



Fig. 1 *The Consultation of Physicians*, by Eugene Delacroix, 1820.

Dishonesty in Medicine Revisited

Herbert L. Fred, MD, MACP

Health care in America today leaves much to be desired. Among its glaring deficiencies are fragmented and impersonal delivery of service, high costs, and adverse events.¹ Moreover, physicians now march to bureaucratic drummers, have little or no autonomy, suffer diminishing prestige, and exhibit sagging professionalism.^{2,3} To make matters worse, many recent medical graduates lack the clinical skills necessary for good patient care.^{4,5}

A further element in this medical mess is dishonesty—an embarrassment that pervades our profession and undermines its core values of truth, integrity, philanthropy, and altruism. Without question, dishonesty comes in all shades, and at times it can be a matter of interpretation. That said, dishonesty (as defined here) encompasses any form of professional or academic misconduct, including fraud, deceit, cheating, lying, shirking responsibility, abuse of authority, conflicts of interest, plagiarism, alteration of medical records, forgery, false representation, and knowingly assisting another person in dishonest acts.

I examined this issue 24 years ago,⁶ but dishonesty in medicine has grown substantially in the interim. This editorial expands my original report and provides an overview of dishonesty as it currently exists in a variety of medical settings.

Medical School

Long before attending medical school, some students exhibit unethical academic behavior. Cheating, for example, is prevalent in grade schools⁷ and colleges⁸ and is independent of religious or moral attitudes or of the desire to study medicine.⁹ And there is no evidence that unethical academic behavior of any type is diminishing at the premedical level.⁹

Given the high-powered, competitive environment of medical school, some students will do anything “to get ahead,”⁹ or simply to survive. As a result, cheating abounds. Studies indicate that between 27% and 58% of students cheat at least once in medical school,¹⁰ that those who cheat are likely to be dishonest when providing patient care during their clerkships,⁷ and that the number of students who cheat increases from the freshman to the senior year.⁹

Dental and nursing students also cheat. One survey showed that 43% of all students at The University of Iowa College of Dentistry admitted cheating, but 94% believed it was occurring.¹¹ In a similar survey of 253 baccalaureate and associate-degree students at Pace University Lienhard School of Nursing, 61% to 94% had seen their peers cheat, while 8% to 39% reported that they themselves had cheated.¹²

The time-honored methods of cheating include copying from another student or from a “crib-sheet” during a test, having someone else write a paper or complete a homework assignment, plagiarizing, signing an attendance sheet for a classmate, faking the result of a laboratory experiment, and falsifying information from the medical history or physical examination.



Fig. 2 Antonio de Budria, 15th-century teacher, lecturing to medical students at the University of Bologna.

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From: Department of Internal Medicine, The University of Texas Health Science Center at Houston, Houston, Texas 77030

Address for reprints:
Herbert L. Fred, MD, MACP,
8181 Fannin St., Suite 316,
Houston, TX 77054

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Nowadays, technology has taken cheating to a much higher level.⁸ Cyberplagiarism, for example, is a new term that refers to obtaining information from the World Wide Web without proper citation. The “Key Katcher” is a small gadget that records keystrokes on a personal computer and can be used to obtain an instructor’s computer password to access his or her files. Personal Digital Assistants (PDAs) store notes for quizzes; cellular telephones enable text messaging, the performance of calculations, and access to the Internet for answers to questions; and camera telephones can photograph notes for use during tests—or can photograph test questions for later use by other students.

Another major form of dishonesty occurs in the final year of medical school, when students face the ordeal of applying for fiercely competitive residency positions. To have the best chance of obtaining the training program they want, many students pad the application package with as much supporting evidence as they can muster. “Honesty is never an issue—the emphasis is on avoiding failure and achieving success.”¹³ These students argue that being completely honest would hurt their chances.

