Physician and Public Opinions on Quality of Health Care and the Problem of Medical Errors

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Background: The 1999 Institute of Medicine report on medical errors proposed major changes to the health care system and gained widespread media attention, yet there is limited information on physician or public opinion regarding recommendations from that report.

Methods: Mail survey of 1000 Colorado physicians (n=594) and 1000 national physicians (n=304), and telephone survey of 500 Colorado households to assess agreement with several proposals and conclusions from the 1999 Institute of Medicine report.

Results: Most physicians believed that reduction of medical errors should be a national priority (69.7% of Colorado physicians). However, physicians were much less likely than the public to believe that quality of care is a problem (29.1% vs 67.6%; \(P < .001\)) or that a national agency is needed to address the problem of medical errors (24.1% vs 59.8%; \(P < .001\)). Uniformly, physicians believed that fear of medical malpractice is a barrier to reporting of errors and that greater legal safeguards are necessary for a mandatory reporting system to be successful. Nearly all physicians (92.9%) believed that more training in how to handle medical errors is needed, and 60.1% agreed that it is difficult to differentiate errors due to negligence from unintended errors.

Conclusions: There appears to be widespread concern among physicians regarding medical errors, but only a minority in this survey believed that the problem is as significant as the Institute of Medicine and the public believe it to be. Our results suggest that physicians see several barriers to successful error reduction including difficulty defining errors, the need for more training in handling errors, and fear of malpractice litigation. Addressing these barriers will be a necessary step to increasing physician support for many of the changes proposed by the Institute of Medicine.

Arch Intern Med. 2002;162:2186-2190

Over the past decade, the quality and safety of health care in the United States has become a major public health concern and the focus of significant research. The 1999 Institute of Medicine (IOM) report on medical errors, To Err Is Human: Building a Safer Health System,1 reported “preventable adverse events as a leading cause of death,” and provided startling estimates of “between 44,000 and 98,000 Americans dying each year in hospitals as a result of medical errors.” While the accuracy of these estimates, which were based largely on retrospective reviews of 2 observational studies,2,3 has been widely debated,4,5 the report has provided impetus for our health care system to accept the challenge of improved reporting of medical errors and the reduction of preventable adverse events. The IOM recommended that the federal government create a national agency to research and monitor patient safety and advocated a nationwide mandatory reporting system for serious medical errors.6 Furthermore, the IOM acknowledged the potential problems facing those who report errors and called for health care organizations to establish internal nonpunitive error reporting systems in addition to national legislation to protect reporting of nonserious medical errors.1 Since the release of this report, a number of national and private initiatives to define the scope of the problem and to develop strategies for quality improvement have arisen. The Agency for Healthcare Research and Quality along with the Quality Interagency Coordinating Task Force and the National Quality Forum are among the leading agencies that have been designated to coordinate research activity and implement standards for quality improvement. In addition, the Joint Commission on the Accreditation of Healthcare Organizations has called for the implementa-
tion of new patient safety standards and mandatory non-punitive reporting of serious medical errors.9
The public's opinions regarding the safety of health care are not well understood. A 1997 National Patient Safety Foundation survey of adults reported that 42% of respondents had been affected by a medical error, either personally or through a friend or relative. In this same survey, respondents rated health care as "moderately safe" overall, but it is not clear if or how public opinion has changed since the IOM report was released.10

Despite the significant publicity given to these issues in both medical and general press, there is limited information about physician or public opinion on the IOM's findings and recommendations. In view of the recent initiatives to establish quality improvement standards in medical care and to reduce medical errors, we believed it was important to ascertain physician and public attitudes on the quality of health care and reporting of medical errors in the United States, specifically addressing conclusions from the 1999 IOM report.

PARTICIPANTS AND METHODS
POPULATION AND SUBJECTS
We conducted a mail survey of 1000 Colorado physicians, randomly selected from the Colorado Board of Medical Examiners list of active practitioners (N = 12168), and of 1000 physicians nationwide, randomly selected from a master list of practicing physicians, maintained by the American Medical Association (N = 730290); this list, which contains both members and nonmembers of the American Medical Association, is the most complete list of active practitioners in the United States. Response rate for physicians was calculated by dividing the numbers of returned surveys by the number mailed minus the number returned undeliverable. We also conducted a random digit-dialing telephone survey of 500 Colorado residents. Public respondents were considered eligible if there was a member of the household 18 years or older willing to answer the survey. Nonworking and nonresidential numbers were omitted. Response rate was calculated as the number of respondents divided by the number of eligible households reached.

