Mounting evidence indicates that the practice patterns of physicians may be improved by an increased attention to social science. As such, the general features of the arguments in “Reforming Medical Education” are easy to endorse. It seems, however, that the applications of social science are needed more urgently in the structure of medical practice than they are in the activities of particular physicians. In what follows, I expand on this point through a discussion of two dogmas of empirical training in medicine: the dominance of physical sciences and the legitimacy of intuitive judgment.

Dogma #1: The Dominance of Physical Sciences: Guidance from the Social Sciences is not Needed

Although no explicit discussion of the amount of social science currently employed in medical training is included, that the physical sciences dogma guides medical education is clearly implied by the arguments offered in “Reforming Medical Education.” In turn, it is suggested that failures of the medical system may be redressed through increased emphasis on social science. For example, “to reduce error and improve quality, physicians must be trained to focus on system design, not on individual failures. . . [and] social science frameworks and methods could provide the perspective that physician training currently lacks.” (2, 53-55; 3, 6-8) Further, “with minimal education
on the vast literature on social, economic, behavioral, and environmental determinants of health, physicians with an exclusively bio-medical focus may limit their interventions to bio-technology.” (5, 25-31) The problem of no such training: underutilization of screening for alcohol, drug use, and depression may result. And finally, “successful reform aimed at delivering appropriate, affordable health care will require physicians who are trained not only in bio-medicine, but also in the social science disciplines.” (7-8, 55-4) Three aspects of the author’s recommendation to increase attention to the social sciences in medical practice tease out the structural, rather than individual, need for reform: the current state of affairs, the aim of the recommendation, and the scope of the recommendation.

The Current State of Affairs

Many future physicians in the United States get a minimal amount of formal training in the social sciences. Liberal arts curricula tend to require some exposure to the various areas of inquiry, including the social sciences. Moreover, some institutions include psychology, if nothing else, as part of the pre-med program. On the other hand, when these students enter medical school and residency programs, this aspect of the curricula is minimal, if not entirely absent. As such, a recommendation for increased emphasis on social science seems appropriate.

Interestingly, the nature of the literature that medical practitioners are responsible to read prepares them to understand and apply the conclusions of many social science investigations. Take for example the conclusions of the Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT). The treatments tested
here depended on bio-medical science for their development, but the conclusions are cast, not in terms of the certainties of bio-physical interactions, but in terms of outcomes across populations: “Our data indicate that compared with doxazosin, chlorthalidone yields essentially equal risk of CHD [coronary heart disease] death/nonfatal MI [myocardial infarction] but significantly reduces the risk of combined CVD [cardiovascular disease] events, particularly CHF, in high-risk hypertensive patients.” (ALLHAT, 2000) This, like many social science conclusions, does not provide physicians with an algorithmic certainty, but with a measured prediction. All of this suggests that physicians are already predisposed to accept and employ the kinds of conclusions that social science produces. And yet, as indicated in the critiques referenced by the author of “Reforming Medical Education,” these conclusions are not reflected in medical practice.

The Aim

As noted above, I agree that medical practice should be informed by social science. It seems, however, that the means recommended in “Reforming Medical Education” are misguided. When recommending that medical school applicants be evaluated ‘whole cloth’ (page 10, line 14), the author indicates a need for future physicians to have expertise in natural science, social science, and, potentially, other areas as well. This is to overreach. To require of physicians an expertise in yet another area introduces potential harms without providing likely benefits. For example, physicians already have too much to which they are expected to be attentive. (Straus and Haynes, 2009; Saint et al., 2000) With well-known limits on memory and cognition, to
expand this domain is just as likely to produce more errors (through forgotten facts or unknown conclusions) as it is to correct oversights. While more attention needs to be paid to social science, it is not clear that this should be the attention of the individual practitioner.

Another recommendation that may be misguided concerns the nature of the training in medical school. The following criticism is raised: “today’s medical student focuses on memorizing the existing biomedical canon rather than on asking new questions and applying research methods to answer them.” (8, 41-44) Unless they plan to perform clinical research as the primary investigator on a formally designed protocol, the application of research methods will tell physicians very little about the best patterns of practice. The patient pool will be small enough that any conclusion will have nominal warranted confidence. Even though the application of social science research methodologies in general may be beneficial for the structure of medical practice, the application of these methodologies by the individual physician can provide only a very narrow benefit for individual practitioners.

Though it goes unstated in the “Reforming Medical Education,” perhaps the questions and research the author has in mind would focus not on patients but on the physician. This could be a productive area for new research. For example, it may be that a particular physician is astute at recognizing and/or treating some conditions and has some blind-spots recognizing and/or treating some others. Only through careful analysis of their work over time could such trends be identified. Such an analysis would require the methodologies of social science, and so expertise in social science will be required of
the researcher. It should be noted, however, that the physician him or herself would not need to be the researcher and, in fact, it may be better if they are not.

As I’ve noted elsewhere (Schwab 2008), there is some resistance to using the conclusions of social science to guide medical practice. It is here that I think the recommendation to incorporate social science in medical training finds its greatest traction. By including social science in the formal curriculum in medical school and beyond, it may be possible to cultivate a certain level of understanding and respect for the conclusions of social science. This may, in turn, encourage physicians to apply the conclusions of social science more readily. Not only might this strategy include formal training in the social science methodologies, but it could also focus on successful applications of social science to medical practice. For example, the successful use images of germs as screen savers in hospitals to remind medical practitioners to wash their hands (Dubner and Levitt, 2006) could be pointed out as an effective application of social science to improve health outcomes.

