The pharmaceutical industry: Marketing tactics present potential detriment to the quality of patient care and the integrity of medical research

HOIMAN CHIU

WRITER’S COMMENT: Thank you to Professor Brad Henderson for his thought-provoking criticism of my work and his support and time when I faced difficulties in the writing process. When I was writing this review in the fall of 2004, broadcasts about dysfunctional medical devices and dangerous medications were not yet common on the 7 a.m. news. But in the course of merely half a year, what’s considered newsworthy has changed, and lay people are now familiar with the names of the United States’ major drug corporations and the associated controversies surrounding arthritis drugs, as well as the latest predicament involving Guidant Corporation’s malfunctioning pacemaker/defibrillator combo, about which some physicians and patients have criticized Guidant for withholding negative information. These current affairs have alarmed many patients and physicians. I hope this paper will provoke readers to think about the root of these pharmaceutical controversies.

—Hoiman Chiu

INSTRUCTOR’S COMMENT: Having Hoiman Chiu, a remarkable young scholar and writer, as a student in my Fall 2004 Science Writing class was absolutely delightful. She came to my office hours regularly with drafts that displayed excellent planning and a great deal of proactive, exhaustive research. Although Ms. Chiu was obliged by my corresponding assignment to incorporate the “review paper twist”
of using second-hand data as a primary driver, the general organization of the paper displays superb rhetorical craft: first, introduce topic, scope, and thesis; next, defend thesis with a series of points built upon specific claims and corresponding evidence; and, finally, wrap things up, echoing the paper’s thesis with the thrust and volume of solidly laid retrospect. Although Ms. Chiu is a pre-med student, she might have considered pre-law as well, as one of the joys of reading this paper is the way it dazzles and engages with its argument. Some of Ms. Chiu’s claims are conservative and some are rather bold, even risky. Yet all are developed with well-chosen “courtroom evidence” that is displayed with winning polish and convincing panache.

—Brad Henderson, University Writing Program

Abstract

This review paper examines the extent of the pharmaceutical industry’s influence on patient care and medical research through analyzing the industry’s marketing tactics. These tactics, categorized into five groups arranged in the order of progressively increasing detriment as related to public health, are as follows: physician-targeted promotions, direct-to-consumer (DTC) advertising, unethical recruitment of physicians, researchers’ conflicts of interest, and data manipulation in clinical trials. Among the paper’s findings are that drug companies’ promotions do subconsciously influence physicians’ prescription patterns. Moreover, heavy advertisement to consumers correlates strongly with sales increases for the promoted drugs, but this is not in the best interest of patients, in terms both of resultant cost and of health outcomes for consumers. The pharmaceutical industry’s public relations firms also unethically recruit physicians to endorse their companies’ clinical studies. In addition, researchers’ financial conflicts of interest influence the results in corresponding studies. Finally, and most grievously, pharmaceutical companies manipulate research data to prevent negative data leaking to the public. Much evidence indicates substantial economic influence on the medical field by the
pharmaceutical industry. Yet even though the pharmaceutical indus-
try has threatened the reliability of medical care and the integrity 
of research, the reputation of quality healthcare in America has not 
yet altogether diminished. This quality depends mostly on the mo-
rality of the next generation’s scientists and doctors, and, if this co-
hort acknowledges and advances positive changes in the pharma-
ceutical sales spectrum, the future of prescription drugs and health 
care may be bright.