QUESTIONNAIRE
All respondents were asked to rate their agreement with selected statements taken from the IOM report on a 4-point Likert scale, ranging from strongly agree to strongly disagree. Physicians were asked to rate their agreement with an additional set of statements that were not asked of public respondents. Physicians were asked their age, sex, specialty, practice type and setting, and whether they had personally been involved in a medical malpractice suit. Public respondents were asked their age, sex, racial/ethnic background, income, and level of education. The study protocol and survey instrument were approved by the Colorado Multiple Institutional Review Board.

ANALYSIS
Statistical analyses were performed using SAS version 8.01 (SAS Institute Inc, Cary, NC). Differences in agreement were measured between the Colorado public and Colorado physicians and between Colorado and US physicians. Responses were analyzed in 2 ways. First, agreement with statements was compared between groups along the entire range of responses using the Mantel-Haenszel χ² test; second, agreement was analyzed as a dichotomous variable, with responses of "strongly agree" or "agree" and "strongly disagree" or "disagree" combined. Because there were no significant differences in the 2 analyses, we chose to report the dichotomous agreement variables in the results to maintain simplicity and clarity. Differences in agreement rates between physician groups and between physician and public respondents, as well as demographic differences within groups, were tested with χ² tests.

To compare the respondents to the larger populations from which they were drawn, we calculated 95% confidence intervals (CIs) for the demographic characteristics of physicians and the public in our samples. Public respondents were compared with census figures for the state of Colorado11 and Colorado Department of Housing figures for the year 2000.12 For physicians, data on US physicians from the American Medical Association13 were used for comparison; no separate demographic data on Colorado physicians is available. We considered demographic characteristics to be significantly different from the larger population if the population figures fell outside of the 95% CI for our respondents.

Multivariate logistic regressions were performed within groups (physicians or the public) to determine adjusted odds ratios (ORs) for predictors of agreement with each statement. For the public, variables included in the models were age, race (dichotomized into white and nonwhite), education (dichotomized by high school graduate or not), and annual household income (dichotomized at above or below $35000 [near the median income in Colorado]). For physicians, variables included in the model were age, primary care, urban vs rural, and previous involvement in a malpractice suit. Because age was not found to be a significant factor in any model, age older than 65 years was also examined as a dichotomous variable for physicians and the public.

RESULTS
In Colorado, 594 of 902 eligible physicians completed the questionnaire for a response rate of 65.9%. In the national sample, 304 of 853 eligible physicians completed the survey for a response rate of 35.6% (Table 1). Overall, Colorado and national physician respondents were demographically similar to each other and to physicians nationwide. A slightly higher percentage of both Colorado and national physician respondents practice in rural settings compared with physicians nationwide; a slightly higher proportion of Colorado physician respondents practice primary care.

Six hundred ten eligible Colorado households were contacted to obtain 500 responses for a response rate of 82% (Table 2). Compared with the Colorado population as a whole, our respondents were more likely to be female, more likely to have earned a college degree, and less likely to be Hispanic. Respondents were similar to the adult Colorado population with regard to income and median age.

Table 3 compares physician and public attitudes in Colorado regarding the quality and safety of health care and the need for national solutions with the problem of medical errors. Compared with physicians, the public was more likely to believe quality and safety of care are a problem, that error reduction should be a national priority, and that a national agency is needed to address safety, and to support mandatory reporting of serious errors.
Rates of agreement between physicians and the public were significantly different for all statements with the exception of the IOM estimate of 44,000 to 98,000 deaths annually due to medical errors. While 19% of both groups agreed with the estimate, 69% of public respondents and 25% of physicians did not agree if it was accurate (P < .001). For those who disagreed with the estimate, 29% of the public respondents indicated that the number was too low, compared with 2% of physicians. Conversely, 73% of physicians believed the estimate was too high, compared with 2% of the public.