The Scope

Focusing recommendations on the training of physicians carries the distinct advantage of focusing on the centerpieces of medical practice. A great deal of medical care, however, is provided by nurses, physician assistants, and other non-physician medical practitioners. As such, a narrow emphasis on physicians will ignore large swaths of patient care where a physician is not the one providing care. If social science is to play a more prominent role in the care of patients, its inclusion in training and the respect for
its conclusions will need to go beyond physicians to the other members of the health care team.

Moreover, the emphasis of “Reforming Medical Education” centers on the most intense parts of medical training—medical school and residency. While an appropriate starting point, the 30 or more years of continuing education should also be included. Otherwise, whatever progress is made in cultivating respect for the conclusions of social science may be lost or forgotten.

Dogma #2: The Legitimacy of Intuitive Judgment: Innovative Intuitions are Good Sources of Physician Judgment

By “innovative intuitions” here I am referring to those judgments that are not directly supported by formal research. Formal research takes a number of forms—clinical trials, observational studies, registries, etc. Spaces beyond the reach of this research produce a problem for physicians and other medical practitioners. Certain medical problems ask for judgment where there is no direct evidence. In this space, physicians are encouraged to exercise individual judgment that, presumably, reflects the received wisdom of the various physical sciences as well as the known treatments for similar conditions. Take for example, the American Medical Association opinion on physician prescribing patterns: “Physicians should prescribe drugs, devices, and other treatments based solely upon medical considerations and patient need and reasonable expectations of the effectiveness of the drug, device or other treatment for the particular patient.” (AMA CEJA Opinion 8.06 Prescribing and Dispensing Drugs and Devices, emphasis
Because “reasonable expectation” is never clearly defined, it is left to the reader to guess at what this means. “Clinically proven” or “evidence-based” would have narrowed the emphasis but were not used, and so the best interpretation of the phrase will be quite broad. Similar themes are evident in the recommendations of Great Britain’s General Medical Council to physicians:

“When prescribing a medicine for use outside the terms of its licence you must:

- **Be satisfied** that it would better serve the patient's needs than an appropriately licensed alternative
- **Be satisfied** that there is a *sufficient evidence base and/or experience* of using the medicine to demonstrate its safety and efficacy.” (GMC, 2008, emphasis added)

To ‘be satisfied’ is not defined further and so invites a similarly broad interpretation. Both standards suggest that physicians, when making judgments beyond the domain of formal research are expected to reflect on the body of received knowledge they have diligently memorized and see if their recommendations make “sense.”

Some perspective from social science would challenge the unadulterated protection and endorsement of intuitive judgments. Though there is not time in this short commentary to review the evidence in detail, the likelihood of bias in physician judgment is too substantial to be ignored. These biases may be those identified in the robust conclusions of cognitive psychology or the careful critiques of intuitive views of understanding. Such challenges admonish much more than caution about intuitive judgments of physicians—they suggest a healthy skepticism. Specifically, as the
conclusions of social science admonish, any future professional guidance must include less respect for individual physician judgment, and more caution about the risks of such judgments.

An International Perspective

In closing, a few words should be said about a suggestion raised in the abstract (though not discussed in the body) of “Reforming Medical Education.” Specifically, the author raises the possibility that physicians in the United States may need social science education more than physicians in other developed countries. Even at first blush, such distinctions between the United States and other countries are tough to justify. Though the United States is distinct in that it is the only developed country that does not provide something approximating universal health care, all the other developed countries are by no means a monolithic group. Though they share a single characteristic (the provision of health care), the means by which they achieve this are diverse. As such, the lumping of their training needs is unwarranted.

More importantly, the improvements made possible by social science training at the level of individual physicians are both narrowly circumscribed and unlikely to be affected by the provision of universal health care coverage. For example, take physician ownership of supplementary offices and medical technologies (e.g., MRI machines) for which they receive payments upon use. In such situations, a conflict-of-interest is likely to undermine the quality of physician judgment. And yet, government provision of health care coverage will not eliminate this conflict. That is, the source of the financial
reimbursement has no effect on the conflicts of interest and so universal coverage will fail to improve care in this area.

Summary

It is easy to endorse the general contours of the conclusions reached in “Reforming Medical Education.” These contours, in turn, highlight two dogmas of medical training: the dominance of the physical sciences and the legitimacy of intuitive innovations. Cursory analysis of these dogmas illustrates that our worries about the limited influence of social science on medical practice should be focused less on the practice patterns of individual practitioners and more on the systematic structuring of medical practice.

Bibliography


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1 I leave aside, for this essay, questions of medical education in non-empirical matters—e.g., humanities. Though this also seems to be needed, I will leave that to other times and spaces. Because the author’s emphasis focuses on medical education in the United States, I will focus my attention there. There will be a few things to say about differences between the United States and other locations near the end of this brief commentary.

2 For an explanation of how these biases apply to medical practice in detail see Schwab 2008.

3 See for example, JD Trout’s insightful essay, “Scientific Explanation and the Sense of Understanding” (Trout, 2002)