issue involving multiple stakeholders, including patients, health and medical professionals and the news media. If handled correctly, medical adverse events reporting has the potential promote open sharing of best practices and strategies for avoiding adverse events. Yet there is also potential for confusion, fear, and/or blame if reporting results are misinterpreted or misused. To maximize the positive use of Indiana's reporting system, the ISDH commissioned the Regenstrief Center for Healthcare Engineering at Purdue University in April 2006 to conduct research that would aid in understanding how Indiana health, medical, and news media professionals perceive medical adverse events and the state's mandatory reporting regulation. Specifically, the goals of this project were to 1) identify barriers to the medical adverse events regulation and to identify solutions to those barriers, 2) to better understand how the data should be communicated to the public in order to improve patient safety, and 3) to identify the Indiana news media's perceptions of medical adverse events.

II. BACKGROUND

Prevalence of Adverse Events

Medical adverse events are the eighth leading cause of death in the United States, (National Institute of Medicine, 1999). Estimates of the number of people who die in hospitals each year as the results of adverse events range from 44,000 to 98,000; this is compared to deaths from motor vehicle accidents (43,458), breast cancer (42,297), and AIDS (16,516). The frequency of adverse events is also recognized among patients with 42% of Americans reporting that they had personal knowledge of an adverse event in their own care, or in the care of a relative or friend (Start et al., 2002). Beyond fatality and injury figures, costs associated with adverse events are equally alarming. Total national costs (lost income, lost household production, disability, and health care costs) of preventable adverse events (medical adverse events resulting in injury) are estimated to be between $17 billion and $29 billion (AHRQ, 2000).

History of Adverse Event Reporting

The first published report of medical adverse events dates back to 1976, when a physician-attorney named Don Harper Mills analyzed more than 20,000 medical charts concluding that one patient in 20 was harmed by treatment (Mills, 1976). Further research describing the problem emerged in subsequent years and was largely sponsored by the Agency for Health Care Policy and Research, which is now the Agency for Healthcare Research and Quality (AHRQ, 2000). Analysis at the federal level concluded that medical adverse events were one of the four major challenges to improving health care quality in the United States, and

resulted in the development of a Quality Interagency Coordination Task Force (QuIC) to coordinate quality improvement activities in federal health care programs.[3]

Developments in medical adverse events reporting were largely ignored until the 1999 publication of *To Err is Human*, a widely-disseminated indictment of the prevalence of medical adverse events in US health care by the Institute of Medicine (IoM). While the 287-page report contained no new research (Marchey, 2003), the IoM's freedom from direct government control gave the report a fresh relevance. Since the release of the IoM report, many states have voluntarily implemented medical adverse events reporting systems. As of December 2006, 27 states have passed legislation, regulation, or executive orders related to hospital reporting of adverse events (National Academy for State Health Policy, 2006).

The Labeling Issue

Although mandatory reporting systems are in place, controversy exists regarding the labeling of medical occurrences that cause or have the potential to cause harm, injury or death to patients. For instance, The Institute of Medicine (1999) defines a "medical error" as the failure of a planned action to be completed as intended, or the use of a wrong plan to achieve an aim. The Agency for Healthcare Research and Quality (2000) similarly defines "adverse event" as an injury or death resulting from a medical intervention, something that is not due to the underlying condition of the patient (AHRQ, 2000). In addition, the Joint Commission uses the term "sentinel event" to describe any unexpected occurrence involving death or serious physical or psychological injury, or risk thereof.

The proliferation of terms has caused controversy in health care; some medical and health professionals consider the term medical error as misleading because they claim that it is vague

and sensational (Schwitzer, Mudur, Henry, Wilson, Goozner, 2005). Most people believe that "medical errors" usually involve drugs, such as a patient getting the wrong prescription or dosage, or a mishandled surgery, such as amputation of the wrong limb (IoM, 1999). In contrast, the term "adverse event" seems to be more inclusive, including any preventable patient injury or death. This more inclusive term is the focus of Indiana's new regulation. Specifically, the state mandates the reporting of *preventable adverse events* - an adverse event attributable to error (IoM, 1999). For example, if a patient dies from pneumonia obtained postoperatively, it is an adverse event (i.e., a serious injury or death resulting from medical management, not the underlying condition of the patient). If analysis reveals that the patient got pneumonia because of poor hand washing or by instrument cleaning techniques by the staff, the adverse event was *preventable* (attributable to an error of execution).

Preventable adverse events reflect two types of failure; either the correct action does not proceed as intended (an error of execution) or the original intended action is not correct (an error of planning). They can be diagnostic (e.g., misdiagnosis leading to an incorrect choice of therapy, misinterpretation of test results), equipment-related (e.g., defibrillators with dead batteries or intravenous pumps whose valves are easily dislodged or bumped), infection-related (e.g., post-surgical wound infections), transfusion-related (e.g., giving a patient the incorrect type of blood) or 5) misinterpretation of medical orders (e.g., failing to give a patient a salt-free meal, as ordered by a physician) (AHRQ, 2000).

Benefits of Reporting

Controversy aside, the Institute of Medicine (1999) reports several benefits to mandatory systems of reporting medical adverse events.

1. Mandatory reporting systems can be used to hold health care facilities accountable for safety. Implementation of such systems can protect the public by assuring that errors are reported. This, in return, encourages more investment by providers to improve patient safety.

2. Mandatory reporting systems can help identify system weaknesses. Documentation of single adverse events may highlight overall system weaknesses. Some reporting proponents have argued that state government should be aware of serious preventable adverse events that occur within health care facilities because single incidents may indicate that facility error prevention mechanisms are not working effectively. Identification of system weaknesses is what report leaders state as the first step in driving improvements toward patient safety.

3. Mandatory reporting systems can complement other oversight functions. Although states are legally responsible for hospital licensure, the influence of federal oversight activity can create an environment in which straight oversight can be been minimized. Most states have yielded considerable regulatory oversight to the Joint Commission by participating in accreditation surveys as full or partial compliance with state insurance requirements in order to minimize duplication and expenses for both states and facilities. However, the US Office of Inspector General has argued that the accreditation process will unlikely detect substandard patterns of care.