Introduction

The pharmaceutical industry plays a significant role in the
United States’ economy. According to the National Institute 
for Health Care Management [NIHCM] (2002), U. S. con-
sumers spent $152.5 billion on prescription drugs in 2001. 
This amounts to 10% of total health spending and accounts 
for 14.9% of the U. S. Gross Domestic Product (GDP) as of 
2002 (NIHCM, 2002; Pear, 2004). Public health activists 
have voiced their concerns about the pharmaceutical indus-
try’s economic power and influence in both the public media 
and specialized journals. After all, if large corporations can 
influence politics and legislation, pharmaceutical companies 
can just as likely influence medical care and research. This 
paper will attempt to review the extent of the pharmaceutical 
industry’s influence on patient care and medical research 
through analyzing its marketing tactics. These tactics are ca-
tategorized into five groups: physician-targeted promotions, di-
rect-to-consumer (DTC) advertising, unethical recruitment of 
physicians, researchers’ conflicts of interest, and data mani-
pulation in clinical trials.

Since the pharmaceutical industry’s economic power 
presents an ethical issue that concerns professionals and the 
general public, I have drawn my sources from ethics journals, 
e.g., the Journal of Medical Ethics; medical journals, e.g., The
Discussion

Physician-targeted promotions

Drug companies’ promotions subconsciously influence physicians’ prescription patterns. In 2002, the pharmaceutical industry spent $15.63 billion on promotion, which included promotional office supplies, all-expenses-paid events, sales representatives, and awards to physicians (Parker & Pettijohn, 2003). In a presidential address presented at the 69th Annual Meeting of the Pacific Coast Obstetrical and Gynecological Society in October 2002, Dr. Israel reported that, of this promotional budget, $8,000 to $13,000 is spent on each physician. In Orlowski and Wateska’s prescription pattern study, the doctors assert that the pharmaceutical company’s all-expenses-paid seminar at a “popular sunbelt vacation site” will not affect their objectivity. Yet, when Orlowski and Wateska compared the number of prescriptions written for the two promoted drugs before and after the physicians attended the seminar, they found that the prescriptions for those two drugs, as compared to the national usage data, significantly increased after the seminar.

Promotion-induced subconscious influence has been widely studied. A ten-year study, published in 1990, on internists at seven university hospitals found that frequent contact with sales representatives changed the internists’ prescription practices (Israel, 2003). Eleven years later in 2001,
Parker and Pettijohn reached the same conclusion: “Doctors who had contact with pharmaceutical representatives were 13 times more likely to ask that a particular drug be added to an insurance plan’s list of approved drugs” (2003). An ideal physician provides his patients the best available care for the most economical price; however, despite physicians’ assurance to the contrary, studies show that promotions do influence how doctors prescribe. The patients may, in turn, incur higher treatment costs, since doctors under subconscious influence tend to prescribe the more expensive alternative, the promoted drug. In theory, though, the patients are still receiving quality care.

Direct-to-consumer (DTC) advertising

Heavy advertisement to consumers strongly correlates with sales increases for the promoted drugs, but this is not in the best interest of patients, either. In 1999, 30.8% of the $1.6 to $2 billion direct-to-consumer (DTC) advertising expenditure targeted “oral antihistamines, antidepressants, [cholesterol-reducing] drugs, and anti-ulcerants” (Parker & Pettijohn, 2003). Whereas between 1990 and 1998 the number of patients who sought medical attention for allergy symptoms hovered around 14 million, the number sharply rose to 18 million in 1999. Parker and Pettijohn argue that drug advertisements prompted those who did not need visits to the doctors to imagine that their conditions were more serious and then to go to doctors on a mission (often successful) to obtain prescription medications (2003).

If DTC were to have motivated certain patients only to visit their doctors more often, the harmful impact of DTC would be debatable. The larger and more important problem of DTC concerns a new drugs’ health risks. New drugs are FDA-approved, but not time tested; their long-term effects are
unknown; many patients who can be effectively treated with equivalent, less expensive, older drugs are taking a risk with their health, albeit relatively small, when using newer drugs (Elliott & Ives, 2004). Every once in a while, a catastrophe does occur after a drug matures on the market. For example, on 30 September 2004, Merck withdrew rofecoxib (Vioxx), a best-selling arthritis drug, from stores after follow-up studies showed that Vioxx doubles the risk of heart attacks and strokes if taken for over 18 months (Singh, 2004). Up to then, Vioxx had been the United States’ most heavily advertised drug and had reaped a 300% profit increase and $1.5 billion in sales (Parker & Pettijohn, 2004). Only arthritic patients who previously suffered serious gastrointestinal conditions, such as ulcers, or who were allergic to aspirin were ideal candidates to be prescribed this new class of arthritic drugs, because the data appeared to show it was gastrointestinally safer than older drugs. The other arthritic patients who “might have done just as well with ibuprofen or other inexpensive over-the-counter remedies” unnecessarily risked their health by using new, heavily promoted drugs like Vioxx (Elliott & Ives, 2004).

