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Physician Misconduct and Public Disclosure Practices at the Medical Board of California

By Brian R. Sala, Ph.D.

As mandated by Chapter 223, Statutes of 2006

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C A L I F O R N I A

R E S E A R C H B U R E A U

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Executive Summary

Oversight of the healthcare industry in California is complex, involving many agencies and licensing boards. Perhaps the most important of these is the Medical Board of California (MBC), which licenses and regulates the practice of medicine by some 125,000 physicians and surgeons in California. The Medical Board's highest policy priority, according to law, is to protect the public.¹

This report seeks to clarify current Medical Board of California public disclosure practices and what is known about how those practices serve the goal of public protection. The report is mandated by SB 1438 (Figueroa), Chapter 223, Statutes of 2006 (codified at Business and Professions Code Section 2026), which instructs the California Research Bureau to

study the role of public disclosure in the public protection mandate of the [Medical Board of California]. The ensuing CRB report shall include, but not be limited to, considering whether the public is adequately informed about physician misconduct by the current laws and regulations providing for disclosure. The study shall present policy options for improving public access.

Unfortunately, harm comes to many patients in the U.S. healthcare system. The National Academy of Science's Institute of Medicine stated in 2000 that between 44,000 and 98,000 Americans die each year from the consequences of adverse medical events – defined as “injuries caused by medical management,” including negligent and incompetent care.² These figures imply that 10,000-20,000 deaths each year in California are attributable to adverse medical events.³

At stake is what difference MBC disclosure policies make to public safety and the quality of medical care of California. We address this question in three ways. First, we outline current law and MBC policies with respect to public disclosure. Second, we survey public disclosure “best practices” in use on other state medical board websites and the scholarly literature on medical errors.

Third, we undertake a statistical investigation of the relationship between certain, contested data elements – such as malpractice payout histories – and MBC disciplinary proceedings. The goal of the statistical analysis is to better identify risk factors the Medical Board and the public can employ in evaluating physicians.

The report makes several important points:

- **National data suggest that the volume of “Quality of Care” complaints received by the Board each year falls far short (by an order of magnitude) of the number of serious injuries Californians receive in hospitals each year due to negligent or incompetent care.**⁴

Most peer-reviewed studies of medical errors and malpractice imply that the large

majority of patients who are harmed by healthcare provider negligence or incompetence fail to file formal complaints. While many medical errors are attributable to the actions or omissions of other professionals in the caregiver stream,⁵ these studies suggest that most negligent and/or incompetent acts committed by physicians nationwide and California alike each year escape state medical board scrutiny.

We lack survey evidence specific to California about the degree to which the public is well-informed about the Medical Board's regulatory role. A 2006 national survey, however, found low levels of public knowledge about state medical boards.⁶ Those findings suggest that enhanced public education and outreach activities are justified in support of the Board's public protection mandate.

- **Consumers likely would benefit from policy changes that would expand and lengthen public disclosure and Internet display of a variety of information about physicians' records, including malpractice payouts, MBC enforcement actions, and MBC citations and fines.**

Public records generally are available in perpetuity to inquiring members of the public. Current disclosure laws and regulations limit the MBC's Internet display of various public record documents to ten years or less. We show statistically that disciplinary and citation/fine histories of *at least* ten years' length are useful for forecasting the likelihood of future disciplinary actions against a physician. Additionally, we show that malpractice payout histories (judgments, arbitration awards and settlements reported to the MBC, whether disclosed to the public or not) are *directly* predictive of future disciplinary actions for five years and indirectly predictive for a longer time period.

- **Medical Boards in several other states, both large and small, provide considerably more accessible information about physicians on their Internet websites than does the MBC.**

The Board expects to roll out a new web service this fall that has the potential to greatly improve physician profile content and usability. At the time this report was written, the contents of the new physician profile displays had not been finalized. Our statistical model demonstrates that a number of biographical facts about physicians not currently displayed on the MBC's Internet physician profiles, such as gender, age, specialty board certification and graduate training are useful for predicting the odds a physician will face MBC enforcement actions in the future.

- **The MBC has not emphasized analytical research strategies that could support its enforcement strategies.**

The MBC is required statutorily to report summary statistics on its annual case loads and performance but is not specifically required to conduct any statistical

analysis of its data. For several years prior to the 2003 budget cuts, the Board employed a Medical Director who contributed original research on the correlates of disciplinary action against licensed physicians. The Board possesses a wealth of data on licensed physicians that could be better used in support of the MBC's public protection mandate.

Finally, the report offers a series of policy options by which the Board could improve its capacity to fulfill its primary mission to protect the public. Table 1 on the following page presents those policy options in brief.

The remainder of this report is organized as follows. The second section provides background on the MBC and its current policies regarding public disclosure about physician behavior. In the third section, we review the empirical literature on public disclosure in the context of basic information economics theory as applied to the regulation of medical practice.

Fourth, we compare the MBC's practices to those of medical boards in other states. Fifth, we present and discuss a statistical model of one major aspect of disciplinary proceedings against physicians. The goal of the model is to validate and extend existing research findings on the biographical and historical factors that can be used to forecast the odds of future disciplinary proceedings against individual physicians. Finally, the report discusses in more detail the policy options (listed in Table 1) for improving public access to information about physician misconduct in California.

Table 1: Policy Options in Brief

1. Add a “public disclosure” component to the Medical Practice Act’s list of the Medical Board of California’s (MBC) responsibilities in Business and Professions Code Section 2004.
2. Standardize the MBC’s statutory disclosure requirements across different outlets (e.g., Internet vs. in-person or in-writing requests), including requiring permanent disclosure of past disciplinary actions, citation/fine actions, administrative actions, and malpractice judgments, arbitration awards and settlements.
3. Direct the MBC to expand and revise its Internet physician profiles to better conform to *current law*, e.g. displaying specialty board certification and postgraduate training information.
4. Direct the MBC to investigate and *provide summaries* of those investigations to the public for each reported malpractice judgment, arbitration award and settlement.
5. Direct the MBC to study ways to enhance public outreach in order to better identify cases of potential physician misconduct.
6. Direct the MBC to require physicians to notify patients that complaints about care may be submitted to the Board.
7. Direct the MBC to expand information provided on its Internet physician profiles to include additional biographical data, including age, gender and training.
8. Direct the MBC to provide on its Internet physician profiles links to evidence-based, physician-level performance information provided by external organizations, such as the California Physician Performance Initiative.
9. Direct the MBC to sponsor and publish research projects based on the contents of the Board’s complaints, discipline, public disclosure and licensing databases.
10. Direct the MBC and the California Board of Registered Nursing to develop methods for sharing and publicizing information about supervisory relationships between physicians and nurse practitioners.
11. Encourage the Board to improve public access to and utility of Board-provided information, such as establishing a web log (“blog”) to provide notices of disciplinary actions now distributed via an email notification service to subscribers.

Source: CRB, 2008.

BACKGROUND

The Medical Board of California (MBC) underwent sunset review in 2002. In May of that year, the Joint Legislative Sunset Review Committee issued its final recommendations, including recommendations about public disclosure policies at the Board. Recommendation #3 stated that it

*believes that the Board's current disclosure policy, including the information available on its web site, does not accurately reflect whether an individual physician has a past history that could very well influence the decision a person may make regarding which physician they choose for their health care. For example, the Board's current web site does not disclose to the public categories of information available, and considered important, by the Board, medical malpractice insurers, HMOs and hospitals for investigation and disciplinary purposes, underwriting purposes, and liability exposure purposes, respectively.*⁷

In response, the Legislature passed SB 1950 (Figueroa), Chapter 1085, Statutes of 2002, which provided for the appointment of an independent “enforcement monitor” to conduct a comprehensive review of the MBC. The Enforcement Monitor’s subsequent reports made various recommendations with respect to public disclosure laws and regulations, some of which were adopted by the Legislature in SB 231 (Figueroa), Chapter 674, Statutes of 2005. Subsequently in SB 1438 (Figueroa), Chapter 223, Statutes of 2006, the Legislature instructed the California Research Bureau (CRB) to conduct this study of the Board’s public disclosure policies and to present policy options for improving public access to Board data about physician misconduct.

The MBC is the primary governmental source for licensure, disciplinary and malpractice information regarding physicians in the state. The Board is a semi-autonomous, occupational licensing agency located within the Department of Consumer Affairs. Its main function is oversight of medical doctors (“M.D.s,” also known as allopathic physicians and surgeons, as opposed to Doctors of Osteopathic Medicine, who are regulated by the Osteopathic Medical Board of California).⁸

In this section we overview the Board’s functions and current policies and practices regarding public disclosure about physician behavior.

The MBC is governed by a non-salaried, 15-member board, 13 of whom are appointed by the governor, with one each appointed by the Senate Committee on Rules and the Speaker of the Assembly, respectively.⁹ Board members are appointed to four-year terms of office. Eight members must be licensed physicians, four of whom must also hold faculty appointments in clinical departments of approved medical schools within the state. Seven are “public members,” and may not be licentiates of the MBC. Hence, none of the Board members may be licensed in any of the allied medical professions regulated by the Board, although public members may be licensed by other state boards that oversee medical professions, such as nursing.¹⁰

The Board had a budget of \$52.7 million for fiscal year 2007-08, entirely financed through fees. Physician and Surgeon licensing fees are \$805 for biennial renewal.¹¹ The Board is authorized for approximately 265 full-time equivalent positions.¹²

THE MEDICAL BOARD DISCIPLINARY PROCESS

The MBC's two primary functions are licensing and discipline. The large majority of its annual budget is dedicated to the disciplinary process, including Enforcement Operations (\$20.9 million in FY 2006-07) and Legal & Hearing Services (\$13.8 million in FY 2006-07).

Enforcement consists of five stages: complaint receipt and initial review in the Central Complaint Unit (CCU); field investigation; the Citation and Fine Program, for relatively minor violations; the accusation process, including "plea-bargained" stipulated decisions, as well as formal Administrative Hearings and any subsequent appeals to the Medical Board; and a penalty implementation phase.

Complaint Receipt and Initial Review

Current law¹³ states that the MBC's authorities include

*(a) Investigating complaints from the public, from other licensees, from health care facilities, or from a division of the board that a physician and surgeon may be guilty of unprofessional conduct. The board shall investigate the circumstances underlying any report received pursuant to Section 805 within 30 days to determine if an interim suspension order or temporary restraining order should be issued. The board shall otherwise provide timely disposition of the reports received pursuant to Section 805.*¹⁴

(b) Investigating the circumstances of practice of any physician and surgeon where there have been any judgments, settlements, or arbitration awards requiring the physician and surgeon or his or her professional liability insurer to pay an amount in damages in excess of a cumulative total of thirty thousand dollars (\$30,000) with respect to any claim that injury or damage was proximately caused by the physician's and surgeon's error, negligence, or omission.

(c) Investigating the nature and causes of injuries from cases which shall be reported of a high number of judgments, settlements, or arbitration awards against a physician and surgeon.

These provisions authorize but generally do not require the MBC to conduct formal investigations of complaints from the public and from statutory reporters such as court clerks, county coroners, malpractice insurers and hospital administrators.

The MBC is mandated¹⁵ to maintain a "central file" or database of information on licensees and their individual histories, including:

- Criminal convictions that would constitute “unprofessional conduct.”
- Any malpractice judgment or settlement requiring payment of more than \$3,000 in damages. Somewhat confusingly, current law requires MBC licensees and/or their insurers to report judgments and arbitration awards in *any amount* and settlements *exceeding \$30,000*¹⁶ and obligates court clerks to report malpractice judgments exceeding \$30,000.¹⁷ The Board’s data collection and disclosure practices conform to these latter reporting requirements.
- Every public complaint filed against the physician, although complaints deemed “without merit” are to be purged after five years.¹⁸
- “Section 805” disciplinary information. The mandate to investigate Section 805 reports within 30 days refers to peer review reports and disciplinary actions by healthcare facilities (e.g., hospitals and clinics), such as denial or loss of hospital staff privileges.

The Medical Board receives complaints filed by members of the public as well as a variety of governmental agencies and other statutorily-mandated reporters, such as malpractice insurers. We obtained complete extracts of the MBC complaints, disciplinary and licensing databases at the end of March 2008. The summary statistics presented in this report are drawn from our analysis of those data and from MBC annual reports.

The complaints database included 191,577 complaint cases dating from 1949, although 90 percent of the cases were opened in 1991 or later.¹⁹ Since 2000, 78.6 percent of physicians in our data have zero complaints on record, while 1.4 percent have five or more complaints filed against them in the period. During the January 2000-March 2008 period, the MBC received 68,310 complaints against licensed physicians. Of these, 42,478 (62.2 percent) originated from members of the public, e.g., patients or their families. An additional 9,875 complaints (14.5 percent) were attributed collectively in the MBC’s database to “B&P Mandated Reports,” originating from medical malpractice insurers, court clerks, coroners’ offices or Health Care Facility peer review bodies; as well as physician self-reports of malpractice judgments, arbitration awards and settlements, and criminal convictions.²⁰ Within this category, 80-85 percent of the complaints (roughly 10-12 percent of those filed in the period or about 900-1,200 per year) arose from malpractice reports by insurers, employers or the physicians themselves.²¹

The Medical Board identified itself as the third largest source, accounting for 5,066 complaints during January 2000-March 2008 (7.4 percent), followed by complaints arising from the actions of other state medical boards (2,724, or 4.0 percent). The MBC commonly identifies itself as the source of a complaint when staff uncover additional potential violations in the course of investigating a complaint. For example,

*When an investigator is looking into a case, she will often run a ... check on all civil malpractice actions filed against the subject physician ... and may find additional victims ... who have not filed a complaint with the MBC, whereupon the investigator will initiate a new complaint....*²²

Current law requires the Central Complaint Unit (CCU) to refer Quality of Care (QC) cases to a medical consultant for initial review of patients' relevant medical records.²³ Complaints classified as Quality of Care are those which allege that the patient care and treatment provided by the physician was negligent and/or incompetent.²⁴ Since 2004, 49.5 percent of complaints received against physicians have been classified upon receipt as QC complaints.²⁵ The CCU Procedure Manual specifies that once all requested information has been received from the subject physician in a QC complaint, staff are to refer the case to a medical consultant for review.²⁶ According to MBC data, about 20 to 27 percent of complaints received each year are referred to a medical consultant after initial case processing by CCU staff.

On average, more than 80 percent of all complaint cases received each year by the MBC were terminated in the CCU by Board staff without disciplinary or administrative action (e.g., a citation, fine or educational letter), including more than 90 percent of public complaints. Such cases may be "Closed, Non-jurisdictional," "Closed, No Violation," "Closed, Insufficient Evidence," or "Closed, Information on File."²⁷ Case files for Non-jurisdictional complaints (two to eight percent of complaints received per year since 2000) and "No Violation" complaints (24 to 33 percent of complaints received each year since 2000) are purged from MBC records one year after receipt.

A further 2.3 percent of complaints filed during that period were designated as "Closed, Compliance Obtained." These are non-Quality of Care cases in which staff identified and subject physicians took corrective action on relatively minor (and correctable) violations of the law, such as "complaints involving advertising, providing medical records to patients, signing death certificates timely, etc."²⁸ These records are purged five years after receipt.

The "Insufficient Evidence" and "Information on File" complaint closures (17 to 35 percent of complaints received during 2000-07) were complaints for which staff found "merit" in the complaint but determined there was insufficient evidence to forward the complaint to field investigation. The CCU Procedure Manual appears to reserve the latter category for complaints that may be deficient in some way but indicative of a possible violation – e.g., anonymous complaints. In either situation, case files are purged five years after receipt.²⁹

This substantial rate of "Closed with merit" complaint terminations likely reflects the MBC's high statutory standards for taking disciplinary action against licensed physicians. Current law specifies that the MBC "shall take action against any licensee who is charged with unprofessional conduct," which specifically includes "gross negligence," "repeated acts of negligence," and "incompetence."

"Repeated acts of negligence" is defined in the statute as "two or more negligent acts or omissions."³⁰ Incompetence is defined in case law to mean absence of qualifications, ability or fitness to perform a prescribed duty or function.³¹ A single "simple" departure from the generally recognized standard of care for a patient generally would be insufficient to warrant disciplinary action against a physician by the MBC under these standards. Because current law requires "with merit" complaints that do not lead to

disciplinary or administrative action by MBC to be purged after five years, a single act of ordinary negligence that arises more than five years after the receipt of a preceding, single act would not trigger disciplinary action by the MBC. Further, because current law requires these case file purges, the MBC is constrained in its ability to *test* as to whether the five-year standard significantly affects public safety.

Finally, under current law if the MBC takes no formal action in a complaint, specific information about the complaint is regarded as confidential and therefore may not be disclosed to the public.³² Hence, the public cannot learn of the 1,400 to 4,100 complaints that were terminated in the CCU each year during 2000-07 as closed “with merit.”

Field Investigation

During 2000-07, 14 to 23 percent of complaints received each year ultimately were referred for field investigation. In this stage, each case is assigned a professional investigator, who is a trained peace officer. Field investigators collect additional information on cases, including, in many cases, interviews with patients and subjects. Quality of Care cases then are reviewed by a physician “expert reviewer.”

The MBC during 2000-06 “closed without merit” between 14 percent and 25 percent of field investigation cases each year. It “closed with merit” another 31.8 percent of field investigation cases in that period.³³

Citation/Fine Program

Cases in which staff determine at either the Central Complaint Unit phase or the field investigation phase that a licensee has committed only lesser violations may be dismissed outright or referred to the Citation and Fine Program for administrative action in lieu of prosecution. During 2000-04, 15 to 24 percent of field investigation cases were closed each year by referral to the Citation and Fine Program. That proportion has dropped to only one to three percent since 2005. Instead, cases are being referred to the Citation/Fine Program at the CCU stage – three to five percent of *all* complaints each year during 2005-07, compared to none in prior years.

This shift in referral practices has resulted in little to no net change in the overall proportion of complaints resulting in citations and fines each year. MBC staff explain that the large majority of citation/fine cases involve non-Quality of Care violations – usually failures to provide change-of-address information in a timely fashion. Formerly, these cases were recorded administratively as having been referred for field investigation, then re-referred immediately to the Citation/Fine Program.