4. The public expects state governments to provide oversight of health care facilities. Mandatory reporting systems may help states address consumer expectations. According to a national survey conducted by the Kaiser Family Foundation and the Agency for Healthcare Research and Quality, almost three-quarters of those surveyed believe the government should require health care providers to report all serious medical adverse events because some states

have been embarrassed to learn about adverse incidents through the news media rather than through regulatory oversight (AHRQ, 2000).

5. Information collected through mandatory reporting systems can complement other state functions. State purchasers can use mandatory reporting system data to develop purchasing strategies which emphasize the quality of care.

6. Mandatory reporting systems create an important check and balance. Although mandatory reporting systems will not eliminate medical adverse events, they can create a critical system of checks and balances to assure that a facility's internal patient safety activities are working. Without public oversight, there is no mechanism to ensure that patient safety initiatives are effective. Some mandatory reporting advocates argue that the very existence of reporting systems provides an incentive for facilities to improve patient safety (Rosenthal & Riley, 2001).

These IoM (1999) recommendations and continued deliberations were followed up with the National Quality Forum (NQF) listing of medical adverse events that should be reported. The NQF is a non-profit membership organization created to develop and implement a national strategy for health care quality measurement and reporting (NQF, 2006). The NQF Serious Reportable Events in Healthcare (2002) was meant to establish agreement of a set of serious preventable adverse events that might form the basis for a national, state-based event reporting system. The primary reason for identifying a standardized set of serious reportable events on a mandatory basis was to facilitate public accountability. The NQF report lists 27 types of major events (see Endnote 2). Several specific events are included within several categories including surgical events (e.g., surgery performed on the wrong body part), product or device events (e.g., patient death or injury associated with the use of contaminated drugs or devices), patient protection events (e.g., infant discharged to the wrong person), care management events

(maternal death or serious disability associated with labor or delivery in a low-risk pregnancy while being cared for in a healthcare facility), environmental events (e.g., patient death or serious disability associated with an electric shock while being cared for in a healthcare facility), and criminal events (e.g., abduction of a patient of any age).

Perceptions about Reporting

Some medical leaders question the need and effectiveness of a mandatory reporting system, because they feel they have built a culture of openness where medical and health professionals do not feel hesitant about reporting medical adverse events. These leaders are concerned that the public reporting of errors will create a culture of fear, lessening the likelihood that these errors will be reported. They say just providing a list of errors creates a spotlight on the wrongdoing of professionals, rather than the prevention of future medical adverse events.

However, many other medical professionals say that the reporting system is a positive force because medical professionals can learn corrective and preventative procedures through sharing information openly among medical institutions. And patients also advocate open reporting, particularly when an event involves their care or the care of a loved one. According to Berry and Knapp (2003), patients desire comprehensive information about their options so they can participate in decisions about their health care. In one study, patients were unanimous in their desire to be told about any error that caused harm, although not all would want to know about errors that did not cause them harm (Mazor, Simon, & Gurwitz, 2004). This attitude mirrors a more general trend with patients becoming more active consumers of health information as opposed to more passive recipients of information and health care alike

A national survey by the same authors found that 89 percent of the public believed physicians should be required to tell patients when errors are made in their care. The authors reported that in a smaller study of emergency department patients, 76 percent would want to be informed immediately if something went wrong in their care, and 88 percent favored full disclosure (Mazor, Simon, & Gurwitz, 2004). In another study, 80 percent of patients indicated that they would want to discuss an error of little or no harm with another physician. Fewer than 10 percent reported that they would want financial compensation following an error without harm, but this number increased to approximately 20 percent following a moderate error and to nearly 60 percent following a severe error (Witman, Park, & Hardin, 1996).

Physicians in the United States tend to agree with patients about the importance of disclosure. In a recent survey, 77 percent of the surveyed physicians felt that physicians should be required to tell patients when errors are made in their care (Blendon, DesRoches, & Brodie, 2002). In the instance of a prescribing error resulting in death, 90 percent of physicians believed that the prescribing physician should disclose the error; fewer thought that the nurse involved (70 percent) or the hospital (71 percent) should disclose. In response to the same error resulting in an injury but with full recovery, 85 percent believed that the physician should disclose, while 75 percent thought that the nurse should disclose and 60 percent believed that the hospital should disclose.

Yet it appears that physician support for full disclosure does not necessarily represent their most common response when an error occurs. When physician trainees were queried about their most significant medical mistake made in the last year, 24 percent reported discussing the error with the patient or family; a similar rate (21 percent) was found in a later study of physicians (Mazor, Simon, & Gurwitz, 2004). And according to a study by Gallagher,

Waterman, Ebers, Fraser & Levinson (2003), physicians noted that there was no need to disclose if the harm was trivial or if the patient was unaware of the error.

Health care providers often list fear of litigation as significant reason for not disclosing medical adverse events. Yet a survey showed that of family members involved in malpractice claims alleging perinatal injury, 20 percent indicated they were seeking information, and only 24 percent indicated they sought legal action when they perceived that there had been a cover-up or the physician had failed to be completely honest, had allowed them to believe things that were not true, or had intentionally misled them. A study of malpractice plaintiffs' depositions identified physician-patient relationship issues in 71 percent of the depositions. Although it is not clear whether issues with the physicians existed before the adverse outcomes, 32 percent of the depositions referred to physician desertion or failure to be available, 26 percent referred to dysfunctional delivery of information, and 13 percent referred to failure to solicit or hear patients' requests for information, opinions, or expressions of discomfort (Beckman, Markakis, Suchman, & Frankel, 1994). Of those pursuing medical negligence claims, 91 percent of respondents reported that desire for an explanation was a reason for their pursuing legal action (Vincent, Young, & Phillips, 1994).

Health care professionals may also fear how an adverse event might be framed by news media. Media reports, like those that surfaced following the release of *To Err is Human* (IoM, 1999), tended to highlight shocking statistics and pin the blame on individuals, rather than scrutinizing loopholes in the system (Jackson, 2001). Media misjudgments lead the public to draw false or simplistic conclusions about a multifaceted problem (Dentzer, 2000).

The Institute of Medicine has also been critical of the way that media has framed medical adverse events, noting that several media outlets, including *The New York Times* and *The*

Washington Post, have reported only the upper end of death figures attributable adverse events – 98,000. Only a handful of news stories clarified that estimates were based on extrapolations from the Colorado-Utah and New York studies, at least one of which was 15 years-old (Dentzer, 2000).