In a powerful, award-winning essay on the resident-selection process, Tara Young says, “It is disconcerting that medical students openly resort to the use of deception, dishonesty, and outright lies in the resident-application process. . . . There is something morally reprehensible about a process in which inherent dishonesty is needed in order to succeed. . . . Everyone involved in resident selection must begin to acknowledge and realize the potential implications of the institutionalized dishonesty that has become an integral part of the selection process.”¹³

From personal observations during 50 years as a full-time medical educator, including 19 years as program director of a transitional internship, I wholeheartedly endorse Young’s sentiments. I, too, firmly believe that there is no place in medicine for cheaters or liars. In today’s permissive culture, however, automatic expulsion of such miscreants—the rule when I was in training—no longer occurs, and most of these guilty students (and house officers) ultimately enter private practice or remain in academic medicine. Not surprisingly, this unprofessional behavior in medical school correlates strongly with subsequent disciplinary action by state medical boards.¹⁴⁻¹⁶

Sadly, students aren’t the only ones in medical school who are guilty of misconduct. At times, they are the recipients of misbehavior.¹⁷ A pilot survey of a 3rd-year medical school class explored student perceptions of mistreatment and professional misconduct during medical school training.¹⁸ Of the 75 students who responded, most reported having been humiliated or belittled at one time or the other by house staff, nurses, or clinical faculty. Twelve students allegedly were physically harmed, 6 by house staff and 6 by clinical faculty. Var-

ying types and degrees of sexual and racial harassment from classmates, house staff, and clinical faculty were common as well. Forty percent of the students had observed house staff covering up mistreatment of patients, while 20% of the students had witnessed clinical faculty doing the same thing. A small percentage of the students had seen house staff and clinical faculty falsify information.

Dishonesty also creeps into letters of recommendation. Medical students and house officers obviously seek such letters only from faculty members who are likely to be supportive. The letters, in turn, typically are supportive—but often to a ridiculous extent. They oversell the positive and ignore or cover up the negative.¹⁹ With few exceptions, the candidate is “enthusiastic and above average,” or “gets along well with everyone,” or “will be a fine physician.” No one’s work seems to be below average or cause for concern. In the rare event that drawbacks *are* mentioned, excuses for them are almost always given—“pressing family issues,” “heavy workload,” etc.

Grades in medical school, regardless of the format used (numerical, letter, class standing, or pass/fail), commonly reflect a vote for the student’s charisma, rather than a rating of academic accomplishments. Accordingly, few students ever fail, and almost all, somehow, end up “very good” or “exceptional.”

Complicating the issue of grades is the “fear of re-priming syndrome”—students, for good cause, are afraid to challenge their instructors, even when they know them to be wrong. In the previously cited pilot survey regarding medical student abuse,¹⁸ 29% of the students reported that clinical faculty had threatened them unjustifiably with a bad grade. And 5 students claimed that clinical faculty had threatened to ruin their careers.

Postgraduate Medical Training

Dishonesty in the postgraduate setting appears in numerous, but often subtle, guises. Sycophancy, bet-



Fig. 3 Collegium Sapientiae, Freiburg University, 1497.

ter known as “brown-nosing” or “apple-polishing,” is the norm. It surfaces daily, especially during teaching rounds, when the teacher and house officer say and do what each presumes the other wants, rather than what the house officer needs and the patient deserves. The participants leave these sessions with their egos and misconceptions intact.

One-upsmanship usually consists of a teacher or house officer intentionally spewing forth information that no one can verify. “A British researcher described that phenomenon about 30 years ago in one of the basic science journals, but I can’t remember which one.” Or, “Yes, it’s rare, but I’ve seen it on numerous occasions.”

False reporting of physical findings is almost standard. Pick up any inpatient record, especially on the medical service, and turn to the section on physical examination. There, under “Eyes,” you will typically find PERRLA (pupils equal, round, and react to light and accommodation).^{20,21} When I see that particular abbreviation, I always ask the house officer, “Did you actually check the pupils for accommodation?” The answer usually is, “No.” Another example appears under “Neurological,” where “cranial nerves intact” is common. In most of these cases, however, cranial nerves I, II, and VIII have not been tested.

Why, then, do so many house officers (and practicing physicians) record these false physical findings? It’s because, as medical students, they observed house staff, and even some senior staff, doing precisely the same thing. And with herd mentality prevalent in medical school, students mindlessly embrace this habit and never let it go. Despite its seemingly innocuous nature, this practice is dishonest and potentially harmful to the patient.