Accusations, Hearings and Penalty Implementation

Cases for which strong legal and medical evidence is established in field investigation are referred to the Attorney General for preparation of formal charges, known as an “Accusation.” On average, 13 to 23 percent of field investigations were referred to the Attorney General during 2000-07 according to MBC data.

Of the 7,000 to 12,000 complaints the MBC received each year during calendar years 2000-2007, between 220 and 324 per year resulted in accusations.³⁴ Of these, approximately half resulted in license revocations or surrenders, with most of the balance resulting in probation and/or public reprimand. Another 300 to 400 complaints resulted in citations and/or administrative fines. MBC staff note that most fines resulted from physicians who failed to provide change of address information in a timely fashion. These administrative actions appear minor; however, we demonstrate below that physicians with past citations and fines have significantly higher odds of facing an accusation in future years than do physicians without citation/fine histories.

Each year, the Federation of State Medical Boards (FSMB) – of which the MBC is a member – publishes a *Summary of Board Actions* report. It counts state medical board disciplinary activities and implicitly compares across states via a “Composite Action Index” (CAI). The index is a “weighted average of disciplinary actions taken against physicians practicing in a state, as well as all physicians licensed by that state. Actions affecting physicians’ licenses, such as revocations and suspensions, are weighted more heavily in a state’s CAI.”³⁵

While the FSMB cautions that these index scores are meant primarily for comparing disciplinary performance over time within states (because state definitions of disciplinary actions vary), comparing across states is an obvious extension. Averaging over 2002-06, the MBC ranked 37th of 62 boards for which we were able to compute a mean Composite Action Index score. That is, almost 60 percent of state boards were ranked as taking more (and/or more serious) disciplinary actions per licensee per year than did the MBC.

PUBLIC DISCLOSURE/OUTREACH ARE NOT FORMAL “RESPONSIBILITIES” UNDER THE MEDICAL PRACTICE ACT

As noted in the Board’s 2008 *Strategic Plan*, the MBC “is mandated to make public protection its first priority.”³⁶ In order to fulfill this mandate, the Board is responsible for licensing and regulating the behavior of some 125,000 allopathic physicians and surgeons licensed or seeking license to practice medicine in California.

The Medical Practice Act assigns nine specific, statutory responsibilities to the Board in Business and Professions Code Section 2004(a)-(i):

- (a) The enforcement of the disciplinary and criminal provisions of the Medical Practice Act.
- (b) The administration and hearing of disciplinary actions.
- (c) Carrying out disciplinary actions appropriate to findings made by a panel or an administrative law judge.
- (d) Suspending, revoking, or otherwise limiting certificates after the conclusion of disciplinary actions.

- (e) Reviewing the quality of medical practice carried out by physician and surgeon certificate holders under the jurisdiction of the board.
- (f) Approving undergraduate and graduate medical education programs.
- (g) Approving clinical clerkship and special programs and hospitals for the programs in subdivision (f).
- (h) Issuing licenses and certificates under the board's jurisdiction.
- (i) Administering the board's continuing medical education program.

The Medical Practice Act specifically identifies as “responsibilities” of the Board neither public education about the MBC’s functions nor public disclosure of the Board’s disciplinary actions and other regulatory activities.

Historically, the MBC has executed its responsibility for post-licensing review of the quality of medical practice reactively. As stated by MBC President Dr. Richard Fantozzi, M.D., “The Medical Board is complaint-driven; we do not show up at hospitals or physicians’ offices absent complaint information brought to our attention.”³⁷

The burden of initial identification of potentially negligent or incompetent physicians thus lies primarily with the general public. The MBC depends heavily on patients and their families to initiate the investigative process. It follows that the MBC’s efficacy in protecting the public rests in significant part on the degree to which Californians understand what the MBC is and how it functions.

The MBC’s 2008 Strategic Plan identified “increased public awareness of the Board’s Mission, activities and services” as one key organizational goal. That plan specifically identified as an objective of its public education efforts to “improve education about the Board and its services including obtaining information on physicians.” It specified that success would be measured by “high levels of satisfaction reported by consumers who access educational material and other information on the Board’s Web site.”³⁸ The MBC’s website includes links to two examples of a quarterly “Performance Measure/Indicator Report” from 2003 and 2004, respectively. These documents provided some – somewhat dated – evidence on consumer utilization of MBC services and patient satisfaction with complaint processing and resolution, but do not address the broader question of consumer awareness of the Board’s services and function.

How aware are Californians of the MBC? We lack California-specific public opinion data with which to assess the level of public awareness of state medical board responsibilities. The MBC has not conducted or sponsored any survey instruments with which to measure either public awareness of the MBC or the effectiveness of the MBC’s public outreach efforts. Nor does the MBC’s current Strategic Plan identify public opinion surveys as a means of measuring its progress toward satisfying the key objectives identified in its public education strategic goal.

A 2006 national survey found that only 21 percent of respondents reported being “extremely confident” or “very confident” that they “could get information about the number of disciplinary actions taken against a doctor or hospital.” Conversely, 45 percent replied they were “not too confident” or “not at all confident” that they could obtain this information.³⁹ These data raise questions as to the level of public awareness of state medical boards generally, but cannot directly address the degree to which Californians are familiar with the MBC.

In one of a series of 2002 newspaper articles critical of the Board, the *Orange County Register* noted that

Everyone from lobbyists for physicians to Medical Board officials says the state board can do a better job of letting people know there is a place to turn if they've been harmed by a doctor.

More than 100 readers contacted The Orange County Register after the publication Sunday (April 7, 2002) of an investigation of the Medical Board's handling of patient complaints.

Many readers suggested that the board require doctors to post notices in their offices about how to reach the board. They also suggested it advertise in phone books alongside physician ads and require doctors to give out pamphlets explaining complaint procedures.⁴⁰

The Board does not require physicians to provide patients with information about the Board, including information about its disciplinary role. Business and Professions Code Section 138, adopted as part of SB 2238 (Committee on Business and Professions) in 1998, required all boards within the purview of the Department of Consumer Affairs (DCA) to “initiate the process” of adopting regulations requiring licensees to notify their clients that they are licensed by the state. The Board has neither adopted nor proposed such regulations.⁴¹ The Senate Rules Committee staff analysis of SB 2238 stated that a major purpose of the provision was to “streamline and improve state regulatory activity by ... notifying consumers where complaints against DCA licensees can be filed.”⁴²

In response to inquiries about this issue, the MBC deputy director stated that “In 1999, the DCA legal office opined that Healing Arts Boards did not need to adopt regulations to implement” the statute because Business and Professions Code Section 680 provides for notice.⁴³ That code section, added in 1998 with passage of AB 1439 (Granlund), requires that each healthcare practitioner

shall disclose, while working, his or her name and practitioner's license status, as granted by this state, on a name tag in at least 18-point type. A healthcare practitioner in a practice or an office, whose license is prominently displayed, may opt to not wear a name tag.

Business and Professions Code Section 138 specifies that

A board shall be exempt from the requirement to adopt regulations pursuant to this section if the board has in place, in statute or regulation, a requirement that provides for consumer notice of a practitioner's status as a licensee of this state.

This exemption applies to the MBC in light of Business and Professions Code 680. However, the Assembly floor staff analysis of AB 1439 indicated that the legislative intent of the Business and Professions Code 680 notice requirement was for identification of the healthcare provider – particularly nurses – rather than notification with respect to where complaints could be registered. The staff analysis stated:

The author reports anecdotal cases where inappropriate healthcare practitioners dispensed medical treatment. The author believes it is important for patients to be informed regarding a healthcare practitioner's medical training and certification.

...

The California Nurses Association (CNA) states that patients have been shocked to find that they assumed the person, dressed in white, taking vital signs and recording other pertinent medical information in urgent care and emergency settings was a registered nurse, when in fact, they later found out that the person was an unlicensed caregiver with no medical training. CNA reports the same problems occur with home health agencies and school nurses.

The American Nurses Association California states that this bill will prevent confusion caused by unlicensed people calling themselves "nurses" and the public then believing that the state of California has licensed them.⁴⁴

Similarly, the Senate floor analysis for AB 1439 states:

Sponsored by the California Nurses Association and the American Nurses Association, California, this bill is intended to ensure that licensed healthcare practitioners are readily identifiable to patients, colleagues and others.⁴⁵

Both bills were passed by the Legislature at the end of August 1998. The staff analyses for neither bill references the other. This seems to suggest that the requirements of Business and Professions Code 138 were not intended merely to be duplicative of those of Business and Professions Code 680.

The notification requirements currently enforced by the MBC under Business and Professions Code 680 fall considerably short of recommendations made by the Medical Board of California Enforcement Program Monitor in 2004 and again in 2005. The Enforcement Program Monitor position was created by law in 2002, appointing Julianne D'Angelo Fellmeth to evaluate the disciplinary system and procedures of the MBC.⁴⁶ According to the Enforcement Program Monitor's final report,

many other regulatory agencies – including healthcare-related agencies – require their licensees to provide customers or clients with information about their licensing board.... However, the Medical Board has never imposed a similar requirement on physicians.⁴⁷

The MBC's informal response to the Enforcement Program Monitor's recommendation reflected concerns about cost and efficiency. Board members argued that staff "can barely keep up with its current caseload, and have expressed concern about the capability of MBC's enforcement program to handle the surge of patient complaints which may result if MBC imposes a similar requirement on physicians."⁴⁸ D'Angelo Fellmeth has raised this issue repeatedly in MBC quarterly meetings. In response, the MBC's deputy director has indicated that the issue of patient notification is one "the Board will be looking into again, to determine the necessity of some sort of posting or notice to patients regarding the Medical Board."⁴⁹

Medical Board public information staff engage in outreach to consumers via the media and make copies of press releases and Public Service Announcements available on the Board's website (via the "Media Room" link under the "About the Board" tab). The Board also distributes notification of press releases and PSAs via its email notification services. Additionally, the MBC engages in various other public outreach activities, such as appearances at health fairs and other consumer-oriented events (about 10-12 per month, according to MBC staff). It does not buy advertising time on television or radio.

The MBC publishes a quarterly newsletter (available for download on its website), which includes a statement from the Board president; notices about disciplinary actions; occasional practice-related feature stories; short news items that typically are geared toward the interests of license holders; and listings of contact information for Board members and staff. The MBC recently replaced the hard-copy publication of its "Hot Sheet" monthly summary of enforcement actions with an email notification and distribution service to members of the public who ask to be included on the mailing list. This change resulted in increased distribution of the "Hot Sheet" information to just over 3,000 subscribers today from fewer than 150 hard-copy recipients.

The Medical Board maintains a toll-free telephone contact number to the Consumer Information Unit for "License Verification, General Licensing, Application and Complaint Information." It designates the same toll-free contact number for consumer access to the Central Complaint Unit.⁵⁰ MBC staff received 71,378 calls from the public to the Consumer Information/Complaint Line during Fiscal Year 2006-07.

The Board does not offer a web log ("blog") service on its website for providing public notice of its activities, although it lists "Recent Publications" in a "Highlights" section on the MBC home page. A website for displaying "Hot Sheet" summaries could further expand awareness of MBC enforcement actions in the general public. Many government entities have established blogs as part of their public outreach efforts. Examples include the Congressional Budget Office; the U.S. Department of Health and Human Services; the Center for Disease Control and Prevention's Director of Health Marketing; the U.S. Department of Defense's Military Health System; and the California State Library.

The Enforcement Program Monitor in 2004 assessed the MBC's public outreach activities to be competent but limited by "budget and staffing limitations."⁵¹ The MBC is funded almost entirely through licensing fees (see above, pp. 5-6).

STATUTORY DISCLOSURE REQUIREMENTS ARE INCONSISTENT

The Medical Board's statutory disclosure requirements are complex and inconsistent, and the MBC's own regulations at times appear to be in conflict with statutory requirements. The conflicts largely reflect the fact that, according to MBC staff, the Board has not undertaken a comprehensive effort to "clean up" its regulations in light of various changes to statutory disclosure requirements in recent years.

As a guide to the public, the Board publishes on its Internet site a Public Disclosure Information document.⁵² The MBC also posts an informational introductory page in its License Lookup system that explains what is and is not available in physician profiles. State law *requires* the Board to collect and disclose certain information about physicians and disciplinary actions to members of the public, *prohibits* the Board from disclosing certain other information, and leaves yet other information disclosure to the Board's discretion. Disclosure requirements vary depending on whether a request is in person/in writing, or via telephone or Internet query.

Basic disclosure requirements are stated in Business and Professions Code Section 803.1. Disclosure via the Internet is per Business and Professions Code Section 2027, which incorporates the disclosure requirements of Section 803.1 by reference, but with some limitations not applicable to inquiries made in person or by mail. Further, Business and Professions Code Section 2227 states that Board matters involving a finding of fault by an Administrative Law Judge, default judgment or stipulated decision shall be a part of the public record with the exception of:

warning letters, medical review or advisory conferences, professional competency examinations, continuing education activities, and cost reimbursement associated therewith that are agreed to with the division and successfully completed by the licensee, or other matters made confidential or privileged by existing law... .

Public letters of reprimand are made part of the public record by Business and Professions Code Section 2233. Additional disclosure policies can be found in California Code of Regulations, Title 16, Sections 1354.5 (Requirements for information disclosure); 1355.31 (Definitions relating to reporting of settlements); 1364.15 (Public disclosure and record retention for citations and fines); and 1364.21 (Public disclosure of public letters of reprimand).

Tables 2-4 below detail three groups of Medical Board information disclosure practices. The listings are not exhaustive, but cover all major enforcement actions and disclosure practices specifically enumerated in law or regulation. Table 2 identifies items that are available indefinitely regardless of the origin of the request. Table 3 lists items for which public availability is limited regardless of origin of the request and Internet availability may or may not differ from in person/written requests. Table 4 lists disclosure items that are available indefinitely to members of the public who request the information in writing or in person, but are posted for only a limited period (usually ten years) on the Internet. In

each case, we identify statutory law and/or regulatory language cited by the Medical Board as authority.

Table 2: Indefinite Information Disclosure Regardless of Request Type

- Felony convictions, including the nature of the conviction, date, sentence if known and the court of jurisdiction [Section 803.1; Internet disclosure under Section 2027 and California Code of Regulations 1354.5(e)].
- Hospital disciplinary actions based on medical disciplinary cause and resulting in termination or revocation of a physician's staff privileges [so called "805" reports; Section 803.1; Internet disclosure under Section 2027(a)(6)], unless those privileges are restored (in which case, Internet disclosure is limited to ten years, as noted in Table 4).

Source: CRB compilation, 2008. All code references are to Business and Professions Code unless otherwise noted.

Table 3: Limited Information Disclosure Regardless of Request Type

- Misdemeanor convictions (*ten year Internet disclosure* if the conviction results in disciplinary action or an accusation, under Section 2027; there is no specific requirement for disclosure of misdemeanor convictions to inquiring members of the public otherwise; the MBC interprets Section 2027 to apply to all disclosures of misdemeanor convictions).
- Withdrawn accusations (one year disclosure to the inquiring public, California Code of Regulations 1354.5(b); *no Internet disclosure*; the MBC cites Sections 2027(a)(4) and 2027(b) as authority, but neither specifically addresses disclosure of withdrawn accusations).
- Citation orders (*five-year public and Internet disclosure*, citing California Code of Regulations 1364.15). The Board defines citation orders administratively to be outside of "enforcement actions." This determination appears to be in conflict with Section 803.1(a)(5), which specifically includes "Infractions, citations, or fines imposed" as enforcement actions requiring *indefinite disclosure* to the public. Under this latter interpretation, *ten-year Internet disclosure* would then be required by Section 2027.

Source: CRB compilation, 2008. All code references are to Business and Professions Code unless otherwise noted.

**Table 4: Indefinite Disclosure for In-Person/In Writing Requests,
But Limited Internet Disclosure**

- Enforcement actions against a physician by the Board, including temporary restraining orders, interim suspension orders, revocations, suspensions, probation, public reprimands, citations, fines, etc. [Section 803.1(a)(1)-(5); California Code of Regulations (CCR) 1354.5(b); *ten year Internet disclosure* under Section 2027]
- Accusations filed by the Attorney General that have not yet been dismissed, withdrawn, settled or closed via a final decision (CCR 1354.5(b), citing Sections 803, 803.1 and 2018; *ten year Internet disclosure* under Section 2027).
- Civil judgments and arbitration awards *in any amount* against a physician not reversed on appeal (whether vacated or not by a subsequent settlement) (Section 803.1(b)(1); *ten-year Internet disclosure* under Section 2027). CCR 1354.5(c) conflicts, stating that judgments *in excess of \$30,000* are subject to disclosure.
- Board-ordered education course or examination, whether or not an associated accusation is withdrawn (Section 803.1; *no Internet disclosure*, citing Section 2227(b); this statute appears to bar *any* disclosure of these items associated with a Board decision, however, not just Internet disclosure).
- All malpractice settlements reported to the Board if the licensee has settled more than a threshold number of cases for more than \$30,000 each within the preceding ten years (Section 803.1(b)(2); *ten year Internet disclosure* under Section 2027).⁵³ No dollar amounts are reported (see below).
- Dismissed accusations (the MBC cites Government Code Section 11517(d), which makes all Board decisions part of the public record; *no Internet disclosure*, citing Section 2027(a)(4), which *requires* disclosure of active accusations but does not specifically bar Internet disclosure of non-active accusations).
- Terminated or revoked hospital staff privileges *that subsequently are restored* (Section 803.1 does not distinguish between restored and unrestored privileges; *ten-year Internet disclosure* under Section 2027).
- Summaries of terminated/revoked hospital staff privileges (Section 803.1(b)(6); *no Internet disclosure*, although Section 2027(a)(9) appears to require ten-year disclosure).

Source: CRB compilation, 2008. All code references are to Business and Professions Code unless otherwise noted.

Current law appears to give the Board some discretion over disclosures in categories where indefinite or specific time-period disclosure is not specifically mandated. Business and Professions Code Section 803.1(d) states that the Board

may formulate appropriate disclaimers or explanatory statements to be included with any information released, and may by regulation establish categories of information that need not be disclosed to an inquiring member of the public because that information is unreliable or not sufficiently related to the licensee's professional practice.