The literature reviewed above suggests that the issue of medical adverse events is a delicate one. Although physicians report the necessity to disclose at a similar rate as patients, this belief is not always manifest into action. Similarly, although patients desire certain information that would be afforded by the reporting of medical adverse events, media may not provide the information in a way that is most useful to the patient or most desired by physicians or other health care leaders. The Indiana adverse events regulation takes the discussion of errors beyond the individual physician-patient relationship to a widespread audience. Most relevant to the present report, news media will play a key role in affecting how citizens understand and use this information to meet their health and medical needs.

III. RESEARCH QUESTIONS

The purpose of this report is to understand how Indiana health, medical and news media professionals perceive medical adverse events and the mandatory reporting regulation. Specifically, the project aimed to 1) identify barriers to reporting and solutions to those barriers, 2) determine how data is best communicated to the public in order to improve patient safety, and 3) understand how the news media in Indiana views adverse events.

Several research questions were addressed via focus groups with Indiana health and medical professionals. It is important to understand the perceptions of this constituent audience to determine which communication strategies would be optimal.

Research Question 1: What are Indiana medical and health professionals' perceptions of the medical error/adverse event reporting system?

Research Question 2: What do Indiana medical and health professionals believe should be done with the medical error/adverse event data?

A third question was posed to address the barriers that might limit the effectiveness of the reporting system. To the extent that barriers can be identified prior to policy implementation, more accurate information can be garnered from reporting organizations.

Research Question 3: What barriers do Indiana medical and health professionals perceive will affect the reporting of medical errors/adverse events to the state of Indiana?

Research Question 4: What are perceived solutions to those barriers by Indiana medical and health professionals?

It is important to understand media perceptions in order to learn how to best communicate the data to them. Several research questions were addressed via an email survey to all Indiana media professionals. First, given the news media's interpretation of medical adverse events will affect how they frame the issue for the public:

Research Question 5: What is Indiana news media professionals understanding of medical adverse events?

It is also important to identify the perceived causes of medical adverse events by Indiana news media professionals in order to educate them on actual causes. Some news media professionals may feel responsible to identify a concrete explanation behind the error when consumers' lives are at risk.

Research Question 6: What do Indiana news media professionals perceive as the possible causes of medical errors/adverse events?

Research has shown that system improvements can reduce the error rates and improve the quality of health care. For example, including a pharmacist on medical rounds reduced the errors related to medication ordering by 66 percent, from 10.4 per 1,000 patient days to 3.5 per 1,000 patient days (IoM, 1999). Using standardized guidelines, protocols and equipment, wireless computer technology and bar-coding have cut overall hospital medication error rates by 70 percent in one Department of Veterans Affairs hospital. Solutions do exist, and it is important to identify what the public, including the news media, perceive as the answer to alleviating the number of medical adverse events that occur.

Research Question 7: What do Indiana news media professionals perceive as the solution to medical errors /adverse events?

IV. METHODS

Researchers employed focus groups to understand medical and health providers' perceptions of the medical adverse event reporting regulation, and email surveys targeting Indiana news journalists to gauge their perceptions.

Health and Medical Provider Focus Groups

Due to the descriptive nature of this research, focus groups were employed as the initial form of data collection. The focus group method is an effective approach in understanding how people think and feel about an issue, and to identify lay beliefs that exist among Indiana health and medical providers (Krueger & Casey, 2000).

Participants and Procedures

A total of 32 adult health and/or medical providers participated in one of five focus groups, with three to 11 participants per group. Subjects were recruited through the Indiana Hospital & Health Association. Participants included nurses, quality professionals, hospital executives (e.g., chief executive officers, chief medical officers, chief operating officers), physicians, and public relations and marketing professionals. Work experience among participants in their current positions ranged from six months to 36 years, and they held degrees including BA/BS, MA/MS, RN, PhD, and MD. Informed consent was obtained from participants, and focus groups were audio-taped for transcription purposes. A February snow storm affected the attendance of one focus group. Due to the difficulty of rescheduling focus groups, participants unable to attend a focus group received the questions by phone or email.

Moderator Training and Guide

Two females and three males conducted the focus groups. Derived from the literature review on medical adverse events perceptions, moderator guide questions were arranged into six main topic areas: 1) introduction, 2) perceptions of medical adverse events and the adverse events regulation, 3) overall impact, 4) communication of data, 5) barriers to adverse events reporting, and 6) solutions to barriers. Researchers solicited input from the ISDH on questions and approval of the final moderator guide.

Data Analysis

The content of the focus groups was transcribed verbatim. Data were analyzed by two coders and the coding scheme was cross-checked by inductive analysis where research begins with the data (Shoemaker, Tankard, & Lasorsa, 2004). Data were coded and categorized into six overall categories based on open coding, axial coding and selective coding (Charmaz, 2006).

Initial data analysis involved open coding to identify discrete themes. These themes were compared and grouped within broader categories.

Indiana News Media Email Survey

Email surveys were chosen to collect data from news media due to their convenience and affordability (Dillman, 2007). An email survey was sent to one representative of each Indiana news media organization, including radio, television, daily and weekly newspaper publications. Questionnaires were sent to 68 daily and 96 paid weekly Indiana newspapers (*2006 Editor & Publisher International Yearbook*). A total of fourteen television news stations from five major markets (i.e., Indianapolis, Fort Wayne, Terre Haute, Evansville, and South Bend) received the questionnaire, based on the Nielson Media's television market list. Few radio stations focus on news as their primary product; thus, only one radio news station in Indiana was invited to participate in the email survey.

The survey targeted people who covered health news; however, most Indiana news organizations do not employ health/medical beat reporters, rather they employ general assignment reporters who cover a wide array of topics including health or medical issues. If the news organization did not employ a health/medical beat reporter, the email survey was addressed to a newsroom editor or director.