Unethical recruitment of physicians

More detrimental than marketing tactics targeting physicians and patients are the pharmaceutical industry’s public relations firms unethically recruiting physicians to endorse specific companies’ clinical studies. In December 2003, Spears reported in Ottawa Citizen, a well-respected news source in Canada, that “a company rep . . . emailed Dr. Davis Healy a finished 12-page review paper . . . ready to present at an upcoming conference. And for convenience, Healy’s name appeared as the sole author, even though the psychiatrist had never seen a single word of it before.” Healy declined the of-
fer and offered to conduct his own study, but the “ghostwritten” paper still appeared at the conference, only under another doctor’s name (Spears 2003). Such unethical offers are not isolated cases; doctors receiving such recruitment letters often forward them to medical journals. Dr. Drummond Rennie, deputy editor of the *Journal of the American Medical Association*, stated that at one time his journal had received about twenty such forwarded letters (Spears 2003). Though unethical recruitment does occur, reputable professionals would not risk their name and prestige for so small an amount as $3000 to $5000, which, according to Rennie, is what was offered in the letters. Thus, the risk of moral collapse among physicians, and therefore skewed medical information arising from unethical endorsements, should be minimal. Yet if the offer becomes more enticing, this scandalous practice will place the reputation of medical professionals and the reliability of medical information at high risk.

**Researchers’ conflicts of interest (COI)**

A more common, if therefore more troubling, occurrence is researchers’ financial conflicts of interest (COI) influencing results in the corresponding studies. COI, defined by the International Council of Medical Journal Editors (ICMJE), includes “consultancy, employment, stock ownership, patent licensing, and honoraria and excludes financial relationships based on grants, awards, fellowships, free drugs or equipment, and authors serving as speakers or on an advisory board” (Friedman & Richter, 2004).

In October 2003, scientists Bernard Carroll and Robert Rubin sent a letter to the editors of *Nature Neuroscience* criticizing a colleague, Charles Nemeroff, for not disclosing his conflicting financial interest when he published a review article comparing the efficacy of antidepressant treatments. In the
article published by *Nature*, Nemeroff and co-author Michael Owens state the benefits of a lithium delivery system but fail to indicate that Nemeroff holds U.S. Patent 6,375,990 for this method. The article proclaims “impressive studies indicating . . . mifepristone . . . as very effective in the treatment of psychotic depression” (Carroll & Rubin, 2003). Carroll and Rubin contested that the studies Nemeroff and Owen’s article referred to were only two small-sample reports. Nemeroff and Owens did not refute this criticism in their reciprocal correspondence. Nemeroff furthermore failed to disclose that he held stock in Corcept Therapeutics, the company that markets mifepristone, and that he was given “the option to purchase 72,000 shares of Corcept stock at $0.0003 per share”; moreover, Owens did not disclose that he is a Corcept consultant (Caroll & Rubin, 2003). Such COI as patent ownership, stock ownership, and consultancy taint the objectivity of a published antidepressant evaluation.