California law is particularly complex with respect to malpractice settlement information. Business and Professions Code Section 800(a)(2) specifies that the MBC is to maintain records of each settlement and judgment in which the licensee or his insurer paid more than \$3,000 in damages. Yet physician and insurer settlement *reporting requirements*, as well as MBC public disclosure requirements, hinge on whether the licensee or his insurer paid more than a threshold number of settlements exceeding \$30,000.

If a physician whose specialty is neurological surgery, obstetrics, orthopedic surgery, or plastic surgery (“high-risk” specialties as defined in California Code of Regulations (CCR) Section 1355.31) has paid four or more settlements in excess of \$30,000 each within the preceding ten years, the Board is required to disclose all reported settlements and whether each was “above average,” “average” or “below average” in size, relative to all (reported) settlements paid by practitioners in the same specialty area. Average is defined in CCR 1355.31 as within plus or minus 17 percent of the arithmetic mean-reported settlement payment within the licensee’s specialty for the preceding ten year period. Those average dollar amounts are not reported, however.

Similarly, for physicians in all other specialty areas, if the physician has paid three or more settlements in excess of \$30,000 each within the preceding ten years, the Board is to disclose all reported settlements. Again, the Board is required to report only whether each settlement was above average, below average or average for the physician’s specialty, but not the actual dollar amounts nor what the average is.

Current law requires physicians or their insurers to submit specialty information as part of their required reporting of malpractice settlements and judgments to the Board.⁵⁴ The Board is required to put settlement information into context by, among other requirements, “Reporting the total number of licensees in that specialty or subspecialty, the number of those who have entered into a settlement agreement, and the percentage that number represents of the total number of licensees in the specialty or subspecialty.”⁵⁵ Currently, specialty information is provided on Internet physician profiles only for physicians who have exceeded the threshold number of settlements for public disclosure.

Statutory law also states a legislative determination that “it is necessary to collect data concerning the status and scope of practice of California's licensed physicians” in order to address a healthcare access crisis within the state.⁵⁶ Consistent with that requirement, for the last seven years the Board has asked physicians to report upon license renewal any approved specialty board certifications they may hold and/or the physician’s area(s) of

specialization. Board certification in a specialty is not required to practice in that specialty area. The Board is required to disclose to inquiring members of the public and on its Internet website physicians' current American Board of Medical Specialties (ABMS) certifications (or other approved specialty board certifications) and approved post-graduate training,⁵⁷ but has not to date added that information to its online physician profiles.

THE PHYSICIAN LICENSE LOOKUP SYSTEM

The Board discloses basic descriptive information about licensees on its publicly-accessible Physician License Lookup system maintained by the Department of Consumer Affairs (DCA), with web access at <http://www.medbd.ca.gov/lookup.html>. This system, hosted on the DCA's computer system, assembles display information pulled from the Board's licensing and public disclosure databases, which are stored on Department of Technology Services data center servers. Additionally, the Board maintains a separate database of scanned public-record documents relating to the Board's administrative actions against current and prospective license holders.

For technical reasons, users must search the licensing and public records databases separately. However, Board staff indicate that a new web service, scheduled for rollout during fall 2008, will integrate public document links into the physician profiles. This system should greatly simplify public access to information about physician misconduct.

The introductory page to the License Lookup web interface provides a detailed listing of the information available to the public via a physician's profile. Similarly, the Board details the information *not* available from these physician profiles, as listed in Table 5⁵⁸:

Table 5: Information <i>not</i> available on the MBC License Lookup System	
<ul style="list-style-type: none"> • Complaints made to the MBC. • Misdemeanor convictions reported to the MBC prior to January 1, 2007; and conviction of a misdemeanor after January 1, 2007 that did not result in a disciplinary action or an accusation being filed by the Board. • Investigations conducted by the MBC. 	<ul style="list-style-type: none"> • Some medical malpractice information, such as pending or dismissed cases. "This information may be available at the local county courthouse in the "Civil Index." <p>[Each county maintains its own civil index. The Medical Board does not provide links to the various county court Internet websites, although many provide Internet-searchable indexes.]</p>
Source: http://www.medbd.ca.gov/lookup.html .	

Users may search by physician name, license number, and/or city or county of the physician's address of record or a combination thereof. The search result displays physicians' names, license numbers and addresses of record in alphabetical order for physicians fitting the search criteria. The user then may select a single physician's record by clicking on the link to his or her name, which results in display of the following:

- The licensee's name, license type ("Physician and Surgeon") and number, license status (e.g., "License Renewed and Current"), a notification as to whether any public record actions are on file, original license issue date, license expiration date, and address of record.
- A Public Disclosure section, listing required disclosures or "No Information Available" under various subheadings.
- An Education section, listing the licensee's medical school and year of graduation.
- A statement indicating when the data on the page was last updated.
- A disclaimer statement from the Department of Consumer Affairs.

Statutory law mandates disclosure of current specialty board certification and approved postgraduate training.⁵⁹ These data have not yet been incorporated into the License Lookup system.

Current law further specifies that the Board *shall* "provide links to other Websites on the Internet that provide information on board certifications" and that the Board *may* "provide links to other Websites on the Internet that provide information on healthcare service plans, health insurers, hospitals, or other facilities" as well as "other sites that would provide information on the affiliations of license physicians and surgeons."⁶⁰ The Board currently provides a link to the American Board of Medical Specialties (ABMS) website, but for technical reasons that link has not been incorporated into the License Lookup profiles. The ABMS provides to the public free lookups of specialty board certification information on individual physicians.

Board staff indicate that they expect to roll out a new web service during fall 2008 to replace the current License Lookup system. This new service will include additional biographical information in physician profiles, although the precise contents of the profiles have not yet been finalized. The Board is in negotiations with the ABMS to provide consumers direct access to board certification reporting information.

COMPLAINTS RECEIVED BY THE MEDICAL BOARD FALL FAR SHORT OF ESTIMATES OF ADVERSE EVENT-RELATED INJURIES

The public has shown an increasing demand for information about physician quality. Traffic on the Medical Board's Internet physician profile service grew to 7.5 million "hits" in Fiscal Year 2006-07, up 17 percent compared to the previous year.⁶¹

Is the public well served by the Medical Board's current information disclosure practices? The adequacy of public disclosure hinges on both the quantity and the quality of the data made available. A successful public disclosure program would report data that helps members of the public draw valid inferences about the qualities of interest of individual physicians.

The Joint Legislative Sunset Review Committee stated in its 2002 report that

*A public program of disclosure that purports to provide information a patient might find relevant about the history and record of a physician, but which for whatever reason falls short, is worse than no disclosure program at all.... An inadequate program of public disclosure leads a patient into an incorrect belief that no further investigation of their physician is warranted.*⁶²

Consumers need not know *everything* about a physician in order to make a reasonable assessment of the physician's likely suitability for their interests. Rather, they need accurate and relevant information. Accuracy has two components: *veracity* (truthfulness) of reported information; and *representativeness*. Relevance has to do with the "power" of the inferences that may be drawn by an individual about a physician by incorporating a bit of information into the individual's evaluative process.

- **Representative information** is a sample of a physician's status and history sufficient to consistently and accurately predict other, unsampled aspects of the physician's status and history. Does the information draw a clear picture of the physician's important attributes and past behavior?

But, consumers are not interested in histories *per se* when choosing a physician. Rather, they are interested in predicting whether a particular physician will serve their medical needs successfully in the future.

- **Relevant information** about a physician is data on the physician's status and history that can be used to consistently and accurately predict the physician's future status and behaviors of interest.

In this subsection, we consider the degree to which current MBC disclosure policies satisfy the "representativeness" criterion. We turn to the question of relevance in the following sections.

How representative are MBC enforcement data? We address this question by applying insights from leading empirical research on the incidence of "adverse events" in medical care to estimate the rate at which such events occur in California. We then compare those hypothetical rates to the observed rates of quality of care complaints received by the Medical Board. Adverse events are defined as "injuries that result from care provided in a hospital, in contrast to injuries that stem from the patient's disease or condition."⁶³

It is important to bear in mind that the empirical studies incorporated here estimated adverse medical care events in hospitals, regardless of whether a physician was directly responsible for the harm done to a patient. Not all medical mistakes are committed by

physicians. However, according to a study published in 2000 of 15,000 randomly sampled hospital admission cases in Utah and Colorado, 46 percent of the adverse events in their sample were attributable to surgeons, 23 percent to internists, and only 1.7 percent to nursing staff and emergency physicians.⁶⁴

The following estimates of hospitalization-related error rates fold together errors from all sources, including physicians, nurses and pharmacists, as well as “systemic” errors attributable to combinations of actors. Nonetheless, physicians very often are at least nominally responsible for the overall management of a patient’s care.

Empirical studies estimate that adverse events arise in roughly 2.9-3.7 percent of hospital stays and *negligent* adverse events arise in nearly one percent of hospital stays.⁶⁵ These estimates are based on independent, expert reviews of randomly selected patient records from participating hospitals in New York, Colorado and Utah, respectively. The New York state study, begun in 1984, was extensively critiqued by scholars, which allowed the Utah/Colorado study scholars to refine their techniques before collecting their data in 1992. Both studies reached very similar conclusions about the rates at which adverse events – particularly, *negligent* adverse events – arise in hospitalization cases.

Extrapolating from those studies to the approximately four million patients admitted in 2007 by California hospitals, we can estimate that Californians experience 116,000-148,000 adverse hospital events per year, resulting in 7,600 to 20,000 deaths.⁶⁶

These projections are dramatically higher than officially reported statistics in California. Official Center for Health Statistics figures attributed only 322 deaths in 2006 cumulatively to medical errors (or “medical misadventure,” as it is sometimes phrased).⁶⁷ The Center for Health Statistics figure is comparable to official statistics in Florida, which report between 92 and 141 deaths per year statewide each year 1997-2006 from “Medical & Surgical Care Complications.”⁶⁸ Florida’s population is about half that of California. However, newer data collected from California hospitals under SB 1301 (Alquist, 2006) reported about 1,200 healthcare provider-induced deaths in the last year – four times the number previously reported, which raises significant questions about the accuracy of the prior data. Even so, one national hospital safety expert quoted in the *Los Angeles Times* deemed the new estimate to be improbably low.⁶⁹

Another conservative estimate of medical errors can be derived from county coroners’ reports. Current law states

*When a coroner receives information that is based on findings that were reached by, or documented and approved by a board-certified or board-eligible pathologist indicating that a death may be the result of a physician's or podiatrist's gross negligence or incompetence, a report shall be filed [with the appropriate Board].*⁷⁰

These so-called “802.5” filings measure reporting of particularly consequential, suspected medical errors (and may overlap somewhat with other reported categories of medical error-related deaths). Coroners appear to be quite conservative in attributing

deaths to medical misadventure only when they judged the errors to have led directly to the patient's death. For example, the Broward County (Florida) Medical Examiner's 2000 annual report stated that

*Errors in medical treatment rarely directly result in death.... Deaths complicated by errors in treatment are not included. In such cases, it is not often clear if the individual would have survived given their underlying condition if no errors were committed.*⁷¹

Statewide, the MBC received only 22 coroner's reports in fiscal year 2006-07 and only 11 in FY 2005-06. By way of comparison, the Allegheny County (PA) Medical Examiner's office reported an average of 14 medical misadventure deaths per year during 1998-2003.⁷² Allegheny County, which includes the city of Pittsburgh, has a population roughly equivalent to that of Sacramento County. If Allegheny County's experience were representative of California's, we would have expected California county coroners to file about 400 Section 802.5 reports per year to the Medical Board, roughly 20 times the number actually reported by California county coroners each year. Conversely, Broward County, Florida, which includes Ft. Lauderdale and has a population about 23 percent larger than that of Sacramento County reported three medical misadventure deaths in 2000, the latest data available. Applying the 2000 Broward County rate to California would imply that we would have expected to see about 70 coroner's reports per year – more than triple the observed rate. We have no evidence on which to judge the relative plausibilities of the three cases. Nonetheless, the reported California figures appear to be quite conservative, to the point that the legislatively appointed Enforcement Program Monitor made improving public outreach to mandated reporters a point of emphasis.⁷³

We regard the extrapolated figures on hospital adverse events and adverse event-related deaths to be much more representative of the actual situation in California as those figures are based on independent, expert reviews of medical records rather than the self-reports of regulated entities, such as hospitals, which have strong incentives to be conservative in their identification of medical errors occurring in their facilities. The New York, Colorado and Utah studies on which our extrapolations are based were conducted by independent scholars who had no incentives to over- or under-report adverse events, and whose methods have been extensively vetted in the scholarly community.

Medicine is a complex discipline and the standards of care evolve constantly. Hence, medical experts deem that most adverse events in healthcare are not the result of negligent or incompetent care. Extrapolating from the scholarly studies in New York, Colorado and Utah would suggest that approximately 33,000-40,000 Californians suffer injury and 3,000-10,000 die due to *negligent* hospital care each year.⁷⁴

These figures imply that the *average* risk of suffering from a negligent medical error in a hospital is roughly 0.12 percent per year. To put this figure into perspective, the risk of a woman under age 50 getting breast cancer in a given year is about 0.1 percent.⁷⁵ Alternately, these figures imply that the annual risk of death from negligent medical error (0.008-0.03 percent of population) in California is between 2.5 and ten times that of death from a workplace accident (0.003 percent of workers in 2005).⁷⁶

It appears that preventable, even negligent medical errors rarely lead to formal complaints either in California or nationwide, either through malpractice lawsuits, patient complaints to Medical Boards, or legally-mandated reports from other entities, such as hospitals and county coroners. The Medical Board of California since 2000 routinely has received:⁷⁷

- *Fewer than 4,000 Quality of Care complaints per year* from the public.
- *Fewer than 1,000 Malpractice Reports per year* from insurers, courts, or other sources, such as physician self-reports (these reports are mandated by Business and Professions Code Sections 801.01 and 803).
- *Fewer than 150 Health Facility Discipline reports per year* against physicians for medical cause or reason (these reports are mandated by Business and Professions Code Section 805).
- *Fewer than 20 Coroner's Reports per year* of deaths possibly related to medical error during 2003-07 (these reports are mandated by Business and Professions Code Section 802.5). These numbers are consistent with the number of deaths per year due to "Misadventures to Patients in Medical, Surgical Care, Sequalae" reported by the Department of Health's Center for Health Statistics.⁷⁸

The Enforcement Program Monitor's *Final Report* suggested that the Board and Department of Consumer Affairs have taken steps to improve outreach to mandated reporters. Data for 2007-08 are not yet available, but data from 2006-07 do not demonstrate any improvement in mandated reporting attributable to those efforts. Reports received that year based on legal requirements were essentially unchanged from 2005-06, both in absolute terms and as a percentage of all complaints received.⁷⁹

The Medical Board's regulatory approach is predicated *primarily* on reacting to complaint reports from patients and statutory reporters. If a patient does not file a complaint against a physician, the Board has very little prospect of identifying an instance of negligent or incompetent care committed by that physician.

These data strongly imply that the Medical Board's current strategies for uncovering and disciplining physicians responsible for negligent care are not adequate to inform the public about physician misconduct. The Board receives complaints on less than one in 20 California-licensed physicians each year and prosecutes less than one out of 200 licensees each year. In contrast, adverse events data imply that the rate at which physicians cause one or more hospitalized patients harm each year is much higher. Additionally, a recent *New York Times* article, citing newly published research, asserted that medical errors or adverse events occur in roughly one out of every four patient visits to family practice physicians.⁸⁰

One alternative regulatory approach would be to conduct medical record audits. A number of scholarly studies have found that "generic screening criteria" for identifying hospitalization records likely to reveal evidence of a medical error are feasible and

inexpensive.⁸¹ Generic screens long have been used by Peer Review Organizations for identifying quality problems in hospitals. MBC staff caution that obtaining patients' consent for access to their medical records would be a major impediment to effective MBC utilization of this strategy.

The contrast between adverse events research findings and historical rates of complaints filed and disciplinary actions taken against physicians suggest that individual physician-level disciplinary data currently provided by the MBC to the public may not be highly representative of physicians' actual histories. A thorough assessment of this question requires further analysis, some of which we present in a later section in our examination of the Board's complaints database.

PROCESSING “PUBLIC” COMPLAINTS IS COSTLY

Non-representative complaints data constitutes a danger to public welfare to the extent that patients unwittingly subject themselves to treatment by physicians they would not have chosen had they been fully informed about the physicians' respective patient-outcomes histories.

Complaints data – and, by extension, disciplinary data – could be made more representative through a number of means. All of these means would require a greater expenditure of resources on public outreach, investigations and enforcement by the Board. How expensive would it be for the Board to collect more representative complaints data?

Data obtained from MBC staff, the Enforcement Program Monitor, and the 2002 Sunset Review Report of the Joint Legislative Sunset Review Committee indicate the following:

- One in eleven complaints filed by members of the public (i.e., patients and their families) is referred by the Central Complaint Unit for field investigation. The average, per-case cost for CCU case uptake is \$678, including acquisition of medical records and three hours of review by a medical consultant.
- According to MBC annual reports, slightly more than one in three field investigations (36 percent) are referred to the Attorney General for prosecution. The average, per-case cost for field investigation was \$6,094 in 2000-01 (\$7,529 in current dollars).
- The average cost of prosecutions and hearings was \$14,827 per case in 2000-01 (\$18,319 in current dollars).

The per-prosecution and per-investigation average costs of increasing the numbers of complaints received may be calculated using these 2000-01 cost benchmarks and 2005-07 average “yields” on cases.

Complaints filed by members of the public tend to be “low yield” compared to those filed by statutory reporters, such as hospitals, malpractice insurers and the court system. Board

data indicate that 19.7 percent of complaints received were referred for field investigation during 2001-06. Given that only nine percent of complaints filed by members of the public are referred by the CCU for formal investigation and that public complaints have constituted about 60 percent of all complaints recently, this implies a field investigation referral rate of about 36 percent for non-public source complaints, including mandatory reports.

All else constant, these costs and referral rates imply that the CCU expends approximately \$1,900 for every mandatory report-generated case referred to the field, compared to \$7,100 for each referral from complaints filed by members of the public. This, again, is because the CCU processes many more complaints per field investigation referral for public complaints than for complaints from other sources.