Participants

Collectively, Indiana news media respondents were reflective of people who work in a typical newsroom (Weaver, Beam, Brownlee, Voakes, & Wilhoit, 2007). Most were Caucasian (92%), have a college degree (52%) or at least some college (26%), and have an annual household income of less than $50,000 (40%) or between $50,000 and $74,999 (14%). The

majority of respondents worked as editors (50%), news directors (12%), non-health/medical beat reporters (16%), or health/medical-beat reporters (14%). Most news employees rated their understanding of health or medical issues as good (54%) or fair (40%), and they felt somewhat confident (84%) about covering heath issues. The number of female (52%) and male (48%) respondents were nearly equal.

Procedures

The email survey took place from November 17, 2006 to February 17, 2007. Completed questionnaires were received from 52 participants out of 179 Indiana news organizations, a response rate of 29 percent. For email surveys, attaining a high response rate can be difficult, especially from people who work at a news organization (Dillman, 2007). The highest returns were from smaller circulation newspapers; 94 percent of respondents from newspapers with a circulation size of 100,000 or less completed the survey.

Survey Instrument

The email questionnaire was revised several times based on suggestions from the Indiana Hospital & Health Association. The survey was then pre-tested for internal validity; changes were made to the questionnaire based on responses from pre-test participants. The email survey consisted of a cover letter and a hyperlink to the survey. The questionnaire required approximately ten minutes to complete; it included 44 questions addressing the Indiana media's understanding of medical adverse events, including the perceived causes and solutions tied to these adverse events.

Participants who did not respond to the email received a second email two weeks later. If participants did not respond after an additional week, a researcher contacted the news organization by phone to encourage the participant to respond.

Variables

1) Causes. Previous literature on the causes and solutions of medical adverse events was used to create the news media survey. Participants were asked to rate the likelihood of specified causes contributing to medical adverse events on a four-point scale from "very important" to "not important at all." A "don't know" response was provided as well (see Table 1).

2) Solutions. Solutions were also based on a four-point scale from "very effective" to "not effective at all." A "don't know" response was provided for respondents as well (see Table 2).

V. RESULTS

Indiana Health and Medical Providers Focus Groups

Focus group findings address the first four research questions which dealt with perceptions of medical adverse events (i.e., perceptions of the term "medical error" and the reporting system in Indiana [RQ1]; opinions about how data should be used and handled [RQ2]; perceived barriers to reporting [RQ3]; and solutions to these perceived barriers [RQ4]). However, the findings are presented here as themes identified within stakeholder groups (i.e., hospital leaders, health providers [nurses and physicians], quality assurance personnel, and public relations professionals) (Sections 1-4). The fifth section identifies themes that were common to all stakeholder groups. A final section outlines recommendations relevant to this focus group data.

1. Hospital leaders expressed a variety of opinions regarding the term "medical error" and what constitutes an adverse medical event.

A medical error was seen as human error, something that is an inevitable part of working with humans.

They occur as normal part of the process that involves humans.

A mistake is sometimes a mistake, and sometimes it has a terrible outcome because we deal with humans.

In addition, medical errors were described as anything that deviated from normal operating procedure:

Well, anytime that an error occurs whether it is a medication error or a procedural error, it is any time that you deviate from the normal procedure or process.

A medical error would be anything that didn't go according to standard protocols unless there was stated contraindication to that protocol.

One participant indicated that near misses were not reportable but should be.

Indiana should encourage people to report near misses; this information is important.

2. Although the term medical error produced a range of interpretation, there was more agreement among hospital leaders on what constitutes an adverse event.

Several participants commented that there were 27 events that constituted a reportable occurrence and some gave examples to illustrate this understanding:

Let's say that you have to give a medication and there was no consequence that is not a reportable event, a wrong surgery is a reportable event. But it is has to be very major.

Relative to this piece of legislation, it is [a medical error that is reportable] an adverse event that is preventable.

3. A large number of hospital leaders reported having similar quality assurance measures in place prior to the mandate.

Many participants felt as if they took appropriate corrective action when adverse events were discovered. The system's presence did not necessarily change this process, but may challenge some to review their systems.

It really has not had an impact; I have quality people who were already collecting this data. Whenever there is an event we already do a root-cause analysis and develop a plan of action to prevent it happening again, so this does not change it at all.

I think that remains to be seen, I think that at the very least this challenges providers to review their processes. In the event of an error, we need to take all the steps to apply some corrective actions, and so from my perspective, we have been doing these things regardless from aside of the actual reporting. We have taken all steps to investigate such issues.

4. In terms of the goals of the medical error reporting system, there was nearly universal uncertainty among hospital leaders.

Many participants responded to the question, "What is your understanding of the goals/objectives of the system?" with statements such as "I can't understand the goals of the

system" or "I am not sure of the state's goals." Several hospital leaders indicated the desire to better understand the system and its fundamental purpose and goals.

Understanding how they are going to use the information and what is their goal. And how are they going to make all hospitals report the information.

Don't make up the rules as you go. I sense this is a great thing but we don't know how we are going to use the information. It just seems that we are making up the rules as we go; it is hard for us to abide by the rules this way. People must know what the rules are for this to succeed.

5. Potential goals of the reporting system included public well-being, giving patients better control over quality of care, and finding solutions to prevent medical errors.

In general, hospital leaders see the system as a way to improve the quality of the healthcare.

My understanding in keeping with the spirit of the governor's order to work towards the improvement of medical care and encourage reporting, and provide the opportunity to make the public more educated, and to the extent one can learn through sharing.

I would imagine so because patients can be advocates for their own health. That is increasingly becoming important so people can shop around for what is best for them. I would hope that is why they did it.

"It allows the public an accurate way of looking at different facilities so they would get quality care."

6. Hospital leaders felt the system may not be able to achieve these goals as presently constructed.

Specifically, comments suggested that a goal of "mere reporting" or "public reporting" was insufficient to improve patient safety.

> *There is nothing here that has anything to do with improving safety. It is just reporting events, there is not a method of sharing of solutions so the state would be better off, this is a punitive reporting mechanics.*
>
> *In the state in Indiana, reporting a list, there is not anything positive about that. It tells people that the state is watching. We have very few events. We work on them, and we don't turn around and put them in employee newsletters. This is not a positive thing. They may report fewer errors, and the risk of not reporting is now greater. It is not a positive thing.*

One comment summarizes the complexity of feeling about medical error reporting:

> *You know I have mixed feelings about, and the public can interpret it in a variety of ways. They can take away funding, and that's punitive. That's a bad thing for hospitals; and I totally disagree with that. And if it helps others not to make the same mistakes, then you are doing it for the right reasons. You know in health care, we did not report things because it was a very punitive environment. We spend hours getting employees to tell us about adverse events, it is not because they are bad people. You get concerned about people publicly sharing because they may get afraid. We have to be careful and go back to not reporting events.*

7. Overall, the system is seen as positive to the extent that it can achieve goals such as increasing public well-being, giving patients better control over quality of care, and helping to determine solutions to fix the problem of medical errors.