Ward games take place daily. For example, some house officers never answer their beepers. “The battery was dead,” they say. Other house officers habitually miss or come late to conferences. For their excuse, they invariably offer the fail-safe answer: “I was taking care of a patient.” When the attending asks for the result of a test that has not been ordered, “It’s not back yet,” the house officers characteristically reply. But as soon as the attending leaves, they order the test “stat” so that the result will be available when the attending returns.

Copycatting occurs frequently. On careful review of inpatient records, I find numerous cases in which the admission write-ups and progress notes by the student, intern, and resident are almost identical. When questioned about it, the participants admit to copying each other’s work. “Too much to do and too little time to do it in,” they say. Copycatting may serve them, but it never serves the patient.

Medical Practice

Dishonesty in medical practice takes many forms, virtually all of which stem from the same cause—serving

one’s self before serving one’s patients. The manifestations can be difficult to spot when they apparently conform to the standard of medical care in the community. A prime example is shirking responsibility (that is, failure to take charge).^{3,22,23} In such cases, the attending physician—faced with a busy schedule and fearful of being sued for missing something—orders myriad tests and prescribes a multitude of drugs, hoping thereby to detect and alleviate every conceivable ill. If the patient’s condition fails to improve or a test result is abnormal, the attending physician defers to an army of consultants (Fig. 4) who march in and take over, each managing a part of the body but no one managing the whole.



Fig. 4 *The Consultation*, by Thomas Rowlandson, 1808.

A cascade of ill-advised activities ensues—more consultations, inappropriate testing, over-prescribing of medications, uncalled-for procedures, needlessly prolonged hospitalizations, and unnecessary office visits. This process continues until a definitive diagnosis surfaces, the patient’s complaints subside, the patient or the patient’s family intervenes, or the patient dies. Meanwhile, the attending physician simply watches the medical merry-go-round.

Consultants in these cases are ideally positioned to halt the ride but hop on board instead, typically with gimmick in hand. And even when they know that their gimmick is not indicated, they still use it, because “It’s what the referring physician wanted,” or “It’s important for research,” or “It’s the only way to know for sure.” Too often, however, it isn’t what the patient needs or deserves.

Other acts of dishonesty include fraudulent or inappropriate billing²⁴; expurgating or manipulating medical records to conceal complications, pass peer review, or prevent lawsuit²⁵; hospitalizing patients solely for better reimbursement⁶; serving as expert witnesses when not qualified to do so²⁶; falsifying curricula vitae²⁷; and keeping quiet when suspecting or knowing that a colleague is emotionally disturbed, outright incompetent, guilty of sexual misconduct, a liar, a cheater, or an abuser of alcohol or drugs.

Money and prestige seduce some practitioners (and academicians), which allows conflicts of interest to take root. And the soil in clinical practice is particularly fertile for such conflicts. Consider, for example, physicians who own and operate specialty hospitals²⁸⁻³⁰ or have their own high-tech diagnostic³⁰ or therapeutic^{30,31} machinery. Critics argue that these physicians have strong financial incentives to refer patients to their own facilities.

Next, consider the many physicians who go around the country promoting specific drugs or biomedical devices manufactured by the companies that sponsor the trips³²; physicians who join drug company advisory boards³² (Fig. 5) or help create industry-supported clinical practice guidelines^{30,33}; physicians who receive payments from industry for consulting or for enrolling patients in clinical trials^{34,35}; physicians who affix their names to articles drafted by industry-hired ghostwriters³⁶⁻⁴⁰; and physicians who accept substantial company-sponsored gifts or all-expense-paid trips.⁴¹⁻⁴³ These and other kinds of inappropriate, unprofessional, or questionable physician interactions with big business are discussed in depth and in riveting fashion elsewhere³² (Fig. 6).

The pharmaceutical industry's effort to alter physicians' behavior has largely succeeded,⁴³ and the process usurps the physician's independence while increasing the retail price of the product. From 1997 to 2005 in Minnesota alone, drug makers paid at least \$57 million to doctors, nurses, and other health care workers.⁴⁴ Another \$40 million went to clinics, research centers, and other organizations. More than 20% of the state's licensed physicians received money. In fact, one physician received more than \$798,000, while another took in \$710,000.

More insidious than its overt efforts is the pharmaceutical industry's subsidy of continuing medical education (CME),^{30,45} including professional publications,⁴⁶ nota-



Fig. 5 Conflict of Interest, by Mike Adams and Dan Berger. Reproduced by permission of News Target Network.