Table 4 compares Colorado and national physician attitudes and perceptions about reporting and handling medical errors. Nearly all physicians agreed that fear of medical malpractice is a barrier to the reporting of errors and that greater legal safeguards are necessary for a mandatory reporting system to be successful. A large majority also agreed that the emphasis of reporting should be nonpunitive, and only one quarter believe that the public should have access to error reporting systems. Nearly 40% of physicians in both groups did not agree that all members of the medical care team should be responsible for reporting errors. Nearly all physicians reported that more training in how to handle medical errors is needed. Physicians in the national sample were more likely than Colorado physicians to agree that a national agency is needed (32.2 vs 24.1%; P = .01) and that malpractice litigation is a barrier to error reporting (98.4 vs 95.5%; P = .03). Otherwise, there were no significant differences in agreement between Colorado and national physicians.

Multivariate regression analyses found that physicians who were 65 years or older were more likely to agree that quality is a problem (Colorado physicians adjusted OR, 3.0; 95% CI, 1.7-5.4; national physicians adjusted OR, 3.4; 95% CI, 1.6-7.3). Previous involvement in a malpractice suit was associated with lower rates of agreement with mandatory reporting (Colorado physicians adjusted OR, 0.7; 95% CI, 0.5-0.9; national physicians adjusted OR, 0.6; 95% CI, 0.4-1.0) and with public access to reporting systems (Colorado physicians adjusted OR, .001). For those who disagreed with the estimate, 29% of the public respondents indicated that the number was too low, compared with 2% of physicians. Conversely, 73% of physicians believed the estimate was too high, compared with 2% of the public.

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For public respondents, people were less likely to agree with the need for a national agency to address the problem of medical errors if they were white (adjusted OR, 0.3; 95% CI, 0.2-0.6), had attended some college or higher (adjusted OR, 0.5; 95% CI, 0.3-0.9), or had a higher income (adjusted OR, 0.5; 95% CI, 0.3-0.8). Rates of agreement with the other statements did not differ significantly by demographic characteristics.

### COMMENT

The present study demonstrates that there is widespread concern in Colorado among both physicians and the public regarding the problem of medical errors, and a majority of both groups believe that error reduction should be a national priority. However, it appears that a much higher proportion of the public, compared with physicians, is concerned about the quality and safety of health care. Although we did not ascertain the reasons for this difference in our survey, it is possible that media attention given to the IOM report and to isolated but horrific medical errors has affected public perception as well. In a recent public survey, only 42% of respondents reported that they or someone they knew had been affected by a medical error, yet 87% of respondents in our survey believed that error reduction should be a national priority.

Another possible explanation for the difference between public and physician opinion is that physicians are not as concerned about errors as they should be. Most physicians (73%) in our survey indicated that the IOM estimate of 44 000 to 98 000 deaths per year due to medical errors was too high, and only 21% believe that the quality of health care in the United States is a significant problem. However, it may also be that the culture of medicine, which has not encouraged physicians to openly acknowledge mistakes, has contributed as well. Further study is needed to clarify the underpinnings of both physicians’ and the public’s beliefs.

Our survey also found a difference of opinion between physicians and the public on how to deal with the problem of medical errors. The public was substantially more likely than physicians to agree with the designation of a national agency to lead initiatives in reducing medical errors, with almost 60% of the Colorado public supporting such an agency. It appears that public support of government’s role in reducing errors has increased since 1997, when a national survey reported that majority of respondents (53%) believe that federal and state governments have a negative or no effect on patient safety.