Hospital leaders understand the potential of the current reporting system, but they are not in agreement about whether the system as currently constructed can achieve its potential. They suggest that the state could increase the likelihood of compliance and information-sharing among hospitals if they received explanations of how the system's goals were to be achieved.

> *I would think a focus would be more on improvements and action as a direct result of the error, and how the facility went on to changing their ways. Don't focus so much on the facility. Make it more of a global concern, realizing we all have the capability to have the same result, and to try and make sure that it does not happen.*
>
> *I would get rid of this system, and create a place to share solutions such a Patient Safety Center for improvement, a nonpublic forum so other hospitals could share the experience and solutions with events. So we can learn from each other. Someone from another hospital could help us with an event. In the current system, there is no idea-sharing, and this is a misstep for safety.*
>
> *I think that state should use the data; it is not clear how the state is going to use that data other than to disseminate it, and how the state will use it. Hopefully, that over time it will be able to see improvements. The information should be useful in promoting healthcare. I hope it resolves issues.*
>
> *I am not opposed to transparency in reporting, I would like to see what can be done to improve safety. It is what I care about. I wish they change the current system, and focus on something that would patient health outcomes.*

Providers (Nurses and Physicians)

1. Physicians and nurses spoke about errors in terms of their nature and their effects.

While some participants were vague in conceptualizing medical errors, others used specific examples to illustrate.

It is a deviation of practice with a negative outcome. It can be a result of a complication, becoming too familiar with the process, and kind of trusting yourself in the process too much.

There is a wide range of medical adverse events from performing a surgery on the wrong site to simply writing a prescription for twice a day instead daily. There is also a range of effects of errors from death to no harm to the patient at all.

2. Physicians varied in how they understood the medical errors reporting system in Indiana.

They also suggested the necessity for greater education/information-sharing initiatives.

I have no understanding of medical error reporting in Indiana. I assume that I can report things to hospital administrators, or things come up in litigation, but I do not know the 'official' medical error reporting system in Indiana.

I understand there is a hospital medical errors reporting system, and there were discussion about the possible impact on medical liability. However, I do not know how the information is reported or who is responsible.

3. Although nurses seemed more knowledgeable about the system than did physicians, nurses tended to talk more about their own reporting procedures.

This indicated a range of perceptions across hospitals and providers.

[There are] 27 reportable events…I think they are very standard based on the National Quality Forum and the mandatory reporting is public next year. All the nurses need to know who to contact and who to report to. I think they are realizing that they still need to identify one of those events, and then you have a time frame 15 days to report them.

Now with the data declaring this, that data can be shared so other places can learn from it.

In our facility which is a small facility, the investigation even before goes to quality, and the supervisor, and I mean they do not have to big items, and the items is ranked as far as severity. That is all part of our protocol as far as what gets disclosed, and it has to be a certain level of severity of error before it is disclosed and if it reaches the degree where management may need to be called in.

4. Both physicians and nurses were nervous about the public reporting of medical errors.

They were concerned that people might not choose a particular facility because of how the information is presented by the media, and that the public may not be medically literate enough to correctly interpret the information.

I think having a policy that is open to the public is different, that may make people not choose that hospital or that facility, so I am little nervous about how it is going to be perceived by the public. If the public is going to the web site and they make use of it, they can make decisions about not using a facility. So it is going to affect us negatively, I think we need to know how to handle it. The public may not perceive it the same way as us.

And that's the piece that I would be concerned about would be the negative attention from consumers, how they would take that information, and how they use that. I even hate to say this, but how marketing might go in and look at that or might say something. What would a human do? It's normal human behavior to look at people who aren't up to that bar. And are not performing to where the expectations are.

I would like to see it anonymous and confidential. I'm not sure the general public is medically literate enough to truly understand how to interpret the data.

5. Both physicians and nurses stressed the importance and necessity of confidentiality in reporting.

I hope that it is compiled and presented as aggregate information example 'there were "x" number of medication dispensing errors in central Indiana' to the public, then confidentially communicated from the state to doctors and hospitals when appropriate.

"It should be used publicly in a de-identified fashion. A reporting system should be used to highlight best- and worst- practices. By making the information available in a de-identified fashion, you will overcome concerns about liability and defensiveness."

6. A main theme of the nurse's responses was the need for positive information and educational programs that highlight the positive aspects of safety initiatives.

Although some mentioned benchmarking as a potential positive of the system, it was not seen as entirely positive as was the educational potential.

"Other things I like about the reporting system are that there is ongoing education. You will able to see what they have done, and you can see recall analysis and how they done things. If you are looking at things, and then you can see what you have done even there are near misses or an error, you can in there and see what others have done or see the processes they have done and hopefully prevent an error from happening."

"Information should be provided in a "positive" fashion in addition to only reporting errors. Just as good business managers and parents offer positive and negative feedback for behaviors they wish to reinforce, a "medical adverse events" system in Indiana should set forth practice models as well as identifying problems. It is hard to identify individual areas for outcomes."

"While perhaps practical, errors happen in every aspect of medical practice due to the inherent complexities of the system."

Quality Assurance Professionals

1. Quality assurance professionals pointed out the ambiguity of the term "medical errors."

Uncertainty centered on the scope of medical errors as well as the continual shifts and debates in the ways in which medical errors are defined.

There are many definitions of medical errors. For health care unity, we need to determine what a medical error is.

The concept of medical errors is constantly expanding and changing. If you don't provide all the details about the evidence-based standard care, is that an error?

When you look at as harm to the patient, that's open to debate. It's difficult to come up with an operational definition.

2. Gaps in the understanding of medical errors are a system-level problem versus an individual-level problem.

Specifically, quality assurance professionals commented that their attempts to look at the whole system or the reporting process is interpreted by health care providers as "blaming the individual." Likewise, media and the public typically use individual-level explanations.