The Board prosecutes about one in every 30 complaints from the public, closing two in the field and 27 in the CCU. Hence, the average cost to the Board of one additional prosecution generated from newly received public-source complaints would have been approximately \$53,071 (\$61,246 in 2008 dollars),⁸² exclusive of any additional public outreach costs the Board would incur to generate more complaints. Thus, to double the number of prosecutions per year solely through increased complaints from the public, the MBC likely would need to spend about an additional \$19 million per year on complaint processing, field investigations and prosecutions. This would constitute an expenditure increase of about \$150 per licensed physician (\$190 per *fee-paying* physician) per year without factoring in additional overhead costs.

In contrast, the Board prosecutes about four of every 30 non-public complaints, closing seven in the field and 19 in the CCU. These rates imply an average cost to the Board of approximately \$43,366 (2008 dollars) per additional prosecution stemming from added non-public complaints, exclusive of additional public outreach costs.

The MBC has taken some steps to improve reporting by mandatory reporters, such as court clerks and county coroners. Additionally, the Enforcement Program Monitor recommended requiring physicians to inform patients about the Board, its jurisdiction and its contact information, consistent with the intent of Business and Professions Code 138. Such notice could be expected to induce an increase in complaints filed by members of the public, although the magnitude of that increase is unknown.

Focusing only on the marginal costs to the Board of processing, investigating and prosecuting cases implies that the public safety mandate of the Board is served only by identifying and prosecuting likely violators of the Medical Practice Act. It is unclear what, if any, *deterrent effect* on physician behavior would be created by Board strategies to increase the volume of complaints filed, particularly by members of the public.

One significant potential source of additional public complaints is malpractice Notice of Intent filings, which attorneys were required to report to the Board prior to the passage of SB 231 (Figueroa), effective January 1, 2006. Prior to FY 2003-04, the Board classified NOIs as complaints but gave only pro forma attention to those complaints, routinely closing them in the CCU on the date received. The Enforcement Program Monitor's

Initial Report recommended that the practice be discontinued because counting those cases as closed complaints distorted Board statistics on processing time.⁸³ We return to this issue in the discussion of Policy Options.

The Logic of Public Disclosure at the Medical Board of California

This study was mandated by SB 1438 (Figueroa), which directed the California Research Bureau to study the public disclosure laws and regulations at the Medical Board of California (MBC) in order to better understand how disclosure about physician behavior can affect public health. The Board is *required* by law to make certain, limited information about physicians and physician misconduct accessible to the public. It is *barred* by law from revealing other information it possesses about physician misconduct.

In between lies a wide array of information – some of which currently is being collected by the Board and some of which is not – that *could be* provided to the public but at present is not being provided. At issue, then, is how much, if any, additional information the Board should provide and whether any current legislative mandates requiring or barring disclosure should be modified. Some questions include:

- How might changes in the public provision or presentation of information by the Medical Board about physicians and physician misconduct (or alleged misconduct) affect physician behavior and the public interest?
- Could public safety be improved by greater disclosure of instances of physician misconduct? At what point in the disciplinary process would disclosure best serve the public? At what levels of (alleged) misconduct severity would greater disclosure be most useful?
- Could additional information about physician misconduct overwhelm consumers and be misunderstood, thereby reducing public safety?
- Does the MBC provide sufficient *analysis* of its public disclosure data to serve the public interest adequately?

This section defines and briefly discusses the key analytical issues and research findings surrounding public disclosure of data about physician behavior and performance and its impact on public protection. Key issues include how changes in public disclosure might affect

- (a) incentives for physicians to change their behavior;
- (b) incentives for “bad” physicians to leave practice, for “good” physicians to continue in practice, and for consumers to seek out medical care;
- (c) the ability of consumers to construct accurate and useful assessments of the physician choices they face when seeking healthcare.

Arguments about the effects of information in health markets largely fall into three general categories: moral hazard, adverse selection, and cognitive or “health literacy”

limitations. The first two have to do with knowledge and expertise gaps between healthcare providers and patients. The third implies that patients may fall short of an idealized capacity to *process* information about healthcare. All can be viewed as forms of market failure, implying opportunities for government intervention to improve public welfare.

MORAL HAZARD

Moral hazard is the threat that an actor who is insulated from the consequences of risky behaviors will behave differently than if he/she bore the full risk of those choices. A classic example is how improvements in automobile safety features in the 1960s and early 1970s failed to reduce traffic-related deaths significantly, presumably because drivers became more reckless or drove faster.⁸⁴

Moral hazard in healthcare can arise from insufficient oversight – the patient not knowing *what* the physician is doing that could adversely affect his or her welfare. It can also arise from a lack of patient expertise – the patient not knowing *why* a physician has taken a particular course of action. In this context, the key issue is whether a physician will always act to the best of his or her ability in the patient’s interests even when the patient is unable or ill-equipped to monitor and fully understand the physician’s actions.

- For example, the Medical Board’s recently terminated Physician Diversion Program allowed for confidential referral and treatment of impaired physicians. Self-referral to the program could be seen as acting in the best interest of patients. Advocates for treatment programs for impaired physicians have argued that public disclosure would deter physicians from seeking treatment for substance abuse or mental health problems, thus reducing or delaying discovery. If true, public disclosure of physician impairment could, perversely, increase patients’ risks.⁸⁵
- Physician organizations have complained of incentives to practice “defensive medicine” – i.e., over-supplying medical services to patients to ward off potential grounds for subsequent malpractice suits. For example, every diagnostic test carries with it the risk of a “false positive” result and/or direct harm from the test itself (e.g., the risk of fetal damage from amniocentesis or cancer from X-rays or CT scans). Hence, defensive over-prescribing of diagnostics can lead to costly, unnecessary and potentially harmful treatment.

Potential remedies for moral hazard problems in medicine focus on public disclosure requirements of physician misconduct, third-party oversight and evidence-based standards of care. If key benchmarks about physician conduct can be identified and reporting of those benchmarks mandated to patients or to a third-party motivated to protect patients’ interests, the threat of moral hazard can be diminished in the physician-patient relationship.⁸⁶

ADVERSE SELECTION

Adverse selection focuses on the characteristics of the healthcare provider – such as clinical talent and knowledge – rather than on discretionary actions. It arises when one party to a (potential) exchange holds private information that, if revealed, would change the price of the exchange or change the less-informed party's willingness to participate. For example, patients rationally prefer high-quality caregivers to low-quality ones, all else constant. Ignorance about caregiver quality opens the door to adverse selection problems. The principal adverse selection problem of interest is whether lack of public information about physician competence prevents competition for patients from driving “bad doctors” out of the healthcare market.

Adverse selection is likely to arise in situations in which:

- (a) outcomes are “noisy,” so that patients find it difficult to distinguish between good (bad) treatment and good (bad) luck;
- (b) multiple ailments manifest very similar sets of symptoms, so that patients find it difficult to distinguish between good (bad) diagnostic skills and good (bad) luck;
- (c) healthcare providers cannot or will not use pricing or other credible mechanisms to signal quality differences, so that patients can make informed choices about the quality of care they are willing to purchase.

Economists distinguish between “search goods” and “experience goods.”⁸⁷ A “search good” is one whose relevant properties are evident upon inspection prior to consumption. The quality and fit of clothing generally is apparent before purchase, for example.

In contrast, the properties of “experience goods” are hidden from the prospective buyer. One famous example is the market for used cars. Because buyers cannot easily distinguish between “cream puffs” and “lemons,” owners of high-quality cars are discouraged from trying to sell their vehicles, while owners of low-quality ones are drawn to the market.⁸⁸ Some modern used car dealers have overcome this problem in part by offering “certification” programs – express and implied warranties of quality.

Patients have to “experience” treatment by a physician in order to learn whether the treatment works, because diagnosis is often difficult and individual responses to treatments vary. Experience goods often are evaluated indirectly prior to purchase, based on prices and on the reputation of the provider.

Reputations are summaries of information about the provider's past performance. If patients cannot easily obtain information about a physician's reputation, how will physicians and patients behave? The primary implications of the literature on adverse selection in healthcare are first, that low-quality providers likely will persist in the marketplace. Competition with high-quality providers will fail to weed out poorer performers. Further, if low-quality providers enjoy a cost advantage over high-quality

ones, patients' inability to distinguish between providers on quality will attract entry from low-quality, low-cost providers and discourage high-quality, high-cost providers, just as used-car markets tend to attract "lemons" absent other regulation.

Second, patients who lack knowledge about preferred alternatives may be deterred from changing doctors and seeking better care. Economists generally assume consumers to be risk averse. That is, they must expect to be made significantly better off by changing providers in order to justify the hassle and risk of making the change. Patient reluctance to change doctors amplifies the negative effects of adverse selection problems in healthcare. The healthcare marketplace, which for many patients restricts choices to a limited set of medical providers, may exacerbate this problem.

Third, a persistence of hidden, low-quality caregivers in the marketplace might deter consumers from seeking medical care, particularly at early stages of illness or injury. Some deterred patients will get better on their own, while others will not. The net effect of patient doubts about the quality of care they will receive on public health and safety thus is uncertain.

As with the moral hazard case, the identification and reporting of performance benchmarks are key remedies to problems of adverse selection. Equipped with appropriate measures of provider quality, consumers can be expected to exercise choice. They likely would avoid low-quality providers or induce those providers to lower their prices in order to retain business.

QUALITY OF CARE PROXY INDICATORS AND PHYSICIAN PROFILES

Interest in quality measurement in healthcare has grown dramatically in recent years. A variety of organizations now sponsor physician rating websites that purport to help patients make informed choices.⁸⁹ But what information actually helps?

In recent years, two major organizations have published evaluations of state medical board physician profiling systems: the Federation of State Medical Boards (FSMB), and the consumer advocacy group, Public Citizen.

FSMB Physician Profile recommendations

The FSMB describes itself on its website as "a national nonprofit organization representing the 70 medical boards of the United States and its territories." Its Special Committee on Physician Profiling issued a report adopted as policy by the Federation in April 2000, which recommended a standardized list of 20 data elements that state medical board physician profiling systems might display.

The FSMB committee specifically recommended that display of malpractice histories be limited to ten years. It recommended against time limitations for criminal convictions, but made no recommendations with respect to time limitations for other data categories. Additionally, the committee report considered but did not recommend in favor of a

number of other data elements sometimes provided on state medical board physician profiles. The FSMB data categories are listed below in Table 6.

Table 6: Physician Profile Recommendations of the FSMB	
FSMB RECOMMENDED DATA ELEMENTS	CONSIDERED BUT NOT RECOMMENDED
Licensee name and gender	Office contact info
License number	Licensure in other states
License status	Hospital affiliations
License type	Insurance plans accepted
License original issue date	Medicare/Medicaid accepted
License renewal date	Translating services
Business address/practice site	Peer review
Age/birthdate	Initial complaints to the State Board
Medical school	Involvement in diversion program
Medical school graduation year	Practice setting
Medical degree	Examination type
Postgraduate training	Basis of licensure
Type of practice	Appointments to medical school faculties
Board certifications	Professional publications
Criminal convictions	Awards
Malpractice history	Professional or community service
State Board discipline	
Discipline by other states	
Hospital actions	
<i>Source: Federation of State Medical Boards, 2000.</i>	

In the report, the FSMB committee stated that “Despite the sense of increasing demand for information by consumers, the FSMB committee found no studies or market research regarding what consumers want to know about physicians.”⁹⁰ That deficiency has since been corrected to some degree. According to a national survey conducted in 2006, 64 percent of respondents reported that knowing the number of complaints or malpractice suits filed against a doctor, medical practice or clinic would tell them “a lot” about the quality of the service provider.⁹¹

In a separate survey, also conducted in 2006, only 21 percent of respondents reported being “extremely confident” or “very confident” that they “could get information about the number of disciplinary actions taken against a doctor or hospital.” Conversely, 45 percent replied they were “not too confident” or “not at all confident” that they could obtain this information.⁹²

These study results suggest that consumers nationwide desire greater access to information about physician disciplinary, malpractice and performance histories. Further, they seem to imply that consumers are unaware that they can, in many cases, obtain much of this information from their respective state medical boards.

The FSMB report was critical of disclosure practices at some state boards, particularly those that allow physicians opportunities to self-report information. However, the FSMB provided little or no evidentiary basis for their specific recommendations, despite evident concern that some elements popular with the public, such as malpractice histories, may be misleading.

Public Citizen’s Ranking of Medical Board Websites

The public interest group Public Citizen first issued a survey and ranking of state medical board Internet information disclosure in 2000 and has since updated the report twice, most recently in October 2006. Public Citizen uses a letter grading scheme for board websites, in which they grade six categories of information:

- Types of Doctor-identifying Information (Name; Year of Birth; Address of Record; License Number; License Status; Type of Practice; Specialty Board Certification);
- Medical Board Disciplinary Action Information, including actions taken by other state boards;
- Disciplinary Actions Taken by Hospitals;
- Disciplinary Actions Taken by the Federal Government (Medicare, Drug Enforcement Administration, and Food and Drug Administration);
- Malpractice Information; and
- Criminal Conviction Information.

The study also collected two categories of “user friendliness” indicators for the websites. The group then asked two experts in the field independently to assign weights to the different categories and to the items within each category to produce a scoring rule. On this 100-point scoring system, the Medical Board of California’s website scored a 68 to rank seventh. The highest-scoring board was the New Jersey State Board of Medical Examiners (83.7), while the lowest was the North Dakota State Board of Medical Examiners (12.3). The median score was 42.4.

Again, however, the evidentiary basis for including or excluding specific data elements was slight or nonexistent in Public Citizen’s report.

Empirical Predictors of Disciplinary Action

Two major studies of the correlates of physician discipline have been published in the last decade, both on data provided by the Medical Board of California.

Morrison and Wickersham (1998) conducted a matched case-control study,⁹³ in which they identified all 375 instances of disciplinary action taken against physicians in California between October 1995 and April 1997. They then compared the characteristics of those physicians to two control groups: one matched on location (city cited in the licensees’ address of record), and a second matched on location, gender, and type of practice (“training, patient care, administration/research, retired or otherwise inactive”).⁹⁴

Morrison and Wickersham found that the disciplined cases were significantly more likely to be male and to be directly involved in patient care, compared to their location-controlled sample. Compared to their second control group, disciplined physicians were older and less likely to be specialty board-certified in one or more area of specialization.

Their results must be viewed as only preliminary and suggestive, in significant part because they employed a statistical technique (a stepwise procedure for inclusion/exclusion of explanatory variables) viewed with suspicion by many econometricians. Thus it is important to look to the second study for confirmation.

The second study, by Kohatsu, Gould, Ross and Fox (2004) was an unmatched case-control study of 890 physicians disciplined by the Board between July 1, 1998, and June 30, 2001. At the time the study was conducted, lead author Dr. Neal Kohatsu was the Medical Director of the Board.⁹⁵

Rather than matching the disciplined physicians against a “control” sample selected on some control characteristic, in this design the cases are compared against a fairly large (2,981) random sample of all nondisciplined licensees. The randomly-selected control sample in this study thus had the advantage of representing the full diversity of nondisciplined physicians licensed in California. In contrast, the matched case-control design is more focused, and therefore more limited, as to the differences it can in principle identify between two samples.

Kohatsu et al., confirmed the Morrison-Wickersham findings that male gender, increased age, and a lack of specialty board certification all were significantly associated with

increased risk of disciplinary actions. Additionally, they found evidence that international medical school education also was associated with an increased risk of discipline.

A limitation of both studies is that each is cross-sectional in design. That is, the studies examine the characteristics of physicians who have been disciplined at some point in time. They do not *forecast* future disciplinary actions. Patients may care about physician histories per se, but their greater need is to find a doctor who will give them quality medical care in the future.

A third, recent study partially addresses the issue of disciplinary dynamics. Grant and Alfred (2007) examined 1994-2002 physician discipline data from the Federation of State Medical Boards. They split their sample into two periods, 1994-98 and 1999-2002, respectively, and classified physicians by whether they had no sanctions in a period, or had been assessed with one or more mild sanctions, medium-severity sanctions or severe sanctions. They excluded reciprocal actions by other states as well as non-prejudicial actions.⁹⁶

They found that 99.2 percent of the nearly 885,000 physicians in their national data were assessed no sanctions in either period. Less than one out of every hundred physicians in their study unsanctioned during 1994-98 was assessed a disciplinary action during 1999-2002.

In contrast, physicians sanctioned during the earlier period were much more likely to be assessed additional sanctions in the second period. One in five physicians assessed a “severe” or “medium” sanction in the first period was re-sanctioned in the latter period. One in ten physicians assessed a “mild” sanction in the first period was re-sanctioned in the second period. These findings strongly imply that disciplinary histories provide patients with important information about the likely qualities of different physicians.

Two Studies of Malpractice Data

In addition to these studies of disciplinary actions, a number of scholarly studies of medical malpractice have been published. Two stand out as perhaps most relevant to understanding the value of malpractice disclosure policy.

Ely, et al. (1999) studied family physicians who practiced in Florida at any time between 1971 and 1994, modeling the rate of malpractice claims paid per year of practice per physician. They found that domestic medical education (a degree from an accredited medical school in the United States or Canada), specialty board certification, and receipt of one or more of a set of recognition awards were associated with higher risks of paying malpractice claims. The authors speculated that their results indicated that higher quality doctors served a sicker and therefore higher-risk clientele.

The Ely, et al., study thus calls into serious question the predictive utility of reporting physicians’ malpractice payout histories. The second study reiterates this concern with considerable force. Adams and Garber (2007) analyzed hypothetical state medical board disclosure policies, using empirical estimates of the probabilities of various medical outcomes drawn primarily from the Harvard Medical Practice Study. Their study

suggests that disclosures of malpractice settlements and claims payments may be highly misleading to the public. This is due to three facts.

- Medical errors are relatively rare events, occurring in roughly two to four percent of hospitalizations according to empirical studies, and provider negligence is responsible for patient injury in perhaps only one-third of those cases.
- Patients *who are injured by provider negligence* (as assessed by independent, retrospective review of the medical records) rarely (less than one in 20) file suit.
- Patients who are not injured or who very likely did not suffer *significant* injuries constitute the overwhelming majority of all patient-physician interactions. These patients occasionally file suit and win settlements or claims.

Together, these three facts lead to the conclusion that provider payouts in malpractice cases *per se*, are easily misinterpreted. The probability estimates are summarized below in Figure 1, which shows the estimated distribution of malpractice case results by medical outcome, based on Adams and Garber's (2007) Base-Case Mean Probability Model.