There was also a large difference between physician and public support of a mandatory reporting system for serious medical errors. Even though the majority of physicians support the idea of mandatory reporting, most also see significant barriers to such a system. Among the barriers identified were difficulty in defining errors, deciding who should be responsible for reporting them, deciding who should have access to the results of reporting systems, fear of malpractice litigation, and the need for greater legal safeguards. This issue has been similarly raised in a recent report from the American College of Physicians–American Society of Internal Medicine on the State of the Union’s Health Care, which called for Congressional support of a uniform, voluntary, and nonpunitive reporting requirement for medical errors with individual confidentiality protections. The American Col-

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<th>Table 4. Colorado and National Physician Opinions</th>
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<tr>
<td><strong>Statement</strong></td>
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<tr>
<td>The quality of health care in the United States is a significant problem.</td>
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<td>Our health care system does not match the safety record attained in other industries.</td>
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<td>Error reduction in medical practice should be a national priority.</td>
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<td>We need a national agency to provide leadership and research in reducing medical errors.</td>
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<td>We should implement a system of mandatory reporting of serious medical errors (ones that cause death or serious injury).</td>
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<td>Training in how to handle medical errors is needed.</td>
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<td>It is difficult to differentiate between errors due to negligent care (below the expected standard) and unintended errors.</td>
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<tr>
<td>A reasonable definition of a serious medical error is “an adverse event that results in death or serious harm.”</td>
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<td>All members of the medical care team, regardless of profession or grade, should be responsible for reporting medical errors.</td>
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<td>The public should have access to reporting systems for medical errors.</td>
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<td>The emphasis on reporting of medical errors should be nonpunitive.</td>
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<td>Medical malpractice litigation is a barrier to the reporting of medical errors.</td>
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<td>Greater legal safeguards are necessary for a system of mandatory reporting of serious medical errors to be successful.</td>
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<tr>
<td>A recent estimate that medical errors kill 44 000 to 98 000 Americans yearly is accurate.</td>
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lege of Physicians–American Society of Internal Medicine also called for broader reform of the medical liability system with enactment of legislation to protect peer review and individual confidentiality prior to implementation of either a voluntary or mandatory reporting system. Our survey found that most physicians agree with these recommendations and reinforces the notion that the current medicolegal environment must be changed before more substantial reforms recommended by the IOM can be enacted.

Our survey has several limitations. We used different methods to administer the survey (a mail questionnaire for physicians and a telephone survey for the public). While we believe this was the most efficient way to ensure an adequate response from each group, the different modes may have affected responses, with non-response bias being more problematic with self-administered questionnaires.17 The use of a telephone survey excluded those without telephones, and thus those of lower socioeconomic status are more likely to be underrepresented. However, our proportion of those with annual household incomes less than $20,000 was similar to the state as a whole, so we believe this potential source of bias has been minimized. Response rates for physicians were lower than those for the public, which also may lead to non-response bias, and limits our ability to generalize these results to the larger population. For Colorado physicians, we believe the response rate was adequate, and while the response patterns of physicians in the national sample were comparable with Colorado physicians, the low response rate in the national sample does not allow us to generalize our findings to physicians nationwide.

Our survey of the public respondents only included Colorado residents. Colorado residents are slightly younger, more educated, and have a higher median income than the nation as a whole, and Colorado has fewer African Americans and more Hispanics. Thus, our results cannot be generalized to the public outside of Colorado. Also, our survey of the public was likely to have included people who do and do not have regular contact with the health care system. Such contact may be an important predictor of views regarding the quality and safety of health care, but we did not gather this information from our respondents. Also, the definition of “quality” is multifactorial, and we cannot infer that respondents’ concerns about the quality of health care in the United States are necessarily related to safety or errors.

In summary, we found that the Colorado public agrees with many of the conclusions made by the IOM and is likely to support many of the changes they have proposed to improve safety and decrease medical errors. In contrast, physicians are less likely to agree with the IOM’s conclusions or to support their recommendations. Without physician support, effecting such changes will likely be more difficult. Our survey found several areas of concern to physicians that may need to be addressed to increase physicians’ support of changes and improve their effectiveness. The IOM acknowledges the legal barriers to effective error reporting systems, and our survey confirms that physicians nearly uniformly concur. Improvement in training of providers in how to handle medical errors appears to be needed as well. Better understanding of the differences in public and physician attitudes and attempts to address the barriers to change may help facilitate improvements that are acceptable to all involved groups. Physicians should also be aware of public perceptions regarding the quality and safety of health care and how they may affect both their patient interactions and public policy.

Accepted for publication February 13, 2002.
These results were presented in part at the Society of General Internal Medicine National Meeting, San Diego, Calif, May 3, 2001.

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