I think we really try to focus on the system, we look at our processes…I am not sure if the public is there yet. Media in my environment is more of a punitive approach – a negative story.

But there is a big section of health care that doesn't look at it as a process. And most of the time we will find it as a process trouble. You can't blame yourself. But usually in health care system it's seen as personal responsibility.

None of us go to work with the intention of harming anyone. It's not an individual goal. That's the message that needs to go out. We all are working here and gone through umpteen years of education to get to this point.

"It has to be accepted that human beings make errors. That's the first step. Another step is what we are putting in place so human beings do not cause much harm to patients. It's not intended to harm anyone."

3. Quality assurance professionals suggest that medical errors reporting is about protecting the patient and optimizing the services available to the patient.

Our job is how we can address those errors from being harmful to patients.

4. There was concern regarding the media's role in sensationalizing medical errors.

Participants perceived stories that focus on conflict as more valuable to the news media than good ones.

> *Nothing is worse for the media than to have a slow news day. So they will love this because it gives them something for that week. And it's done under the guise of public service. I don't know whether they have that much of an investment in the game. For them it's like a great story to tell.*

5. Participants discussed the necessity for opening up communication systems in hospitals.

Quality assurance professionals believe that visibility will reduce negative perceptions. Transparency involves communication with patients and media, as well as other hospitals to learn about system-level issues and to fix them.

> *It's also true that we have built walls around our institutions and have not let anybody in. So people want to see how these things work because once you walk through our door you are under our control. We tell you when to eat, when to go to the bathroom, all these things. And we haven't let anybody see that. If you think you are getting a glimpse, it's a huge thing. Whether it's appropriate or the most helpful thing doesn't enter into it.*
>
> *If we are not sharing our root cause analysis, we are not learning. We can learn from each other's events.*

6. There is a need to promote the reporting of events by sharing past, present and future successes with the public and other medical institutions.

Specifically, quality assurance professionals commented that medical error reporting initiatives have been in hospitals for years.

These things are going on for years. But we haven't ignored these. Every single event – review, internal investigation – and when I talk to my neighbors about what we do, they would say, I had no idea that your hospital is like this.'

"Train the public that errors are going to happen. But we are constantly working to ensure that they don't happen.

As a quality professional, when we go into to investigate an event, we come from that process vs. people part. But the practitioners that are involved immediately take on that line. One of the first things we do is put the blame away and say let's look at this. We are talking about health care as a process. But there is a big section of health care that doesn't look at it as a process

Public Relations Personnel

1. Some public relations professionals saw medical errors as an individual-level problem committed by individual staff members.

I think we all see it as medical errors by some members of the hospital staff. Something was done that was not the right thing. A device or person did something that wasn't right to the patient.

2. Some public relations professionals saw medical errors as related to system-level characteristics.

Medical errors can occur as a result of a variety of circumstances such as inexperienced nurses and doctors, new unproven procedures, poor communication, improper documentation, illegible handwriting and staffing issues (to name a few causes). In most cases, medical errors are not a result of

one person's mistake but a system-wide issue that failed to prevent the error from occurring.

3. The orientation is crisis-response, rather than preventive, although the system encourages a proactive attitude.

Our Quality Management department has been preparing for the new regulation since it was first announced. We have taken a very proactive approach to the new rules. We try to be as transparent as possible so the news rules certainly fall into line with our philosophy on releasing information to the public.

I guess our role would be…when our quality officer and/or the CEO tell us, we need to let people know, we need to be prepared for getting calls from the press.

If we get calls from the press, I doubt we will address the issues. We have not determined yet who will be the spokesperson. It could be the chief quality officer.

4. The general role of the public relations professional is to communicate with public through the media.

Thus, the PR practitioner does not deal with error reporting or the system as much as with routing media representatives to the appropriate spokesperson or offering wording expertise for information that will go out to the media or public.

For reporting to the public, it will go through me. But I will not necessarily know what we are reporting to the state department. The quality officer does that. For media, I do it usually. But however, depending on what they ask, I pass on to the CEO or whoever we determine to be the spokesperson. I probably won't discuss the details with the media though I would be aware of what they are talking about.

5. According to PR practitioners, the error reporting system in Indiana aims to improve patient care and increase accountability.

This response is similar to hospital leaders.

[The system] is clearly intended to help improve patient safety initiatives and to help patients evaluate the care given at hospitals and other healthcare facilities.

It seems that the goals and objectives of this new order are to help improve public accountability.

6. Participants commented about the necessity for confidentiality, standardization, and movement away from a punitive culture and toward an incentivized system.

With regard to **confidentiality**, concerns were expressed over the reporting of errors to the general public. Instead, it was suggested that error reporting information be used only to share information among healthcare organizations to improve the system.

Let's just not report this to the public, but let's use this information in a confidential forum between health systems and hospitals.

If the goal is to reduce errors by reporting, then I don't think that's adequate.

You can argue that public has a right to know and these should be released. But I think some of the confidential forums between hospitals will be more effective in reducing the number. But I think institutions need to have the processes in place.

My biggest concern is the data will be used just to compare hospital to hospital and rank which hospital had the most and which had the least.

With regard to **standardization**, respondents commented that reporting may differ from state to state, hospital to hospital.

Even in the information that Indiana hospital association sends out, there are nuances and differences and how people will report. This also shows it's not just health system but state associations are saying this. It might not be apple to apple.

I think it [my main concern] would be consistency in reporting of errors. I would like to know that process is working well. That all institutions are reporting and in the same way.

There is no system to check if people are reporting. You are trusted to do the right thing and report.

As with the hospital leaders, PR practitioners saw the system as potentially punitive. It was suggested that some sort of **incentive** be instituted to help alleviate this perception.

It does not sound very non punitive.

I think our quality officer is preparing us get away from the punitive culture and improving the process.

The system the way its set up right now is not necessarily punitive, but certainly not incentivized. I think there's no penalty in place for not reporting such event.

We agree that the reporting has to happen. We would like to see that there's more incentivized plan.

7. PR practitioners stressed the utility of the system in promoting learning from mistakes.

It should not be like that [a reporting system strictly for release to the public] for the sake of reporting, but for educating one another.