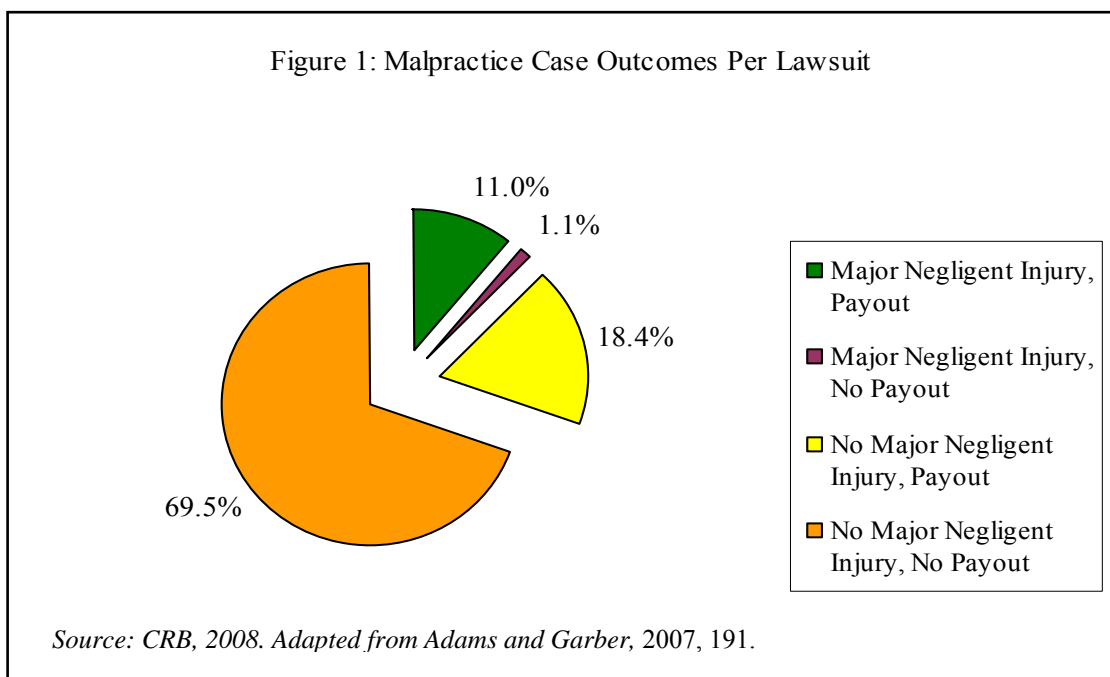


Figure 1 partitions malpractice cases into four categories, based in large part on the Harvard Medical Practice Study's independent assessments of hospitalization records, combined with a separate study of malpractice payments and medical outcomes in New Jersey⁹⁷:

- The patient suffered a major injury due to provider negligence, as judged by independent medical experts not involved in the lawsuit, and received a payout

from the lawsuit via settlement or court judgment (11 percent of malpractice cases; 14.1 cases per 100,000 hospitalizations).

- The patient suffered a major injury due to negligence, as judged by independent medical experts, but received no payout despite filing suit (1.1 percent of malpractice cases; 1.4 cases per 100,000 hospitalizations).
- The patient was not injured, suffered a major injury despite appropriate care, as judged by independent medical experts, or received negligent care without a major injury resulting; *and* received a payout from the lawsuit via settlement or court judgment (18.4 percent of cases; 23.6 cases per 100,000 hospitalizations).
- The patient was not injured, suffered a major injury despite appropriate care, as judged by independent medical experts, or received negligent care without a major injury resulting; and received *no payout* despite filing suit (69.5 percent of cases; 88.9 cases per 100,000 hospitalizations).

Adams and Garber’s analysis thus implies that payouts in cases lacking independent evidence of major negligent injury (“false positives”) outnumber by 1.6-to-one payouts where there was a major negligent injury (defined as an injury resulting in death or requiring six or more months of recovery time). This illustrates one of the key points often pressed by healthcare providers who oppose greater public disclosure of malpractice histories. Inferences about physicians’ past incompetence or malfeasance from the observation of a malpractice payout often will be wrong.

Omitted from the figure are an estimated 414.5 cases per 100,000 hospitalizations in which the patient suffered a major injury due to provider negligence but *no lawsuit was filed*. These “false negatives,” in which major harm due to negligence did occur but there was no malpractice payout, would be expected to outnumber correctly classified negligence cases by *30 to one*.⁹⁸

The implications for public disclosure from these malpractice studies are three-fold. First, malpractice filings may be a function of the types of patients treated by different physicians as well as the relative performances of the physicians. A physician whose practice serves primarily “high-risk” patients may be more likely to be sued than one who serves a lower-risk set of patients, all else constant.

Second, if medical boards fail to report context, such as whether a board investigation found (or did *not* find) evidence of negligence in a malpractice payout case, consumers may draw invalid inferences about past physician competence or performance from disclosures of malpractice settlements or claims paid. If summaries of all malpractice cases investigated by the Medical Board, more than 60 percent of cases with payouts likely would be identified as not resulting from negligent or incompetent performance by the physician. Adding a summary of Medical Board investigative findings to malpractice reports could substantially improve the quality of malpractice information available to consumers.

Third, these studies leave unanswered whether past malpractice payouts are predictive of physicians' future performance. That is, the raw malpractice payout data may not be very *representative* of past performance, but still could be *relevant* for understanding future odds of quality care. We return to this question in our analysis of the MBC's database below, where we find that past malpractice payouts are significantly predictive of future MBC disciplinary actions.

COGNITIVE LIMITATION

The above discussion raises the third theoretical concern with disclosure policies.

Cognitive limitations refer to the capacity of consumers to make use of available information – in this case “health literacy.”⁹⁹ This problem focuses not on ignorance, but rather on a shortage of effective analytical tools available to healthcare consumers.

Health information often is presented in language or formats difficult for the average consumer to organize and understand. According to a 2004 report from the National Academy of Sciences' Institute of Medicine, nearly half of all adult Americans “have difficulty understanding and acting upon health information.”¹⁰⁰

Health literacy is a critical concern in formulating public disclosure policies. Recent research has demonstrated, for example, that Medicare managed care enrollees who scored low on health literacy measures were significantly more likely to utilize in-patient medical services than were enrollees who scored high on the measures, controlling for a number of other risk factors.¹⁰¹ This suggests that poor health literacy correlates with higher demand for the most expensive class of healthcare services.

Even if full information about a healthcare service provider's expertise were transparently available, patients might not be willing or able to take full advantage of it because collecting, organizing and analyzing information is costly. In this perspective, providing factual data to consumers without an analytical context may have zero or even a negative effect on the quality of their choices in the marketplace.

PUBLIC DISCLOSURE

In all of the situations described above, a confused or poorly informed consumer is one who is less able to demand or identify quality service. If patients cannot identify and avoid low-quality producers, those producers will persist in the marketplace (adverse selection). If high-quality physicians cannot be recognized and rewarded, they will have fewer external incentives to maintain their quality (moral hazard). The development of a transparent model for relating performance benchmarks or physician characteristics to patient outcome quality is a principal means by which governments may promote the public interest in high quality medical care.

The deleterious effects of the knowledge gap between physicians and consumers can, *in principle*, be mitigated by the identification, provision and *explanation* of benchmark measures of physician quality. Consumers need effective rules of thumb for translating

small amounts of information into rank-orderings of available medical provider choices and a sense of the substantive differences between adjacent alternatives in the rankings. This means that they need ready access to easily-interpreted *comparative* data across physicians and to research that supports the utility of such data.

One prominent effort to develop evidence-based comparative quality measures under way in California is the California Physician Performance Initiative (CPPI). The CPPI is sponsored by the California Cooperative Healthcare Reporting Initiative, a collaborative effort of healthcare providers and health insurers.¹⁰² The project initially was funded by the federal Centers for Medicare and Medicaid Services (CMS). The CPPI is collecting a variety of individual physician-level quality measures that have been vetted widely by such prominent national organizations as the AQA and the National Quality Forum.¹⁰³ These data could be available to the public as early as 2009.

The best published research on the correlates of Medical Board disciplinary actions against physicians highlights physician gender, age and specialty board certification status as risk factors, although the absolute risk effects of these factors appear to be small. Malpractice payout data (judgments, arbitration awards and settlements) had not previously been tested for its predictive value. While malpractice payout data appears to be unhelpful to patients seeking to identify low-quality past performance by physicians, we demonstrate below that these data as well are predictive of the odds physicians will face enforcement actions in the future.

We next describe the practices of medical boards in other states disclosing information about medical providers, and the policies of regulatory agencies overseeing professions with similarly large expertise gaps between practitioners and consumers.

Medical Board Disclosure in Other States

The Massachusetts Board of Registration in Medicine was the first state medical board to provide physician profiles on line, in 1996. Since then, 65 of the 70 member boards of the Federation of State Medical Boards (FSMB) have developed web access to at least some physician information.¹⁰⁴

As noted above, the Federation recommends that physician profiles include 20 data elements. Our survey of state medical board physician profile services indicates the following levels of minimal compliance with those recommendations. Some states provide considerable detail in disciplinary categories, whereas others may only provide notice that a disciplinary action has been imposed.

Table 7: Compliance with FSMB Data Recommendations		
FSMB-Recommended Data Elements	State Boards Providing this Data	California
Licensee name	65	YES
Licensee gender	0	NO
License number	61	YES
License status	62	YES
License type	65	YES
License original issue date	61	YES
License renewal date	58	YES
Business address/practice site	59	YES
Age or birth date	13	NO
Medical school	36	YES
Medical school graduation year	36	YES
Medical degree ¹⁰⁵	See endnote 106	See endnote 106
Postgraduate training	20	NO
Type of practice	39	NO
Board certifications	24	NO
Criminal convictions	20	YES
Malpractice history	19	YES
State Board discipline	61	YES
Discipline by other states ¹⁰⁶	See endnote 107	YES
Hospital actions	15	YES
<i>Source: CRB, 2008.</i>		

The empirical research we reviewed above suggested that physician age, gender, medical school training, specialty board certification status and past disciplinary history all are important factors for understanding the likelihood a physician will receive future medical board disciplinary action. The MBC currently does not display age or gender information (neither of which is required by law) or specialty board certification information (which is required, but satisfied indirectly by the MBC, which posts a link to the American

Board of Medical Specialties website, where consumers can look up the statuses of individual doctors).

As we noted in the preceding section, public opinion data strongly support the inclusion of malpractice history information. Malpractice case payout information appears to be insufficient to identify a doctor with a history of having caused significant harm through substandard or negligent care. We demonstrate below in our statistical analysis that malpractice payout information has *predictive* power, however.

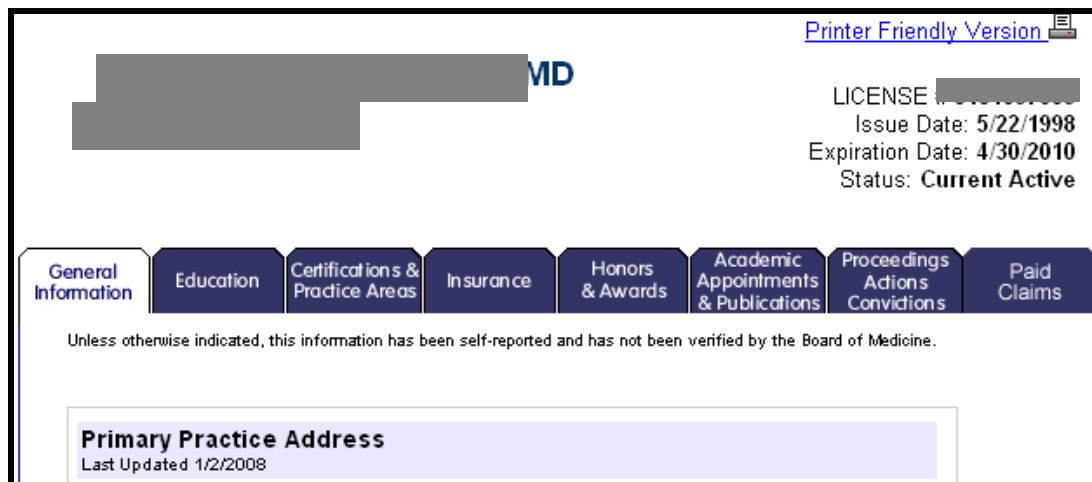
We also surveyed state physician profiles for inclusion of the additional data elements considered but not recommended by the Federation. Coverage of these data items is considerably thinner. For example, 16 state board profile systems report physician hospital affiliations; 11 report practice setting; eight report whether the physician accepts Medicare/Medicaid, and 12 report medical school appointments.

Additionally, four state board systems (North Carolina Medical Board; State Medical Board of Ohio; Tennessee Board of Medical Examiners; and the West Virginia Board of Medicine) display information about supervisory relations (e.g., with physician assistants and/or nurse practitioners). Business and Professions Code Section 2836.1(e) states that no California physician shall supervise more than four nurse practitioners at one time. Neither the Medical Board of California nor the California Board of Registered Nursing appears to track (or publish) supervisory relations between physicians and nurse practitioners.

MBC staff suggest that tracking this information would be very difficult logistically, and of dubious value because supervisory relations are subject to change on short notice, particularly in hospital settings. The growing utilization of nurse practitioners as front-line, primary care providers in clinics suggests nonetheless that this is a subject worth investigating further.

Public Citizen ranked state medical board websites on content and usability criteria in 2006. The organization ranked the Medical Board of California's website (including the physician profile component) seventh overall. The major differences between the MBC's ranking and that of the highest-ranked board website, the New Jersey Health Care Profile, maintained by that state's Division of Consumer Affairs, lie in presentation of hospital discipline information, malpractice information and search capabilities.

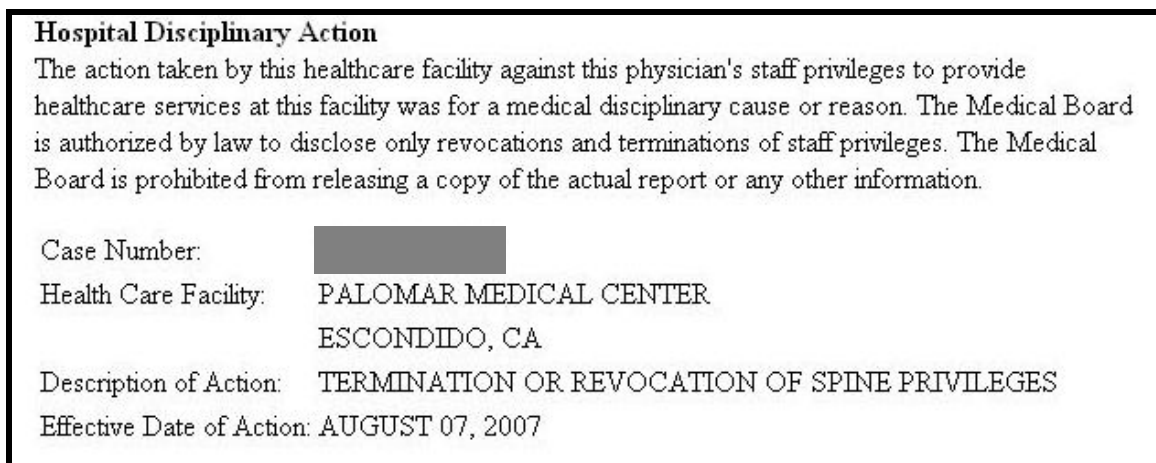
Figure 2: Screenshot of New Jersey Health Care Profile



The screenshot shows a web profile for a New Jersey health care professional. At the top left, there is a redacted name followed by 'MD'. To the right, there is a 'Printer Friendly Version' link. Below the name, the license information is displayed: 'LICENSE [redacted]', 'Issue Date: 5/22/1998', 'Expiration Date: 4/30/2010', and 'Status: Current Active'. A horizontal menu contains eight tabs: 'General Information', 'Education', 'Certifications & Practice Areas', 'Insurance', 'Honors & Awards', 'Academic Appointments & Publications', 'Proceedings Actions Convictions', and 'Paid Claims'. Below the menu, a disclaimer states: 'Unless otherwise indicated, this information has been self-reported and has not been verified by the Board of Medicine.' A section titled 'Primary Practice Address' is highlighted in light blue, with the text 'Last Updated 1/2/2008' below it.

New Jersey is one of only four state boards that reports a summary of each hospital disciplinary action against a physician. It is also one of four that reports the nature of the offense triggering the hospital action. California Business and Professions Code 803.1(b)(6) makes *summaries* of hospital disciplinary actions resulting in loss of privileges part of the public record. This provision is included by indirect reference in Business and Professions Code 2027(a)(9), requiring ten-year disclosure on the MBC's Internet website. The MBC reports only cursory information on these reports, however. See, for example, Figure 3 below.

Figure 3: MBC Internet Hospital Disciplinary Summary



The screenshot displays a 'Hospital Disciplinary Action' summary. The title 'Hospital Disciplinary Action' is in bold. The text describes the action taken by a healthcare facility against a physician's staff privileges. It states that the action was for a medical disciplinary cause or reason and that the Medical Board is authorized to disclose only revocations and terminations of staff privileges. The summary includes the following details:

- Case Number: [redacted]
- Health Care Facility: PALOMAR MEDICAL CENTER, ESCONDIDO, CA
- Description of Action: TERMINATION OR REVOCATION OF SPINE PRIVILEGES
- Effective Date of Action: AUGUST 07, 2007

The figure displays an example of an hospital disciplinary action disclosure currently available on a physician profile in the MBC's License Lookup system. According to Business and Professions Code 805(f),

The information to be reported [to the MBC] in an 805 report shall include the name and license number of the licensee involved, a description of the facts and

circumstances of the medical disciplinary cause or reason, and any other relevant information deemed appropriate by the reporter.

This provision would seem to imply that hospital disciplinary summaries could provide considerably more information than currently is provided on the MBC's Internet website.

New Jersey's website also received high marks from Public Citizen for its reporting of malpractice information. The state reports all malpractice settlements and judgments (including dollar amounts) in the previous ten years. We found no state board website that reported the results of independent board investigations into malpractice payout cases, however.

