An Overview of the Literature:
"Does that One Slice of Pizza Matter?"

Before you pick up that slice of pizza and prepare to filter out the drug representative's pitch for the newest fluoroquinone antibiotic, consider this:

You may not be filtering as well as you think you are.

Promotional efforts by pharmaceutical companies—and, in particular, drug representatives, who bring with them pizza and sandwiches that seem like the ambrosia of the gods to the dulled palate of the overworked and underfed medical student or intern—influence physician prescribing patterns in ways that do not optimize patient care. This is an outrageous claim that is bound to raise a few remarks:

"Is there an association?"

Avorn et al.[1] surveyed physicians about the use of two drugs which the scientific literature clearly demonstrated were ineffective yet were heavily marketed as effective. Most of the surveyed physicians felt detail men (54%) and drug advertisements (68%) were minimally important sources of influence. Yet 71% believed that "impaired cerebral blood flow is a major cause of senile dementia" and 49% believed propoxyphene to be "pharmacologically more effective than aspirin as an analgesic." Both of these claims were unsupported in the scientific literature.

In a case-control study based on data from a review of formulary addition requests, Chren and Landefeld[2] found that physicians who had requested formulary additions were more likely (than physicians who made no requests) to have interacted with industry representatives. This relationship was noted to be strong, consistent across different types of physician-industry interactions, specific, and independent of confounding factors.

"Others might be influenced, but *I'm* too well-trained for that."

And right you are to believe that. A survey of residents by Steinman et al.[3] noted that only 39% of those surveyed believed that promotions could influence their own prescribing. Amusingly enough, 84% believed that promotions could influence the prescribing behavior of *others.*

Ziegler et al.[4] analyzed noontime teaching conference presentations and documented an 11% rate of false statements made by pharmaceutical representatives promoting their products. Only 26% of the physicians who attended these presentations recalled any of the false statements made.

Orlowski and Wateska[5] interviewed physicians prior to their participation in two industry-sponsored symposia held at luxurious resorts. Nine out of 10 physicians attending the Drug A symposium and eight out of 10 physicians attending the Drug B symposium asserted that such enticements would in no way influence their prescribing behavior. However, based on pharmacy inventory usage reports of physicians who attended the symposia, the authors demonstrated a statistically significant increase in prescribing of both drugs after the physicians attended the symposia.

"Okay, fine, but what we need to know is the effect on patients."

In 1993, the Fifth Report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure (JNC-V) recommended diuretics and beta-blockers as first-line drug therapy for hypertension. Based on an analysis of all prescriptions for anti-hypertensive medications dispensed by 35,000 pharmacies in 1992-95, Siegel and Lopez[6] found that use of calcium channel blockers increased, while use diuretics and beta-blockers actually declined.

One survey of patients and physicians documented that patients felt pharmaceutical gifts were more influential and less appropriate, compared to their physicians.[7]

"But we're *required* to go to these seminars, and when I get there I'm just *so hungry*. Is it that big a deal?"

In consideration of the evidence presented—not to mention weighty arguments from the perspective of medical professionalism[8]—is it such a sacrifice of Joban proportions to just forgo that slice of pizza? For 10 extra minutes of your time and the price of a meal in your hospital cafeteria, you can get through the episode with your integrity intact and know comfortably that you will be the better clinician for it.

To quote Jerome Kassirer,[9] former editor-in-chief of the *New England Journal of Medicine*:

> Deans of medical schools and training program directors must do a better job of addressing conflict of interest. Where professionalism is concerned, they must teach that there is no free lunch. No free dinner. Or textbooks. Or even a ballpoint pen.

BACKGROUND

Few topics are guaranteed to arouse a meaty (and heated) discussion among medical students, interns, and residents than the pharmaceutical industry's promotions aimed at health care professionals. Proponents contend that such promotional efforts are a useful source of educational material, both for physicians and patients.[10-12] Critics argue forcefully that marketing influences physician prescribing decisions but not necessarily for the benefit of their patients.[8,13-15]

In a cost-conscious health spending environment, where national expenditures on pharmaceutical drugs have become the fastest growing component of the health care budget,[16] the pharmaceutical industry's marketing habits have attracted a great deal of attention. While direct-to-consumer advertising has increased dramatically in recent years, promotion to health care professionals still accounts for some 80 percent of drug marketers' expenses.[17] Between 1996 and 2000, industry spending on promotion to health care professionals increased from $8.4 billion to $13.2 billion.[17]

As medical students, we are just beginning our training to become physicians. From the perspective of industry marketers, we represent a virginal, unsullied mass of potential drug prescribers. Marketing may have an educational component, but we need to train ourselves to think critically so as to sort the wheat from the chaff. To quote Marcia Angell,[13] former editor of the *New England Journal of Medicine*:

> But to rely on the drug companies for unbiased evaluations of their products makes about as much sense as relying on beer companies to teach us about alcoholism. The conflict of interest is obvious.

Shaughnessy et al.[18] provide a useful framework for identifying commonly exploited fallacies in pharmaceutical promotion. Wilkes and Hoffman[19] describe a newly implemented curriculum module for third-year medical students designed to generate critical thinking about the claims of drug marketers. Wolfe[14] also highlights a number of other educational resources, notably a curriculum currently under development by Dr. Robert Goodman (founder of www.nofreelunch.org).

For more information:

Lexchin[20] reviews the literature on pharmaceutical promotion for 1978-93, while Wazana[21] reviews the literature for 1994 to the present.

No Free Lunch (www.nofreelunch.org) was established with the goal of encouraging evidence-based rather than promotion-based prescribing practices. The site features links to information on pharmaceutical promotion, downloadable Power Point presentations, and a user's guide to reading scientific literature.

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