…all hospitals have a deep understanding that errors do occur and it critical we learn from every event that does happen so it can be prevented in the future.

Overall Focus Group Themes

1. Although many participants understood medical adverse events to be system-based, there is a slight misconception that errors are a product of individual-level errors.

Moreover, there is a high level of ambiguity with regard to both "medical errors" and "medical adverse events" as the terms were not consistently defined or expanded upon across groups. There is greater need for consistency in defining terms and communication that is consistent.

2. Participants from all groups stressed the need for the reporting system to provide education and not be used as a punitive measure.

If the system is perceived as a punitive measure then participants will not view it as a potentially important part of creating a no-blame and safety-centered culture. In this regard, the participants across the groups pointed out the importance of education and information campaigns that highlight the system-level nature of the issue.

3. There was almost universal agreement regarding the potential for the system to educate healthcare providers and leaders about errors and potential misses.

Participants continually stressed that learning from mistakes and "almost errors" would be beneficial. Instituting a system that will allow for information sharing that is used as educational is wanted.

4. There is a large amount of anxiety over the potential of public reporting among all constituent groups.

Although anxieties are idiosyncratic insofar as they have different potential impact on different occupations, participants were generally concerned with the media focusing on the

negative aspects of medical adverse events and the lack of standardization being misrepresented in the news media.

5. Most hospitals already have reporting systems in place.

The current system may be seen as negative because (a) it is mandatory and (b) it is perceived as less useful or more punitive than current systems.

6. There were several comments regarding the use of explanation within the reporting system.

Specifically, many suggested that instead of simply reporting the number of events that a description be included in order for learning opportunities to be available.

Indiana News Media Survey

Understandings of Medical Errors (RQ 5)

The majority (77%) of Indiana journalists responded that they had heard the term "medical error" before, and they view a medical error as a mistake or misdiagnosis that occurred under the care of a hospital, employee, doctor or facility which can either risk the life of or injure a patient. Most journalists learned about the issue of medical errors from the news media (48%) or experience with a friend or a family member (21%).

Most journalists believed that preventable adverse events occur "somewhat often" (39%) or "not too often" (39%). They overwhelmingly (65%) believed that both individuals and the health care system can be responsible for a medical error. However, most journalists felt that they do not know (52%) how many Americans are affected annually, but they would speculate that around 5,000 people are affected annually by medical errors in the United States. Answers varied regarding the number of preventable medical errors: all (14%), three-quarters (25%), half

(31%), one-quarter (2%), and "don't know" (29%). The majority of journalists (98%) believe that reporting medical errors data should be required and (66%) released to the public.

Perceived Causes of Medical Errors (RQ 6)

News media professionals in Indiana responded that there are multiple contributing factors to medical errors. These include communication barriers (76%), heavy patient loads (74%), overwork/stress or fatigue of providers (56%), and too few nurses (44%). They indicated that poor training of health professionals (18%), increase use of computerized medical records (18%) and fragmented nature of health facilities (20%) are less likely the cause of medical errors (see Table 1).

Effectiveness of Solutions (RQ 7)

The majority of journalists responded that more support is needed for individual health care providers to prevent adverse events. News media professionals indicated that "very effective" solutions to preventing medical errors include requiring hospitals to implement systems to avoid medical errors (86%), record corrective and preventive procedures (80%), allow more time with patients (68%), increase the number of nurses (52%), and reduce the number of hours doctors work to alleviate fatigue and stress (52%) (See Table 2).

VI. RECOMMENDATIONS

Indiana Health and Medical Providers

Empirical evidence suggests that medical errors are not often disclosed, despite the fact that patients, physicians and the public support disclosure (Blendon,et al., 2002; Mazor et al.,

2004). This may be due to minimal disclosure guidelines for practitioners (Mazor, Simon & Gurwitz, 2004; Rosenthal & Riley, 2001). Results from this study's focus groups may be used to help guide disclosure in such a way that ensures patient safety.

Health and medical providers voiced the opinion that medical providers should be encouraged to share and learn from one another to prevent medical errors. Based upon providers' responses, the researchers make the following recommendations.

1. Education and continual communication that clearly addresses the goals and expected benefits of medical error reporting should be provided by the state.

This information is essential to overcome skepticism about the system's purpose. The format, presentation style, and message strategy should be tailored for multiple audiences to optimize effectiveness. Health care professionals would like to see information on the error, the prescriptive practices used to correct it, and evidence-based changes occurring from their reporting of medical adverse events.

Some efficient approaches to communicating with medical and health providers can be accomplished on a Web site. The ISDH could create modules for providers, such as: 1) an online introductory module that lays out the objectives and goals of the system, supported with in-person contact at administrative, staff, and provider meetings, 2) monthly reports showing incident-sharing prescriptive practices, 3) an annual or biannual report that documents evidence-based outcomes, 4) and news releases sent to key liaisons working in Indiana medical institutions when new information is posted.

2. Work to standardize the reporting system across the state.

Standardization is an important element necessary to make this program effective across the state of Indiana. Health care providers want to work together but fear that the lack of a standardized system in place will be a barrier to the system.

3. Reflect a no-blame culture and a commitment to protect patient safety in all public communication.

There is a need to shift the individual-blame model to a system-based model whereby medical errors and adverse events are defined as a *process issue*. This is delicate, however, because statements could cause more fear than calm among the public, even if the "blame" is shifted from individuals to process. Statements should highlight the commitment of hospitals and their staff to protect patient safety in every feasible way.

4. Help hospitals provide a consistent message regarding medical errors to reduce confusion and fear among the public.

The ISDH could create media templates to assist medical organizations in responding to medical errors. They may also consider providing PR assistance for media and hospital professionals through a statewide public relations contact.

Indiana News Media

News media play a key role in molding public perception about medical errors, and many health care organizations look to the media to communicate with the public on their behalf. Good relationships between the media, health care organizations, and the state are vital to achieve state-wide patient safety improvement and education.

1. Make the process and procedures of the medical errors reporting system transparent to the media, and establish a communication sharing system before the release of the first annual report.