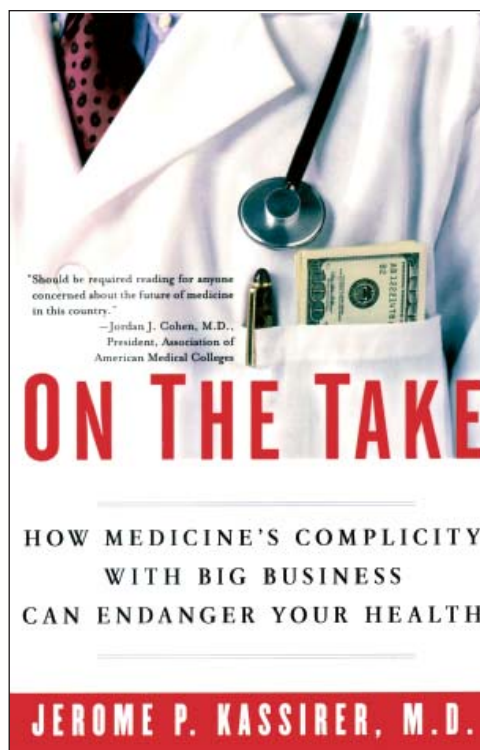


Fig. 6 Front cover of *On the Take*.³² Copyright © 2005. Used by permission of Oxford University Press, Inc.

bly journal supplements.⁴⁷ In 2005, the tab for such subsidies in the United States exceeded \$1.1 billion. From the industry's perspective, it is money well spent, because most practicing physicians must accrue a certain number of accredited CME hours to maintain their licensure. By sponsoring CME activities, the company creates an ideal marketplace for its products.³⁰

Medical Research

Dishonesty in medical research boils down to 2 basic kinds of participants: 1) ambitious investigators whose quest for fame and glory overshadows whatever integrity they might have, and 2) financially motivated drug companies that spare nothing in their attempts to capture a dominant share of the pharmaceutical market.

Misconduct by ambitious investigators has been a recurring problem for the American scientific community since the early 1960s.⁴⁸ One of the most widely publicized examples of such misconduct occurred in the early 1980s and involved a brilliant young clinical investigator at Harvard who fabricated an extraordinary series of published findings.⁴⁹ His deceit extended from his days as a college student through his medical residency and 2 different fellowships.⁵⁰ As a postscript to the story, a researcher close to the scene said, "The man could have faked his way through a lifetime of research and have been greatly honored. We all know scientists like that."⁵¹

More recently, a South Korean scientist attracted worldwide attention and became an instant international celebrity when he and his co-workers reported a monumental breakthrough—the cloning of a human cell.⁵² Shortly thereafter, he and his colleagues reported the creation of stem-cell lines from 11 patients.⁵³ Upon careful investigation of these 2 studies, Seoul National University concluded that a significant amount of the data had been fabricated.⁵⁴ Disgraced, the scientist now faces charges of fraud, embezzlement, and violation of bioethical laws.⁵⁵ Other cases of fraudulent research continue to surface with disturbing frequency,^{48,56-60} signifying that scientific misconduct is endemic in today's society.⁵⁷



Fig. 7 Dr. Pinocchio, by Bonnie Blue.

The deceitful research and business practices of financially motivated drug companies are the targets of a relatively new, widely acclaimed book⁶¹ (Fig. 8). Viewed as a scorching indictment, the book leaves little need for further comment on the subject; accordingly, I will cite only a few additional reports.

In an effort to determine the safety of calcium-channel antagonists in the treatment of cardiovascular disorders, Stelfox and his group⁶² examined 70 articles—30 of which they classified as supportive, 17 neutral, and 23 critical. They found that authors who supported the use of calcium-channel antagonists were significantly more likely than the neutral or critical authors to have financial arrangements with manufacturers of calcium-channel antagonists (96%, vs 60% and 30%, respectively; $P < 0.0001$).

Bekelman and associates⁶³ searched MEDLINE from 1980 to 2002 for all English-language studies containing original, quantitative data on financial relationships among industry, scientific investigators, and academic institutions. In their systematic review, they found strong and consistent evidence that industry-sponsored research tends to draw pro-industry conclusions.