State board physician profile systems varied considerably in their usability features and formatting. Some states (e.g., California) present profile information for a physician in a single table, whereas others used a tabbed format, such as displayed in the screenshot of the New Jersey board's system above in Figure 2. These formatting choices largely appear to be a matter of aesthetics, not utility.

Search capabilities are more critical to consumers, however. Robust and easy-to-use search capabilities should encourage patients and other users to make use of the available data. California's License Lookup system allows users to search on physician name, license number or city/county location. It returns a search results table sorted in alphabetical order by name, together with physicians' license numbers and addresses of record.

The Washington Medical Quality Assurance Commission's system returns a search results page that is sortable and includes a column to indicate whether a licensee has disciplinary actions on file. The sort capability and addition of a disciplinary actions column both add considerable value over the more bare bones approach offered by the California results table. The Oklahoma State Board of Medical Licensure and Supervision provides an "advanced search" option that gives users the ability to choose from a dozen different search criteria, including license status, disciplinary history, insurance plans accepted, and whether the physician is accepting new patients. These options encourage users to explore the database in ways that would not otherwise be feasible.

Medical Board of California staff report they are nearing completion of a new web service application that promises to dramatically improve the user's experience with the License Lookup system. The new system appears to be much more flexible in its ability to display data elements currently collected by the Board but not displayed in its physician profiles. Staff anticipate rolling out this new system during Fall 2008.

Complaint and Disciplinary Data at the Medical Board

The Medical Board maintains electronic databases of information about licensees, complaints filed by the public and others, and disciplinary/administrative proceedings conducted by the Board. In this section we review the contents of those databases both descriptively and analytically. Our focus in this section is on estimating and interpreting a model of MBC *accusations*, which roughly are equivalent to indictments in criminal proceedings. Accusations are not disciplinary actions *per se*, but accusations are converted into disciplinary actions at a high rate.

The MBC gathers and reports a variety of descriptive statistics about its data in annual reports as required by Business and Professions Code Section 2313. These statistics include total numbers of complaints and reports received and processed, the disposition of cases, etc. That section does not require the MBC to undertake any analysis of those statistics or the underlying data.

Since the departure of its last Medical Director and the elimination of the position in 2003, Medical Board staff appear to have done almost no exploratory data analysis beyond those analyses required for the annual reports.

Data elements recorded by the Board include a variety of biographical facts of potential predictive value for understanding what drives complaints filed and disciplinary actions taken against physicians. Prior research has identified several factors that may be associated with disciplinary sanctions, including physician age, gender, Board certification status, international medical school training and past disciplinary history.

We obtained complete, current electronic copies of the MBC's license status, complaints and disciplinary data modules from MBC staff in April 2008. The license status data contains 2.4 million observations on 171,446 different licensees between 1988 and March 2008. The complaints data contains 1.99 million observations on 191,577 different complaints dated between 1949 and April 2008 (although less than one percent pre-date 1988). The MBC changed database systems in the mid-1990s. In that change, only limited information was ported from the old system to the new database. As a consequence, data prior to 1995 are of very limited analytical value.

We confine our main analyses to accusations filed during 2001-March 2008. An accusation is a formal filing of charges by the Attorney General against a licensee of the MBC. As we noted above, only about seven percent of complaints filed with the MBC reach the accusation stage, including one out of every 30 complaints filed by members of the public and four out of every 30 complaints filed by other sources.

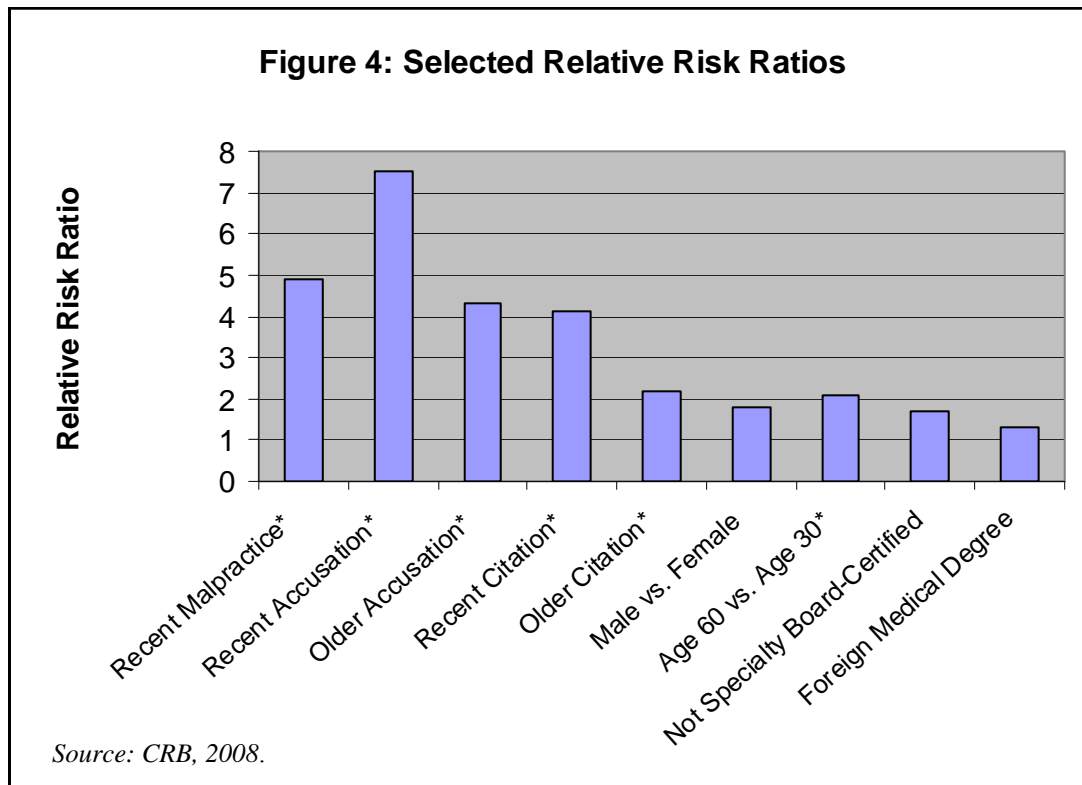
Our dependent variable in the analyses discussed below is whether or not an actively practicing licensee who devotes at least 20 hours per week to patient care faced one or more accusations in a given year. These limitations brought our sample size down to about 565,000 observations on 77,478 licensees. Our sample includes 1,103 cases of physicians charged with one or more *new* accusations in a given year. Thus about

0.2 percent of physicians each year were charged with one or more accusations in our sample period.¹⁰⁷

For a more complete discussion of our model and results, see the Appendix. Our main results are summarized below. These analyses confirm and extend prior findings in the literature.¹⁰⁸ Namely:

- We estimate that the average absolute risk of a physician facing an accusation is very small – about 0.23 percent per year. But the estimated absolute risk runs as high as 60 percent for elderly male doctors with minimal reported postgraduate training and a very poor disciplinary history. Conversely, the estimated absolute risk runs as low as 0.06 percent for young, female physicians with clean records, board certification and ample postgraduate training.
- Past experience with accusations predicts future accusations. We estimate that physicians who faced one or more accusations at any time two to five years earlier were on average *seven times more likely* to face a new accusation than were physicians with no accusations in the preceding ten years. We *also* found that physicians who faced one or more accusations 6-10 years prior (but none in preceding years two through five) were *four times more likely* to face a new accusation than were physicians with no accusations in the preceding ten years.
- We estimate that physicians who had *malpractice judgments, settlements or arbitration awards* on record with the MBC at any time two to five years earlier had *nearly five times greater risk* of facing a new (presumably unrelated) accusation than did physicians without malpractice payouts in the preceding ten years. We found no direct evidence for older malpractice payouts predicting future accusations. However, because older malpractice payouts predict older accusations, even these older payouts indirectly predict future accusations.¹⁰⁹
- Similarly, past experience with the Citation and Fine Program predicts future accusations. Physicians with one or more citations/fines on record in the five preceding years were four times as likely to face a new accusation as were physicians with no citations/fines in the preceding ten years. Doctors with older citations/fines (prior years 6-10) but none on record more recently were twice as likely to face a new accusation as were doctors with no citations or fines over the preceding ten years. The MBC discloses citations/fines for five years, but not older citations or fines.
- All else constant, the risk of an accusation doubles as the physician shifts from age 30 to age 60. But in the absence of other risk factors, the absolute risk remains tiny (under 0.4 percent each year for 60-year old physicians).
- The risk of an accusation is roughly twice as high for male physicians (averaging 0.28 percent) as for females (0.16 percent), although the estimated difference falls just short of the standard criterion for statistical significance. Likewise we found that physicians who lack specialty board certification were more likely to face an

accusation than those who reported being Board certified, but that the difference fell just short of statistical significance.



- Other factors, such as the number of years of postgraduate education reported by the physician and whether the physician was educated at a U.S. or Canadian medical school also proved marginally important to the odds of facing an accusation.

Figure 4 presents graphically the key relative risk ratios. These ratios are based on the absolute risk estimates shown in Table 8 and are calculated holding other variables at their mean or median values.

Differences were deemed “statistically significant” if the estimated absolute risk for the more risky case fell outside the 95-percent confidence interval for the estimate absolute risk of the less-risky comparison case. In general, the relative risk ratios had to exceed two to one in order to meet this standard.

As Table 8 indicates, the largest single predictive factor in the odds that a physician faces an accusation appears to be whether the physician has a history of past disciplinary proceedings. We find that a recent history of citations/fines (compared to those with a clean citation history) has a similar marginal effect as does a recent history of malpractice payouts (vs. no malpractice history in the past ten years). These effects are considerably

larger than the marginal effects associated with gender, age, specialty board certification, foreign medical school training or years of postgraduate education.

Table 8: Selected Absolute Risks of Current Accusation

Comparison	Absolute risks (probabilities)*
Malpractice payout history preceding years 2-5 vs. no payout history	0.011 vs. 0.0023**
Recent accusation history vs. no accusation history	0.017 vs. 0.0023**
More distant accusation history vs. no accusation history	0.010 vs. 0.0023**
Recent citation/fine history vs. no citation/fine history	0.0096 vs. 0.0023**
More distance citation/fine history vs. no citation/Fine history	0.0051 vs. 0.0023**
Male vs. Female	0.028 vs. 0.016
Age 60 vs. Age 30	0.032 vs. 0.015**
Not Specialty Board Certified vs. Specialty Board Certified	0.034 vs. 0.020
Foreign vs. domestic medical school degree	0.030 vs. 0.022
<p><i>Source: CRB, 2008.</i></p> <p><i>*Setting other variables at their respective average values.</i></p> <p><i>**Difference was significant at the .05 level. Differences for Male vs. Female and for Board certified/not certified fell just short of significant at the .05 level.</i></p>	

The statistical results support expanded public disclosure requirements for the Medical Board. The results indicate that certain information currently collected by the Board and required by statutory law to be reported to the public, but not currently reported or (by law) reported differently on the Board website than directly to inquiring members of the public, may in fact give patients a better understanding of the likely risks they take when choosing a particular doctor.

Policy Options

The following policy options emerge from our analysis of public disclosure practices at the Medical Board of California, the literatures on information economics, medical errors and malpractice, our survey of state medical board practices in other states and our statistical analysis of the covariates of disciplinary proceedings at the Board during 2001-2008.

These options are not necessarily recommended by the CRB or the author, but are offered for potential legislative and administrative consideration and action.

1. **The Legislature could incorporate a “public disclosure” requirement in its enumeration of the Medical Board’s formal responsibilities.**

Business and Professions Code Section 2004 lists nine Board responsibilities, none of which expressly mentions public disclosure.

2. **The Legislature could standardize the MBC’s statutory disclosure requirements across different outlets – in person/written requests vs. Internet website disclosure.**

Current law requires unlimited disclosure of various information about physicians’ disciplinary and malpractice payout histories, but limits that same information to ten-year disclosure, or bars disclosure entirely on the MBC’s Internet website. Our statistical analysis of MBC accusations suggests that 10-year availability of disciplinary documents is a *minimum period* for which such documents likely are informative to members of the public, rather than a maximum. Hence, the current ten-year (or shorter) Internet disclosure limitations are counter-productive for the goal of public protection.

3. **The Legislature could direct the MBC to expand and revise its Internet physician profiles to better conform to current law.**

Business and Professions Code 2027(a)(9) currently mandates the MBC to provide on its website “Any information required to be disclosed pursuant to Section 803.1.” The MBC’s physician profile system falls short of full compliance with those expectations. For example, at Business and Professions Code Section 803.1(b)(3)-(4), the Board is required to disclose “Current American Board of Medical Specialty [ABMS] certification or board equivalent” as well as “Approved postgraduate training.” Our statistical analysis found some evidence that these items appear to be predictive with respect to a physician’s odds of facing an accusation in a disciplinary procedure.

Neither of these pieces of information currently is provided in the Board’s physician profiles, however. Business and Professions Code Section 2027(c) allows the MBC to substitute “links to other Websites on the Internet that provide

information on board certifications,” which the MBC has done, but not as an integral part of physician profiles.

As we note elsewhere, the Medical Board’s current website management system appears to be a significant impediment to disclosure of this and other information in the MBC’s possession. Board staff indicate that they expect to roll out a new physician profile web service during the fall of 2008 that likely will include certification data from the ABMS.

4. **The Legislature could direct the MBC to investigate *and* provide summaries of those investigations to the public of each reported malpractice judgment, arbitration award and settlement.**

Scholars estimate that payouts in malpractice cases that *lack* evidence of major negligence-related harm outnumber negligent-harm payouts by 1.6:1. At the same time, scholars estimate that about 90 percent of malpractice claims are settled out of court,¹¹⁰ implying that settlement data could well be quite important to consumers. Our statistical analysis indicates that a doctor’s malpractice payout history is a significant predictor of his likelihood of facing future disciplinary proceedings. These two points strongly imply that current disclosure policies with respect to malpractice payouts should be extended and improved, rather than reduced. Disclosure of MBC dismissals of complaints in malpractice payout cases the MBC determines lack merit would substantially improve the quality of malpractice disclosure information. Likewise, MBC disclosure of linkages between malpractice payouts and subsequent disciplinary actions would improve the quality of disclosure.

5. **The Legislature could direct the MBC to study ways to improve public outreach in order to better identify cases of potential physician misconduct.**

The Board receives fewer than 4,000 Quality of Care complaints per year, which constitutes perhaps only a tenth of the estimated number of Californians per year who suffer injuries in hospitals from negligent care. These complaints result in fewer than 400 accusations filed per year against physicians. Using probability estimates drawn from published scholarly research and cost figures provided by Board staff for complaints filed by members of the public, we estimate the marginal costs to the Board of processing, investigation and prosecution to be approximately \$61,000 for each additional case prosecuted by the Attorney General.

Another, more aggressive option would be for the Board to conduct audits of physicians’ or hospitals’ records, whether at random or by some algorithm based on past complaints received. A number of scholarly studies have found that “generic screening criteria” for identifying hospitalization records likely to reveal evidence of a medical error are feasible and inexpensive. Generic screens long have been used by Peer Review Organizations for identifying quality problems in hospitals.

The MBC received 4,445 complaints from members of the public in 2006-07, compared to 2,365 civil Notice of Intent to sue filings (NOIs) received in 2003 (the last year in which NOI data was collected). Complaints and NOIs appeared to overlap somewhat, although estimating the precise degree of overlap is not possible with current data. If MBC staff were instead to treat NOIs as bona fide (if incomplete) complaints from the public, these documents potentially could generate a substantial increase in the number of public complaints received at minimal outreach cost.

6. The Legislature could direct the Board to specifically require licensees to notify their patients about the Medical Board's responsibilities for licensing and discipline of medical doctors and affiliated healthcare providers.

Business and Professions Code Section 680 requires healthcare practitioners to wear name tags identifying themselves as state-licensed providers or, alternatively, to post prominently a copy of their licenses. Business and Professions Code Section 138 requires regulatory boards under the Department of Consumer Affairs (DCA) to adopt regulations requiring each licensee to notify his or her clients that the licensee is licensed by the state, but exempts boards if another statute requires licensees to provide consumer notification of the licensee's status. The DCA interpreted health-related boards such as the MBC to be exempt from Business and Professions Code 138's notification requirements in light of Business and Professions Code 680.

Senate floor analyses of SB 2238, which enacted Business and Professions Code 138, appear to indicate that the intent of the Business and Professions Code 138 notification was to inform customers where they could direct complaints about licensees. The notification requirements of Business and Professions Code 680 appear to be inadequate to fulfill that intent.

The MBC currently does not require physicians to inform patients about the Board's role and function. A public notice requirement could raise public awareness of the Board's role in public protection.

7. The Legislature could direct the Board to expand information currently available on its website to make it easier for patients to find information about specific physicians.

Our statistical analysis identified physician age and gender as potentially important predictors of the odds that a physician will face a future accusation. These findings may well be masking other causal factors – such as age- or gender-related distributions of physicians in higher-risk specialties – not considered in our study. Further research likely could establish the informational value to patients of providing additional biographical details.

The current programming interface between the MBC's databases, hosted at the

Department of Technical Services, and the MBC's website, remains a significant impediment to information delivery. Board staff have indicated that they expect to roll out a new physician profile web service during the fall of 2008 which will begin to address this concern.

8. **The Legislature could direct the MBC to provide on its Internet physician profiles links to evidence-based, physician-level performance information provided by external organizations, such as the California Physician Performance Initiative.**

Measurement initiatives in quality of care have spread rapidly in recent years. The Board has begun general consideration of "medical errors" and quality of care through its Medical Errors Task Force. At the Board's July 24-25, 2008 quarterly meeting, the Task Force adopted as its mission statement "To examine the Board's role in promoting patient safety through developing or participating in systems that encourage and assist physicians in addressing medical errors consistent with the board's mission and resources."

One major initiative under way in California to provide evidence-based measurements of physician performance is the California Physician Performance Initiative, sponsored by the California Cooperative Healthcare Reporting Initiative. This initiative is being developed in association with the federal Centers for Medicare and Medicaid Services (CMS), which provided initial funding. The organization states on its website that it began reporting physician-level performance measures to member organizations during summer 2008 and that it anticipates reporting these data to the public at some point in the future. The Board could provide links to this initiative on its Internet website and to physician-level data on its physician profiles when these data become available.