Responses from the email survey indicate that the majority of the news media believes that medical errors should be reported to the state, and errors and corrective practices should be shared with the public. Knowledge of a state-wide communication-sharing system will encourage the news media to focus less on numbers and more on how the state is working to ensure safer medical environments, which will be particularly important to members of the public who have been affected by a medical error (Peters, Lipkus, & Diefenbach, 2006).

2. Provide extensive background information on medical errors and the medical errors regulation on a continual basis.

This could include the availability of a Web site that provides in-depth information.

3. Inform hospitals that they need to designate a public relations and a medical professional to be available to speak to the public and the news media about medical errors.

4. Educate the news media about how medical professionals take action once a medical error has occurred.

5. Educate the media on how to help the public use the data to make informed health care decisions.

6. Offer a one day or evening session dedicated to educating reporters about the issue of medical errors and the reporting system in Indiana.

The survey data shows that most reporters (86%) are general assignment reporters, editors, or news directors, which means that they do not regularly cover health or medical issues.

VII. SUMMARY OF RECOMMENDATIONS

This research project sought to identify health provider and media perceptions and their recommendations related to reporting adverse events data. In order to maximize the effectiveness of the data resulting from the new policy, we encourage the ISDH to:

- Develop education modules for key stakeholders to provide information on the background and the benefits of reporting adverse events.
- Offer data in tailored formats for various stakeholders.
- Develop communication tools that health care organizations can use with the public and local media.
- Offer training for the news media to facilitate their reporting of the data.
- Provide supporting materials with the release of the data that target how data will be used to prevent future occurrences of medical adverse events.
- Provide resources for the news media, the public, and the providers that detail background information on adverse events and the adverse events regulation.

VIII. ENDNOTES

[1] Those states are: California, Colorado, Connecticut, Florida, Georgia, Illinois, Indiana, Kansas, Maine, Maryland, Massachusetts, Minnesota, New Jersey, Nevada, New York, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, and Wyoming

[2] The 27 events include:
1) surgery performed on the wrong body part,
2) surgery performed on the wrong patient,
3) wrong surgical procedure performed on a patient,
4) retention of foreign object in a patient after surgery or other procedure,
5) intraoperative or immediately post-operative death,
6) patient death or serious disability associated with the use of contaminated drugs, devices or biologics by the health care facility,
7) patient death or serious disability associated with the use or function of a device in patient care in which the device is used or functions other than as intended,
8) patient death or serious disability associated with intravascular air embolism that occurs while being cared for in a health care facility,
9) infant discharged to the wrong person,
10) patient death or serious disability associated with patient elopement for more than four hours,
11) patient suicide, or attempted suicide, resulting in serious disability while being cared for in a health care facility,
12) patient death or serious disability associated with a medication error,
13) patient death or serious disability associated with a hemolytic reaction due to the administration of incompatible blood or blood products,
14) maternal death or serious disability associated with labor or delivery in a low-risk pregnancy while being care for in a health care facility,
15) patient death or serious disability associated with hypoglycemia, the onset of which occurs while the patient is being care for in a health care facility,
16) death or serious disability associated with failure to identify and treat hyperbilirubinimia in neonates,
17) stage 3 or 4 pressure ulcers acquired after admission to a health care facility,
18) patient death or serious disability due to spinal manipulative therapy,
19) patient death or serious disability associated with an electronic shock while being care for in a health care facility,
20) any incident in which a line designated for oxygen or other gas to be delivered to a patient contains the wrong gas or is contaminated by toxic substances,
21) patient death or serious disability associated with a burn incurred from any source while being care for in a health care facility,
22) patient death associated with a fall while being care for in a health care facility,
23) patient death or serious disability associated with the use of restraints or bedrails while being in a health care facility,
24) any instance of care ordered by or provided by someone impersonating a physician, nurse, pharmacist or other licensed health care provider,
25) abduction of a patient at any age,

26) sexual assault on a patient within or on the grounds of a health care facility and
27) death or significant injury of a patient or staff member resulting from a physical assault that occurs within or on the grounds of a health care facility

[3] The QuIC included the Department of Health and Human Services, the Department of Labor, the Department of Veterans Affairs, the Department of Commerce, the Department of Defense, the Coast Guard, the Bureau of Prisons, and the Office of Personnel Management (Final Report, 1998).

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X. APPENDICES

Table 1: Perceived Causes of Medical Errors by Indiana News Media Journalists

n = 52	Very Important	Somewhat Important	Not Very Important	Not Important at All	Don't Know
Miscommunication or no communication among hospital workers	76%	16%	4%	2%	2%
Heavy patient load	74%	20%	4%	0%	2%
Overwork, stress and fatigue of providers	56%	38%	4%	2%	0%
Too few nurses	44%	38%	8%	4%	6%
HMO network providers effect on treatment decisions	38%	46%	8%	4%	4%
Failures of the medical system	34%	44%	6%	10%	6%
Poor handwriting of providers	34%	42%	10%	10%	4%
Fragmented nature of health care facilities	20%	46%	10%	6%	18%
Lack of computerized medical records	18%	44%	26%	10%	2%
Poor training of providers	18%	30%	24%	16%	12%

Table 2: Perceived Solutions to Medical Errors by Indiana News Media Journalists

n = 52	Very Effective	Somewhat Effective	Not Very Effective	Not Effective	Don't Know
Make medical error reporting mandatory	88%	10%	2%	0%	0%
Implement systems to avoid medical errors	86%	14%	0%	0%	0%
Record corrective and preventative procedures	80%	18%	0%	0%	2%
Report errors to a state agency	78%	20%	0%	2%	0%
Share corrective and preventative practices	72%	18%	2%	6%	2%
Make medical errors public	72%	14%	6%	4%	4%
Spend more time with patients	68%	26%	0%	2%	4%
Have a state agency use the data to find solutions	60%	30%	6%	4%	0%
Reduce the number of works to alleviate fatigue	52%	40%	4%	4%	0%
Increase nursing numbers	52%	32%	8%	2%	6%
Greater use of computerizes records	40%	46%	8%	6%	0%
Fine/suspend the license of those who cause a medical error	34%	50%	14%	0%	2%
Rely on specialists more so than primary care doctors	20%	44%	22%	10%	4%
Include a pharmacist on hospital rounds	16%	52%	12%	6%	14%
More lawsuits for malpractice	4%	14%	40%	40%	2%