Heres and colleagues⁶⁴ reviewed results of 42 head-to-head studies that were funded by pharmaceutical

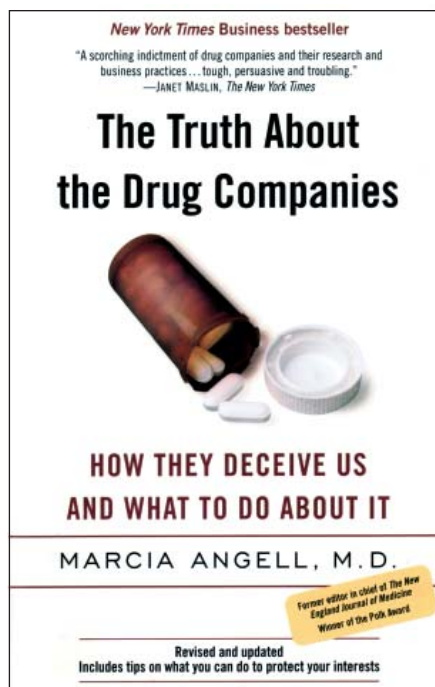


Fig. 8 Front cover of *The Truth about the Drug Companies*.⁶¹ Copyright © 2004. Used by permission of Random House, Inc.

companies and that targeted second-generation antipsychotic agents. In 90% of these studies, they found that the overall outcome favored the sponsor's drug. Their review also found that only studies with significant findings tend to be published, an observation that led Melander and co-workers to coin the phrase "evidence b(i)ased medicine."⁶⁵

A very recent report by Turner and fellow investigators⁶⁶ reinforces the impression that we are under assault by evidence-b(i)ased medicine. These workers obtained 74 reviews from the Food and Drug Administration (FDA) for studies of 12 antidepressant agents that involved 12,564 patients. Just over half (51%) of these FDA reviews had a positive result. The authors then conducted a search to determine which of the 74 studies had been reported in the medical literature. They found that 51 of the original 74 studies had been published, but that 94% of those 51 had appeared as positive reports. The authors also compared the effect size derived from the entire FDA data set with the effect size in the published articles. Separate meta-analyses of the FDA and journal data sets showed an overall increase in effect size in the published articles of 32%, with a range of 11% to 69% for individual drugs. It was not determined whether the bias toward publication of positive results occurred because authors and sponsors did not submit certain manuscripts or because the journal editors and reviewers rejected those manuscripts—or both. Whatever the reasons, the widespread and potentially harmful effects of such selective reporting are undeniable.

From the aforementioned studies and more,^{67,68} one thing is clear: bias in drug trials is common and overwhelmingly favors the sponsor's product.⁶⁹

Medical Literature

Fabricating or manipulating data is the most egregious form of dishonesty in the medical literature.^{48,56-60} In most cases, however, its detection is virtually impossible. Editors can do little more than trust the integrity of their contributors and the astuteness of their reviewers, but that approach falls short. Consequently, the prevalence and extent of fabricated or manipulated data in the medical literature remain problematic. So caveat lector—let the reader beware!



Fig. 9 *Science/Pseudoscience*, by Sidney Harris. Reproduced by permission of ScienceCartoonsPlus.com.

Of the many types of dishonesty in the medical literature,⁷⁰⁻⁷⁶ plagiarism is the most common and the only one easily detected and uniformly condemned.^{72,73} The rest are much harder to prove, and, even when discovered, are frequently condoned. For example, authors may digitally manipulate the color or content of original images,⁷⁶ deliberately discard data that do not fit the mold, design studies that yield only desired results, or rig references—that is, cite evidence that supports their view and ignore evidence that opposes their view.⁷⁰ They may also steal from themselves—autoplagerism^{73,74}—and submit the same material, rearranged as new articles, to several different journals. And they may allow their names to be listed as authors when they have made no real contribution to the work published.³⁶⁻³⁸ Conversely, it is common practice to omit from authorship the names of people who made substantive (if peripheral) contributions: internists or surgeons, for example, may not credit radiologists and pathologists whose imaging and histopathologic studies contributed significantly to the resolution of a particular medical or surgical problem.