9. **The Legislature could authorize the Board to sponsor and publish research projects on the Board's complaints, disciplinary and licensing databases.**

Our statistical analysis of accusations proceedings could easily be expanded in a number of directions that could provide the Board with statistical evidence about what information disclosures are most likely to improve public understanding of the risks inherent in medical care. Business and Professions Code Section 2004(e) specifies that "Reviewing the quality of medical practice carried out by physician and surgeon certificate holders under the jurisdiction of the board" is a fundamental responsibility of the Board. During his tenure as Medical Director at the start of this decade, Dr. Neal Kohatsu helped produce one of only two major, published studies of the determinants of Board disciplinary actions. Further, sustained research into the Board's own database likely would yield numerous additional insights that could help better inform the public as well as help the Board's enforcement arm better protect the public.

10. **The Legislature could direct the Medical Board of California and the California Board of Registered Nursing to develop methods for sharing and**

publicizing information about supervisory relationships between physicians and nurse practitioners.

Business and Professions Code Section 2836.1(e) limits physicians to supervising no more than four nurse practitioners at one time, but neither the Medical Board nor the Board of Registered Nursing currently tracks this information. Medical boards in four other states (North Carolina, Ohio, Tennessee and West Virginia) currently display information about supervisory relations in their physician license look-up systems.

- 11. The Board could be encouraged to improve public access to and utility of Board-provided information, such as establishing a web log (“blog”) to provide notices of disciplinary actions now distributed via an email notification service to subscribers.**

Web logs have become highly popular, low-overhead means for disseminating information to geographically dispersed audiences. A blog could supplement if not replace current, email notification list-based distribution systems for alerting the public to new documentation on the Board’s website. Such subscription-based notification systems seem more geared toward alerting professionals in the field than toward public disclosure. A Board-sponsored and maintained blog would be accessible to a wider audience of more intermittently interested readers.

Appendix: A Statistical model of medical board accusations

Patients' interest in evaluating physicians' records is to pick a "good" doctor. In other words, they are interested in forecasting physicians' odds of producing good outcomes in the future or, equivalently, the odds of experiencing a bad outcome. Bad outcomes in medicine may result from bad performance (relative to existing standards of care at the time of treatment – these standards may change over time), bad luck, or a combination thereof.

The probability of a bad outcome from a physician thus can be thought of as a function of the physician's competence and random error. We lack direct measures of physician competence. Further, it can change over time: a physician can learn new skills or correct past behavioral errors. These factors complicate the inferential problem for patients shopping for a doctor.

Our data on "bad outcomes" consists of complaints that have been filed with the Medical Board and led to a formal accusation by the Attorney General. For reasons discussed above, this is only a very small sample of "bad outcomes" experienced by patients. Further, research on who files complaints against doctors strongly suggests that the sample is non-random. For example, the relative frequencies with which patients file malpractice suits against doctors may be a function of the difficulty of the cases handled by the doctors.¹¹¹ Other research suggests that patients are more likely to complain about physicians with poor communication skills.¹¹²

Consequently, accusations filed against physicians reflect a sample of bad outcomes experienced by patients conditional on those outcomes having entered the complaints process at the MBC. Thus if certain classes of physicians generate complaints at higher rates than others – even if the underlying rates of negligent or incompetent care are identical – those physician attributes should tend to predict accusations.

The MBC's burden of proof is high in enforcement cases. Hence, many bad outcomes will be selected out prior to the accusation stage because the MBC determines that it lacks sufficient evidence with which to win a given case against a physician. As we noted above, the MBC frequently closes complaint cases it deems to be "with merit" but where the violation was deemed a "simple departure" from the standard of care or not part of a pattern of negligent/incompetent behavior by the physician. These facts complicate inference from our results.

Another limitation of our analysis arises from selection effects. When the MBC revokes or cancels a physician's license or the licensee surrenders her license to settle an enforcement action, that physician exits our data. The more proficient the MBC is at identifying and removing "bad doctors" from practice, the fewer observations we will have on those bad doctors producing bad outcomes for patients. Successful enforcement activity thus should tend to depress our ability to identify the attributes of "bad doctors,"

particularly if disciplinary histories predict license revocations, terminations and surrenders.

Additionally, our data analysis is limited because we lack systematic information about the risk profiles of the patients served by different physicians. The Ely, et al, study discussed argued that *better* doctors are more likely to be sued for malpractice. The authors suggested that malpractice suits may reflect the difficulty of the caseloads maintained by different physicians, rather than the relative competence of the physicians per se.

Our data consists of approximately 996,000 licensee-year observations for physicians during calendar years 2001-2008 (the accusations data for 2008 covers only the first quarter of the calendar year; results for a model that excluded the 2008 data were substantially similar).

In order to estimate the relationships between accusation events and our variables of interest, we need to identify physicians who are at risk of patient care-based complaints. The Medical Board's database includes many observations on physicians who are no longer practicing medicine in the state or otherwise rarely or never care for patients. Therefore, we made a number of adjustments, listed below, which restricted our estimation sample to roughly 567,000 licensee-year observations.

We excluded from our analysis

- All current (year t) accusations in which the physician is coded as also facing an accusation in year $t-1$. Prosecuting accusations is a lengthy process. The MBC reported in its 2007 Annual Report that the median processing time from filing an accusation to final decisions reached during FY 2006-07 was 350 days.¹¹³ Hence, half or more of active accusations may appear in the MBC data in more than one calendar year. Our data does not directly control for the possibility that a current accusation is in fact a continuation of one first posted in the previous year. Dropping the second of consecutive active accusation observations eliminates roughly half of all "current accusations" in our estimation set. But to the extent that the dropped observations refer to continued accusations, they would otherwise be double-counted in our sample (appearing in both year $t+1$ and year t as though they were unique events). This choice thus allows us to focus directly on *new* accusations.
- All physicians coded in the Board's licensing database as deceased (or having died during the calendar year), retired, or license canceled during or prior to year t .¹¹⁴ Because of some data inconsistency problems, we also dropped observations in which the physician's age was reported as less than 25 or greater than 85. Nearly 8,000 physician-year observations in the full (996,000+ observation) data set were coded as deceased.
- All license holders coded as "Fee Exempt." (106,520, including 73,012 marked as retired) Preliminary analyses indicated that, controlling for other factors, fee-

exempt status was never associated with accusations. The large majority of fee-exempt licensees are retired. A handful hold fee-exempt status because they exclusively serve a military clientele, while some others provide unpaid, voluntary service.

- Physicians who report their professional status as “Fellow” or “Resident.” These physicians-in-training almost never face disciplinary charges, nor do they have disciplinary histories. Because these physicians tend to be young, including them also would bias our estimates of the relationship between age and disciplinary odds.

Finally, we restricted our analysis to physicians who reported spending more than 20 hours per week in patient care. Physicians whose time is devoted primarily to administration, research or teaching are for obvious reasons much less at risk of incurring patient complaints about care.

The dependent variable is a dichotomous coding of whether the Medical Board has recorded one or more accusations against the licensee in the current year, coded one; or not, coded zero. Linear regression is inappropriate in these cases. A standard regression model estimates the “best” linear relationship between the dependent variable and the explanatory variables. When the observed dependent variable is ordered categorical, all of the outcomes are recorded as falling in one of a small number of categories. The basic expectation is that there exists a threshold combination of explanatory factors that triggers a change in outcome from one category to the next. Well below or well above the threshold, changes in the levels of the explanatory variables have no observable effect. For ordered binary data, all of the dependent variable observations for “low” levels of the explanatory variables should be in the “low” outcome category, while all of the observations for the “high” explanatory variable cases should be in the “high” outcome category.

Only when the values of those variables are near the threshold would we expect to see effects. That is, we expect a mix of “low” and “high” outcome codings in this case, with the mix tilting away from “low” toward “high” as the combination of explanatory variables moves from low values to high values. This also means that the marginal effect of changes in the level of an explanatory variable is not constant over the range of the variable’s values. Sometimes a small shift in its value would have little or no effect on the observed outcomes, whereas other times a small shift could induce major changes in the observed outcomes.

Logistic regression is one of the standard statistical modeling approaches for these outcome variables.¹¹⁵ One can think of this model as estimating the relationship between the explanatory variables and an unobserved, continuous “index” variable (ranging from negative infinity to positive infinity), but where we only get to observe classifications of the index variable as “low” or “high”. Below some unknown value of the index, the observed dependent variable is coded as a zero; above that threshold value, it is coded as a one. In our case, “low” corresponds to the observation that the Medical Board did *not*

bring an accusation against a licensee in a given calendar year. The “high” category corresponds to the case in which the Medical Board filed at least one accusation.

The unobserved index then can be thought of as the natural log of the odds that one or more serious complaints have been filed against the physician in recent months and that one or more of those complaints survived field investigation. As we noted above, only about one in 30 complaints filed by members of the public survives both Central Complaint Unit initial review and field investigation.

We employ a specialized version of logistic regression, designed to accommodate processes in which the outcome variable is very unevenly split between zeros and ones.¹¹⁶ Standard logistic regression models can return biased results in these cases, particularly when the sample size is small (which ours is not).

In principle, observed accusations are the product of several selection processes, each of which could rely on different factors to different degrees. Thus, for example, patients *could* be significantly more likely to file complaints against males, physicians of color, or physicians with a history of malpractice settlements or judgments. If the Central Complaint Unit and field investigation processes then are neutral to those factors, the observed outcome would still be more accusations filed against males, physicians of color, or physicians with malpractice histories. This could be the case even if the “true” rates of malfeasance were the same across males and females, Caucasians and non-Caucasians, or physicians with and without clean malpractice histories.

Hence, we urge caution in interpreting these statistical results. More research is needed to better understand what physician attributes contribute to each phase of the selection process in Board disciplinary activities.

The explanatory variables we considered in our model are as follows:

Physician age in years, calculated from the physician’s birth date as reported in verified licensing data. Following Kohatsu, et al., (2004), we expect the odds of disciplinary action to increase with physician age. The median age in our sample is 49; half of the observations lie between ages 41 and 57.

Physician gender (Male = 1, Female = 0), as reported in verified licensing data. We expect males to have higher odds of disciplinary action.¹¹⁷ Just over 74 percent of our physician-year observations are coded male.

Specialty Board certification status (Yes = 1, No or missing = 0), as reported to the Medical Board by physicians in a survey questionnaire administered biennially as part of license renewal. This data has been collected only since 2001.¹¹⁸ We expect specialty board-certified physicians to have lower odds of disciplinary action.¹¹⁹ About two-thirds of our physician-year observations are coded as specialty board-certified.

Years post-graduate training (0-9), as reported in the physician survey questionnaire. We expect greater levels of postgraduate work should be correlated

with greater physician performance quality and, therefore, lower odds of disciplinary action. The median reported years is four; half of the physician-year observations are coded as having between three and six years of postgraduate training.

Domestic Medical School Training (US or Canadian degree = 1, Foreign schooling = 0). We expect foreign medical school training to be associated with higher odds of disciplinary action.¹²⁰ About one-quarter of our sample is coded as having obtained a foreign medical degree.

Ethnicity (Caucasian = 1, All other codes or decline to state = 0), as self-identified in the physician survey questionnaire. We had no expectation about this variable, although we expect non-Caucasian to correlate with foreign medical school training. Hence, prior findings that foreign medical school training predicted higher odds of disciplinary action could have been driven by differential responses to physician ethnicity or language barriers rather than medical training, per se. Our sample is about 56 percent Caucasian; 39.8 percent of the non-Caucasians in our sample received degrees from foreign medical schools compared to 17.2 percent of Caucasian licensees.

Disciplinary History. We used four binary indicators to represent past history of discipline by the Board.

- *Past Accusations 2-5* was coded one if at least one accusation had been filed against the physician in preceding calendar years two through five, zero otherwise. Just over 4,000 observations in our sample were coded one on this variable. In a cross-tabulation with current accusations, we found that 2.5 percent of physicians with an accusation in preceding years two through five also had a current accusation, compared with only 0.18 percent of physicians without a recent accusation history.
- *Past Accusations 6-10* was coded one if at least one accusation had been filed against the physician at least six years prior but not more than ten years prior, zero otherwise. Just over 4,400 observations in our sample were coded one on this variable. In a cross-tabulation with current accusations, we found that 1.6 percent of physicians with an accusation in preceding years six through ten also had a current accusation, compared to 0.18 percent of those with no accusations in this past period.
- *Past Citations 1-5* was coded one if the physician had received at least one citation/fine in the preceding five calendar years, zero otherwise. We coded one for 8,633 observations. In a cross-tabulation with current accusations, we found that 0.95 percent of cases with a recent citation/fine also had a current accusation, compared to 0.18 percent of those with no recent citation/fine.
- *Past Citations 6-10* was coded one if the physician had received at least one citation/fine in preceding years six through ten, zero otherwise. We coded one for 3,215 cases. Our cross-tabulation with current accusations found that 0.87

percent of cases with a citation/fine in this prior period also had a current accusation, compared to 0.18 percent of those with no citation/fine in the prior period.

We expected negative disciplinary histories to be associated with higher odds of current accusations.¹²¹ Under current law, members of the public have unlimited access to that information, as long as inquiries are made in person or in writing (mailed through the postal service). That same information, however, is restricted to ten years when inquired about via Internet or telephone. Citation and fine data are made public and available on the Internet for only five years. We lack sufficient historical data to test whether even more remote malpractice or disciplinary events are predictive of current accusations. By estimating separate accusations coefficients for two periods, this model explores whether there is a significant drop-off over time in the predictive value of that historical information.

Malpractice History. A number of scholarly statistical studies of medical malpractice cases have concluded that there is very little relationship between malpractice *payouts* (the physician has paid a settlement, arbitration award or judgment) by physicians and the *contemporaneous* incidence of patient harm caused by physician negligence or incompetence in those cases. Since negligence and/or incompetence is the most prevalent *legal* charge against physicians in quality of care complaints filed with the Medical Board of California, these results would seem to imply that we should find no relationship between a history of malpractice payouts and current disciplinary action.

- Statutory law implies that the Medical Board is obligated to investigate reports of malpractice payouts that it receives. Independent empirical estimates suggest that negligence or incompetence is a significant factor in close to half of such cases. Hence, we expect a strong contemporaneous relationship between malpractice payouts in year t and accusations in years t and $t+1$. But we are interested in the *predictive* value of prior malpractice payouts. We assume that past malpractice payouts indicate a higher probability that the physician provided negligent or incompetent behavior in the past than if no payouts are on record. We hypothesize that a past history of negligent or incompetent care predicts future negligence or incompetence. We employ two indicators of past malpractice payouts:
- *Past Malpractice 2-5*: equals one if the physician reported a malpractice payout in preceding years two through five, zero otherwise. There were 2,529 observations in our sample coded one. The cross-tabulation with current accusations shows that 1.15 percent of physicians with a recent malpractice payout also faced a current accusation, compared to 0.19 percent of physicians with no recent payout.
- *Past Malpractice 6-10*: equals one if the physician reported any malpractice payouts in preceding years six through ten, zero otherwise. There were 2,122 cases coded one in our sample. The cross-tabulation with current accusations

showed that 0.38 percent of physicians reporting any malpractice payouts in this prior period also faced a current accusation, compared to 0.19 percent of physicians coded zero on this variable.

RESULTS AND DISCUSSION

The rare-events logistic regression results are listed below in Table A-1. Schematically, the model estimates the log-odds of a current accusation as a linear function of the explanatory variables. That is, we estimate a model of the form

$$\ln\left(\frac{pr(accusation = 1)}{pr(accusation = 0)}\right) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \varepsilon$$

where the X s are the explanatory variables, β s are the coefficients that “weight” the effects of the X s, α is a scaling constant and ε is a random error. The third column shows the estimated standard errors associated with the estimated coefficients, while the last column, labeled “ z ” in the table displays the ratios of estimated coefficients to estimated errors. A z -statistic larger than about two in absolute value indicates a statistically significant relationship in a two-tailed test. Many of our hypotheses are directional, which implies one-tailed tests. In these cases, a z -statistic larger in absolute value than about 1.65 indicates a statistically significant relationship when the estimated coefficient has the expected sign.

Overall, the model provides only a modest fit to the data, “explaining” less than ten percent of the variance in outcomes. An obvious area of omission in the model presented here is attention to physicians’ area of specialty. Kohatsu, et al. (2004) found evidence suggesting that certain specialties (general practice, family practice, obstetrics/gynecology, and psychiatry, respectively) are associated with higher rates of disciplinary actions than are other specialties. With the exception of psychiatry, these specialties very often are on the front lines of diagnosis and treatment of illnesses.

The weak overall fit of the model suggests that more research is needed in this area to better explain the nature of Medical Board disciplinary patterns. For example, very little is known about the attributes of physicians most associated with complaints filed by members of the public. Disciplinary proceedings are rare events and are the end product of prior selection mechanisms that are not directly modeled here. Further analysis is required to identify separately factors associated with public complaints filed with the Board from factors associated with field investigation and formal accusations in cases *conditional* on a complaint having been filed. Nonetheless, the results are quite suggestive about the potential value to patients of improved public disclosure about physician performance.

The coefficients in a logistic regression are not as easily interpreted at a glance as are linear regression results. Marginal effects require a bit of math. The effects of a one-unit change of an explanatory variable depend on the levels of all the variables, for example. Hence, in the body of the paper, we presented a table of absolute and relative risks associated with different values of key indicators.

We found broad support for our measures of physicians' disciplinary histories, as well as biographical descriptors, such as age, gender and training. All of the estimated coefficients – with one exception – had the correct sign, and all but two met the .05 criterion for statistical significance. Our results provide strong empirical justification for publicly disclosing *at least* these indicators in a physician profiling system. The only exceptions were the ethnicity indicator, for which we had no clear expectation, and Malpractice History 6-10, which we expected to be positive but was indistinguishable from zero.