COI is generally prevalent in clinical research. In a study that analyzed COI influence by examining primary research articles published in 2001 in the two largest and prestigious medical journals, *New England Journal of Medicine* and *Journal of the American Medical Association*, Friedman and Rich-ter found that for-profit corporations fund one out of every three primary research projects, that 38.7% of drug or treatment efficacy studies had authors with COI, that authors with COI often report positive results with the statistical significance of p<.001, and that privately funded studies frequently do not report negative findings (2004). These data suggest that either authors with COI have a special talent for research with positive outcomes, or researchers with COI are biased toward their own interests. If researchers are financially influenced to manipulate experimental data, doctors and patients are left to discover the negatives of a drug later on, when it is being used.
by mainstream consumers.

Data Manipulation
Beyond the research level, the evidence suggests that phar-
maceutical companies systemically manipulate clinical data to
prevent negative results from reaching the public. In 2000,
Searle announced that its newest arthritis drug, celecoxib
(Celebrex), the first of the new non-steroidal anti-inflammatory
drugs (NSAIDs), the COX-2 inhibitors, was gastrointestinally
safer than the older NSAIDs, such as ibuprofen. This claim
was important both for the patients and the marketer because
gastrointestinal complications from using the older arthritis
drugs account for approximately 107,000 hospitalizations an-
nually (Crawford, 2002). Celebrex was heavily marketed and
soon cost patients $2 per pill (Parker & Pettijohn, 2003). But
in 2004, when Group Health Cooperative of Seattle reviewed
Celebrex’s study protocol on the Food and Drug Administra-
tion’s (FDA) public information database, the agency found
that Searle had only reported the six-month results, which
showed that Celebrex performed better than the older drugs,
when the study actually ran for 12 months. At the end of the
12-month study, the results indicated that Celebrex performed
the same as compared to older drugs (Rennie & Mora, 2004).

Discretely reporting only positive results happened again
in studies done on selective serotonin reuptake inhibitors
(SSRIs), an antidepressant. Whittington et al. reviewed a se-
ries of published and unpublished articles and reported that
though the “published data suggest a favourable risk-benefit
for some SSRIs . . . the addition of unpublished data indicates
that risks could outweigh benefits of these drugs (except fluo-
xetine) to treat depression in children and young people”
(2004). Whittington et al. argue that, when combined, the re-
sults of both published and unpublished studies suggest that SSRI can possibly induce suicide in depressed children and that the amount of data against the positive results cannot be ignored. Here, data manipulation in the form of publication omission distorted the line of medical information for physicians and ultimately affected the quality and reliability of patient care.

**Conclusion**

The pharmaceutical industry’s economic influence on the medical field is substantial; among the five categories, the order of detrimental effect as related to public health, from least to most harmful, is as follows: physician-targeted promotions, direct-to-consumer advertising, unethical recruitment of physicians, researchers’ conflicts of interest, and data manipulation in clinical trials. Physician-targeted promotions and DTC advertising present the least harm to patients, because their impact on resultant quality of patient care is relatively small, though they do influence patients to spend more on more expensive drugs and extra doctor visits. How the risk of pharmaceutical companies’ unethical recruiting of doctors manifests depends on an individual doctor’s morality and ethics. The most harm possible to the medical field is from unreliable data, within the categories of researchers’ conflict of interest and data manipulation. Should scandalous trends continue, patients will continue to suffer from unreliable and dangerous health care.

However, despite much evidence of unethical influence on the medical field by the pharmaceutical industry, the overall reputation of quality healthcare in America endures. To prevent further degradation of our highly regarded health system, and a future collapse of faith, the U. S. government should re-
quire drug companies to register Phase II and III of drug trials in a national public registry to prevent non-reporting of controversial and/or negative data in unpublished trials. Moreover, for-profit drug companies should not be allowed to contract out their clinical studies, but rather should be required to give the funding to the FDA to manage outsourcing of studies. With medical ethics gaining momentum and slowly being incorporated into the medical school curricula and soon, hopefully, into the graduate school curricula, the quality of American health care will depend on both the capability and character of the next generation of medical scientists and doctors.

References


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