Another source of dishonesty involves the peer reviewers of medical manuscripts. When these individu-

als have a vested interest in a particular matter, they may approve or reject an article simply because it favors or contradicts their own interests.^{70,71,75} Their decisions may also be swayed, one way or the other, by their knowledge of who wrote the article.⁷⁵ And in some cases, they may use ideas pilfered from articles that they have rejected.⁷⁰

In recent years, ghost authorship—also referred to as ghostwriting—has come under special scrutiny.^{36-40,77-79} Many articles appearing in scientific journals under the bylines of prominent physician-scientists are, in fact, written by professional medical writers who are paid by drug companies or, in some cases, by the journal itself. The consequences can be devastating, because doctors worldwide use information from these apparently objective articles to guide the care of their patients. In truth, however, the articles are merely part of a marketing ploy to promote a product or add prestige to a journal.

Hiring ghostwriters to draft articles for medical journals serves the editors and nominal authors alike. Physician-scientists advance their careers in a trouble-free fashion by accumulating high-profile publication credits, while journal editors get well-written articles that carry the authority of well-credentialed physician-scientists.

The World Association of Medical Editors views ghostwriting as unacceptable and has tightened its policy on such practice.⁷⁹ In addition, many medical journals now require authors to specify their contributions to a paper, acknowledge any conflicts of interest, disclose any help in writing, and identify any financial support.⁸⁰

Finally, even some editors misbehave, at times outrageously:

Sir Cyril Burt stars in the classic case of editorial misconduct. His important—and much disputed—work on intelligence was important in designing education systems. He founded a journal called the *British Journal of Statistical Psychology* and was its editor. He published 63 of his own articles and often altered the work of others without permission, sometimes adding favourable references to his own work. Once he published a letter he wrote himself under a pseudonym and a response he also wrote himself under another pseudonym in order to attack a colleague.⁸¹

Because of the principle of editorial freedom, editors have been unwilling to police themselves. Consequently, a need exists for a code of practice to which all medical editors are held accountable. And a mechanism should be developed to discipline the offenders.

Comment

What causes dishonesty at every level of our profession? In considering the answer, I find 2 factors working in

synergy. The first is the background of intense competition. We compete to get into medical school and compete to stay there. We compete for internship and residency positions. And we ultimately compete for patients, research grants, or whatever. The other factor is human frailty—particularly ignorance, greed, the fear of being found wrong, and the need for aggrandizement. Patients often foster our frailties by conferring god-like qualities on us. We, in turn, accommodate that perception in order to protect the image for them, as well as for our colleagues and ourselves.

Is there a cure? I think not, human nature being what it is. But I do think that we can reduce the level of dishonesty in medicine and the adverse effects of such misconduct on our profession. First, we must acknowledge that dishonesty exists. Second, we must create and implement strategies to combat it. Third, we must have the courage and means to administer swift, appropriate punishment. In that light, I favor expulsion of any medical student or house officer caught cheating or flagrantly lying. I favor media exposure of researchers who manipulate or fabricate data. And I favor notifying state medical boards of practitioners who are clearly incompetent or who act unprofessionally. Like it or not, that's what the public expects of us, and well it should. No measures will work, however, unless we serve as role models of integrity and honesty for each other.

Addendum

As this manuscript was going to press, *The New York Times*⁸² highlighted 2 additional cases of apparent misconduct by peer reviewers. One involved a prominent diabetes expert at the University of Texas Health Science Center in San Antonio. After agreeing to review a confidential drug study for *The New England Journal of Medicine*, the expert faxed the study to GlaxoSmithKline, tipping the company to the imminent publication of safety questions regarding its diabetes drug Avandia. According to the journal *Nature*,⁸³ the expert said, "Why I sent it is a mystery. I don't really understand it. I wasn't feeling well. It was bad judgment." Disclosing the contents of a pending article violates not only *The New England Journal's* rules for peer review, but breaches professional ethics in science and medicine. Furthermore, there is a potential conflict of interest in this case: the expert acknowledged having received \$75,000 in consulting and speaking fees from GlaxoSmithKline since 1999.

The 2nd case involved a physician from Columbia University who had peer reviewed a study of cardiac stents for *The New England Journal of Medicine*. Before the study was published, the reviewer commented on its results at a medical conference. In response, the journal barred the physician from reviewing its articles for 5 years and prohibited him from submitting commentary for publication in the journal during that period.

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