Table A-1: Odds of a Current MBC Accusation, 2001-2008

Table A-1: Odds of a Current MBC Accusation, 2001-2008			
Dependent variable: Current Medical Board Accusation			N = 565,218
Variable	Coefficient	Std. error	z
Age (Years)	0.027	0.0027	9.85*
Gender (Male=1)	0.64	0.094	6.76*
Specialty Board Certified	-0.52	0.062	-8.30*
Postgraduate training (Years)	-0.037	0.016	-2.21*
Domestic medical school degree	-0.28	0.069	-4.12*
Ethnicity (Caucasian = 1)	-0.077	0.067	-1.15
Past accusations 2-5	1.92	0.12	16.21*
Past accusations 6-10	1.30	0.15	8.90*
Past citations 1-5	1.29	0.13	9.85*
Past citations 6-10	0.48	0.22	2.11*
Malpractice history 2-5	1.30	0.21	6.23*
Malpractice history 6-10	-0.35	0.36	-0.97
Source: CRB, 2008.			
*Significant at the .05 level.			

Finally, these results strongly suggest that there is a considerable degree of structure to be found in MBC enforcement data. Undoubtedly, many more insights remain to be gleaned from further research into the determinants of complaints filed against physicians and cases forwarded by the Central Complaint Unit and field investigators, respectively.

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Notes

¹ Business and Professions Code Section 2001.1.

² Kohn, et al., 2000. On the definition of adverse medical event, see Brennan, Localio and Laird, 1989; Brennan, et al., 2004.

³ The national statistics are substantially higher than official death statistics reported by the state of California. In the body of the report, we discuss at greater length reasons why we view these official statistics to be much too conservative.

⁴ These estimates of hospital adverse events rates can be found in the Institute of Medicine's landmark report, *To Err is Human* (Kohn et al., 2000). See also, e.g., Weiler, et al. (1993); Thomas, et al (2000).

⁵ Thomas, et al. (2000) attributed 46 percent of adverse events in their sample to surgeons and another 23 percent to internists.

⁶ Matthew Greenwald and Associates, 2006.

⁷ Joint Legislative Sunset Review Committee, 2002b.

⁸ Additionally, the MBC has oversight responsibilities over several allied medical professions, including Licensed Midwives, Medical Assistants, Registered Dispensing Opticians, and Research Psychoanalysts.

⁹ The Board consists of 15 appointed positions (as of August 1, 2008 per AB 253 (Eng), 2007), reduced from 21, plus professional staff. This Board size reduction is part of a general staff reorganization.

¹⁰ As of August, 2008, one public board member, Gerri Schipske, was a Registered Nurse Practitioner license by the Board of Registered Nursing.

¹¹ For existing fee regulatory language, see California Code of Regulations Title 16, Section 1352.

¹² California State Auditor, 2007, 9, and Kimberly Kirchmeyer, Deputy Director, MBC, personal communication, October 2, 2008.

¹³ Business and Professions Code 2220(a)-(c).

¹⁴ The reference to Section 805 pertains mainly to revocations of staff privileges by hospitals and clinics.

¹⁵ See Business and Professions Code Section 800(a).

¹⁶ See Business and Professions Code Section 801.01.

¹⁷ See Business and Professions Code Section 803(a).

¹⁸ Business and Professions Code Section 800(b) states that if the MBC “has failed to act upon a complaint or report within five years, or has found that the complaint or report is without merit, the central file shall be purged of information relating to the complaint or report.”

¹⁹ Of these cases, 6,609 (3.4 percent) were closed as non-jurisdictional. For a more detailed discussion of the data, see the section below titled “Complaint and Disciplinary Data at the Medical Board.”

²⁰ See the CCU Procedure Manual, section 4.01 (Medical Board of California, N.d.) for an explanation for how complaint sources are identified. The MBC assigns incoming complaint reports to one of 81 separate Report/Referral codes, which it collapsed to 21 separate “Origin” categories used in the MBC’s annual reports. The data we received from the MBC is coded with this latter, smaller classification scheme.

²¹ This breakdown can be found by fiscal year in Exhibit V-C, D’Angelo Fellmeth and Papageorge, 2005, 40.

²² D’Angelo Fellmeth and Papageorge, 2004, 93.

²³ Business and Professions Code Section 2220.08.

²⁴ See the C.C. U. Procedure Manual, section 5.5, p. 1 (Medical Board of California, N.d.).

²⁵ Prior to implementation of S.B. 1950 (Figueroa), Chapter 1085, Statutes of 2002, in 2004, the MBC did not classify incoming cases with respect to quality of care. This limits our ability to analyze QC cases separately.

²⁶ Medical Board of California, N.d., section 5.5.

²⁷ The categories are defined in the CCU Procedure Manual, section 9.1 (Medical Board of California, N.d.).

²⁸ See Medical Board of California, N.d., section 9.1.

²⁹ See Business and Professions Code Section 800(b) and Medical Board of California, N.d., sections 9.1 and 9.2.

³⁰ However, “An initial negligent diagnosis followed by an act or omission medically appropriate for that negligent diagnosis of the patient shall constitute a single negligent act.” Business and Professions Code Section 2234.

³¹ Renee Threadgill, MBC Chief of Enforcement, personal communication, September 19, 2008. See, e.g., Pollak v. Kinder (1978) 85 Cal. App. 3d 833.

³² An exception to this non-disclosure rule applies to statutorily-specified reporting categories, such as malpractice payouts. The Board does not disclose linkages between malpractice payouts and either administrative actions or disciplinary actions, however.

³³ Of 2007 cases referred to field investigation, only 6.7 percent were closed without merit and 10.1 percent closed with merit in our data. Many of these cases remained open at the end of our sample period, which largely explains the apparent difference in closure rates from the 2000-06 period.

³⁴ These figures include both “Accusations” and “Accusations and petitions to revoke” and were provided by MBC staff.

³⁵ Federation of State Medical Boards, 2007, 1.

³⁶ Medical Board of California, 2008, 1. See also Business and Professions Code Sect. 2001.1.

³⁷ Fantozzi, 2008, 2.

³⁸ Medical Board of California, 2008,

³⁹ Matthew Greenwald & Associates, 2006.

⁴⁰ Heisel and Saar, 2002.

⁴¹ Only six of 43 DCA entities appear to have adopted implementing regulations to date for Business and Professions Code 138: the State Board of Accountancy; the California Board of Architectural Examiners; the Board for Professional Engineers and Land Surveyors; the Speech-Language Pathology and Audiology Board; the Structural Pest Control Board; and the Board for Geologists and Geophysicists.

⁴² Office of Senate Floor Analyses, 1998a.

⁴³ Kimberly Kirchmeyer, MBC Deputy Director, personal communication, August 20, 2008.

⁴⁴ Marchand, 1998.

⁴⁵ Office of Senate Floor Analyses, 1998b.

⁴⁶ See Business and Professions Code Section 2220.1, added pursuant to SB 1950 (Figueroa, 2002).

⁴⁷ D’Angelo Fellmeth and Papageorge, 2005, 160. California agencies requiring licensees to inform clients about their licensing boards include the Department of Managed Health Care, as well as “those regulating accountants, architects, engineers, optometrists, structural pest control operators, geologists and geophysicists, automotive repair dealers, contractors, and automobile insurers” (D’Angelo Fellmeth and Papageorge, 2004, 230-1).

⁴⁸ D’Angelo Fellmeth and Papageorge, 2005, 160.

⁴⁹ Kimberly Kirchmeyer, MBC Deputy Director, personal communication, August 20, 2008.

⁵⁰ The MBC’s “Contact Us” Internet website page currently does not associate that toll-free number with the CCU.

⁵¹ D’Angelo Fellmeth and Papageorge, 2004, 226.

⁵² The Public Disclosure Information document can be found at http://www.medbd.ca.gov/consumer/public_disclosure.pdf.

⁵³ The threshold is four settlements for “high risk” specialties (neurological surgery, obstetrics, orthopedic surgery, and plastic surgery) and three settlements for all other specialties. See California Code of Regulations Section 1355.31.

⁵⁴ Business and Professions Code 801.01(h)(2)(H)

⁵⁵ Business and Professions Code Section 803.1(b)(2)(B)(i)-(iii).

⁵⁶ Business and Professions Code Section 2425.1(d).

⁵⁷ See Business and Professions Code Sections 803.1(b)(3)-(4).

⁵⁸ Former MBC Enforcement Program Monitor Julianne D’Angelo Fellmeth noted that this detailed listing is a laudable feature of the MBC’s physician profile system and that most other states lack similar notices (personal communication, August 12, 2008).

⁵⁹ Business and Professions Code Sections 803.1(b)(3), 803.1(b)(4), respectively.

⁶⁰ Business and Professions Code Section 2027.

⁶¹ Medical Board of California, 2007, iii.

⁶² Joint Legislative Sunset Review Committee, 2002a, 4.

⁶³ Brennan, Localio and Laird, 1989, 1148.

⁶⁴ Thomas, et al., 2000, 266-7.

⁶⁵ Weiler, et al., 1993.

⁶⁶ On California hospitalizations, see Office of Statewide Health Planning and Development, 2008. Brennan, et al. (2004) report that 0.5 percent of hospitalizations in their study ended in medical error-related deaths. The Institute of Medicine report highlights a range of medical error-related death rates of 6.6 percent of cases in the Colorado/Utah data to 13.6 percent in the New York data (Kohn, Corrigan and Donaldson, 2000, 30).

⁶⁷ Official statistics attributed only 322 deaths in 2006 cumulatively to “complications of medical and surgical care” [Center for Health Statistics, n.d.(a)]; “drugs causing adverse effects in therapeutic use, sequelae” [Center for Health Statistics, n.d., (b)]; or “other complications of medical, surgical care and their sequelae” [Center for Health Statistics, n.d. (c)]. Roughly 235,000 Californians die each year, according to data from the California Department of Public Health (Office of Health Information and Research, 2006).

⁶⁸ See Office of Planning, Evaluation and Data Analysis, N.d.

⁶⁹ Rau, 2008.

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- ⁷⁰ Business and Professions Code Section 802.5(a).
- ⁷¹ Office of the Medical Examiner, Broward County (FL), 2000.
- ⁷² Office of the Medical Examiner, Allegheny County (PA), 2003.
- ⁷³ See D'Angelo Fellmeth and Papageorge, 2004, 227-8.
- ⁷⁴ Weiler, et al., 1993; Thomas, Studdert, Burstin, et al., 2000. See also Kohn, Corrigan and Donaldson, 2000, 30.
- ⁷⁵ Blakslee, 1992.
- ⁷⁶ Division of Labor Statistics and Research, 2006.
- ⁷⁷ Medical Board of California, *Annual Report*, various years, and CRB analysis of Medical Board data.
- ⁷⁸ Center for Health Statistics, Vital Statistics Query System, accessible at <http://www.applications.dhs.ca.gov/vsq/default.asp>.
- ⁷⁹ Medical Board of California, 2007, vi.
- ⁸⁰ Parker-Pope, 2008, citing Hickner, et al, 2008.
- ⁸¹ Bates, et al., 1995. See also California Medical Association, 1977; Murff, et al., 2003, Rubin, et al., 1992; Zhan and Miller, 2003. Bates et al. define generic screening criteria as “criteria that can be applied to all discharged patients, regardless of case mix whose presence suggests an increased likelihood of poor-quality care. First developed in the California Medical Insurance Feasibility Study, generic screening criteria have been widely employed by Peer Review Organizations, the Veterans Administration hospitals, and others” (1995, 452-3).
- ⁸² We used the Bureau of Labor Statistics' Consumer Price Index calculator, located at <http://data.bls.gov/cgi-bin/cpicalc.pl>, to make this adjustment. To make the 2000-01 calculation, we deflated the \$678 current-dollar figure for CCU processing to \$549 in 2000-01 dollars.
- ⁸³ D'Angelo Fellmeth and Papageorge, 2004, 117.
- ⁸⁴ Peltzman, 1975.
- ⁸⁵ This issue is at the core of discussions about the Medical Board's recently terminated Physician Diversion Program. See, e.g., California State Auditor, 2007b.
- ⁸⁶ Holmstrom, 1979 discusses moral hazard problems and their remedies in so-called principal-agent relationships, which would include patient-physician relationships.
- ⁸⁷ Nelson 1970, 1974, 1978; Milgrom and Roberts, 1986.
- ⁸⁸ Akerlof, 1970.

⁸⁹ See Luo, 2007 for a review of physician ratings websites. Examples of physician ratings services include: Angie's List, RateMD, DoctorsScorecard, Vimo, CareSeek, NursesRateDoctors and FindADoc.

⁹⁰ Federation of State Medical Boards, 2000, 4.

⁹¹ International Communications Research, 2006; see also Princeton Survey Research Associates International, 2004, for similar results. Additionally, there now exists a considerable literature exploring public opinion about the disclosure of medical errors. See, e.g., Mazor, et al., 2006, 2004; Gallagher, et al., 2003; Blendon, et al, 2002; Hobgood, et al., 2002; Witman, Park and Hardin, 1996.

⁹² Matthew Greenwald & Associates, 2006.

⁹³ Case-control is an epidemiological study design that allows for comparisons of the descriptive characteristics of a "case" sample (here, physicians who have been disciplined in the sampled period) against those of the control group. It is most appropriately used as an exploratory tool, to identify factors that should be included in an explanatory model of the process generating the cases of interest.

⁹⁴ Morrison and Wickersham, 1998, 1890.

⁹⁵ The position of Medical Director has not been reinstituted since his departure when the position was eliminated in 2003. The Enforcement Program Monitor's final report urged the administration to restore the position (2005, 44). The Board requested the position be restored in 2007, but that request was not fulfilled.

⁹⁶ Non-prejudicial actions constituted 13.9 percent of all sanctions in the FSMB data used by Grant and Alfred, 2007.

⁹⁷ Brennan, et al., 1991; Taragin, et al., 1992.

⁹⁸ The table further omits the vast majority of hospitalizations – 99,487.5 per every 100,000 – in which the Adams and Garber base probability model predicts neither a major negligence-based injury nor a malpractice lawsuit filing.

⁹⁹ See Zorn, Allen and Horowitz, 2004.

¹⁰⁰ Nielson-Bohlman, Panzer and Kindig, 2004.

¹⁰¹ Howard, 2004.

¹⁰² Current members of the CCHRI include Aetna Health of California, Anthem Blue Cross, Blue Shield of California, CIGNA Healthcare, Health Net of California, Kaiser Permanente Northern California, Kaiser Permanente Southern California, PacifiCare, Western Health Advantage, California Association of Physician Groups, California Hospital Association, California Medical Association, and Permanente Medical Groups. See <http://www.cchri.org/about/index.html>.

¹⁰³ The AQA, formerly the Ambulatory Care Quality Alliance, is a national organization formed in 2004 by the American Academy of Family Physicians (AAFP), the American College of Physicians (ACP), America's Health Insurance Plans (AHIP), and the Federal Department of Health and Human Service's Agency for Healthcare Research and Quality (AHRQ) to develop and promulgate evidence-based measures of quality healthcare. The organization's website can be found at <http://www.aqaalliance.org/>. The National Quality Forum is a private, not-for-profit member organization whose mission statement is "to improve the quality of American healthcare by setting national priorities and goals for performance improvement, endorsing national consensus standards for measuring and publicly reporting on performance, and promoting the attainment of national goals through education and outreach programs." Its website can be found at <http://www.qualityforum.org/>.

¹⁰⁴ FSMB, 2007, 23. We confirmed these findings with our own survey of state medical board websites. Federation members are drawn from all 50 states, the District of Columbia, Guam, the Commonwealth of the Northern Marianas, Puerto Rico, and the U.S. Virgin Islands. It includes 14 boards that regulate allopathic physicians, 15 that regulate osteopaths, and 41 that regulate both.

¹⁰⁵ Medical Degree is implicit in profession-specific profiles.

¹⁰⁶ Few states provide a separate section in physician profiles to identify disciplinary actions by other states or federal agencies.

¹⁰⁷ About 2.6 percent of the physicians in our sample had at least one accusation on file in the database (including accusations filed prior to 2001). We included accusations filed prior to 2001 in our explanatory variables but do not model those accusations directly.

¹⁰⁸ The absolute and relative risk estimates cited below were generated using a statistical technique that also provides error bounds for those figures. Hence, we are able to make statements about the "statistical significance" of risk comparisons. All our results must be interpreted with caution. Accusations are statistically rare events. As such, logistic regression parameter estimates are particularly prone to bias and specification error (King and Zeng; King, Tomz and Zeng). While our statistical estimation techniques are adjusted to account for that rarity, the precision of our relative risk calculations is low. That is, our estimates of the probability of an accusation being filed against a physician with *specific attributes* have wide error bounds. Thus, while we have reasonable confidence that the characteristics we have identified are significant predictors of accusations, the relative risk ratios for specific comparisons are less certain.

¹⁰⁹ A limitation of our analysis lies in the fact that younger physicians have shorter disciplinary histories. We coded a physician's history as "clean" if there were no relevant events (e.g., accusations, citations/fines or malpractice payouts) in the period of interest even if the physician was not practicing throughout the period rather than dropping the observation. This confounds somewhat our estimates of the effects of some indicators, such as age, because only physicians who have been in practice for at least six years could have faced an accusation or recorded a malpractice payout or citation/fine in the six-to-ten years prior period. This coding choice creates a small, positive correlation between age and the odds of having a "dirty" disciplinary history.

¹¹⁰ Weiler, et al, 1993, 14.

¹¹¹ Ely, et al., 1999.

¹¹² See, e.g., Rodriguez, et al., 2008; Gallagher, et al., 2003; Levinson, et al., 1997; Agency for Healthcare Research and Quality, 1997.

¹¹³ Medical Board of California, 2007, vi.

¹¹⁴ The "canceled code" means the license was voluntarily canceled or has not been renewed for at least five years. It does not imply revocation or surrender connected with disciplinary action.

¹¹⁵ Greene, 2007.

¹¹⁶ King and Zeng, 1999a, 1999b. See also Tomz, King and Zeng, 1999.

¹¹⁷ Kohatsu et al., 2004.

¹¹⁸ Survey results from each physician supersede any past survey data for that physician in the database. Hence, we had to make an assumption about consistency of the data over time. We made the strong assumption that the key data collected in these surveys with respect to patient hours, graduate education, and Board certification status was constant for each physician throughout our sample period of 2001-2008, with one key exception. Where the licensee changed into or out of fee-exempt status from one survey to the next, we have multiple survey observations because the Board maintains separate database entries for those individuals (one license "key" for the physician while he or she pays standard fees and a second "key" for fee-exempt status periods).

¹¹⁹ Kohatsu et al., 2004.

¹²⁰ Kohatsu, et al., 2004.

¹²¹ Grant and Alfred, 2007.