

Forum

The Relationship Between Medical Education and The Pharmaceutical Industry – Good Medicine or a Bitter Pill to Swallow?

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Forum

The forum section of *UTMJ* presents different viewpoints on an issue currently facing the medical community. The following article discusses the role of the pharmaceutical industry in the daily life of medical students and residents as well as the potential long-term effects of this interaction on future prescribing patterns. Two viewpoints are presented on this topic. The first is that aggressive advertisement by the drug industry may mislead medical students and residents, and therefore limits should be placed on the extent and nature of the interaction. This viewpoint is supported by Dr. Gordon Guyatt, Director of the Internal Residency program at McMaster University, who was instrumental in helping to adopt a “hands-off” policy at the Faculty of Medicine in Hamilton. The opposing viewpoint is that being exposed to the practices and methods of drug companies early in medical students’ careers may be an educational process that will strengthen skills in evidence-based medicine and expose future physicians to the ever-increasing role of industry in the health field. The ultimate aim of Forum is to broaden the reader’s understanding of this topic and to stimulate constructive discussion.

Upon browsing any medical journal, one cannot help but notice the bright colours, catchy phrases and bold statements such as “. . . drug A is more effective against disease X than the standard drug B”, nestled between articles on randomized controlled trials of new anti-hypertensive agents and meta-analyses on immunization regimens in children. Advertising in journals is one of many methods by which the pharmaceutical industry attempts to market their new products to medical professionals. Other methods include free drug samples, books, medical instruments and, at the other end of the spectrum, all-expense paid trips to conferences. To a physician in practice, this aggressive means of advertising is not surprising given the need for expanding knowledge and disseminating information on novel treatments for disease. However, concerns have been raised by the medical profession about the extent of industry infiltration into medical education at the undergraduate and post-graduate levels, with the potential for influence on prescribing patterns. The following article will present arguments for and against the interaction between medical students and the pharmaceutical industry.

Good Medicine

Health practitioners, including medical students and residents, live immersed in a world full of commercialization and industry promotion. To ignore or restrict exposure to such an environment is not only impossible but also impractical. The extent of contact with industry-based information is unavoidable

except in the most sheltered of situations, and to completely prevent the exposure to such an atmosphere during the course of medical training may leave people vulnerable to information misinterpretation. Moreover, exposure to industry promotion at an early stage of medical training will help individuals understand the costs and benefits of the nature of the relationship between practicing physicians and pharmaceutical companies.

Pharmaceutical companies are an integrated part of the health care system, producing some of the world’s most vital life-saving drugs. These industries are also one of the foremost sponsors of educational rounds, research, and conferences that help to ensure the widespread adoption of future medicines and technologies known to considerably benefit patients.^{1,2} Indeed, medical students and residents need to know about emerging drugs and popular drug brands that they may encounter during their clinical rotations, and even more so once they are out of lecture halls.³ Therefore, disallowing contact of students and residents with pharmaceutical companies may actually put them at a disadvantage when dealing with emerging medical drugs and practices. Restricting such access would also undermine the disposition and conscientiousness required of students and residents in the practice of medicine.³ It is important that students and residents learn to interact in a constructive manner with pharmaceutical companies and their representatives, and also to delineate between low and high-quality information. However, such interactions should not be totally unrestrained.

Pharmaceutical companies, despite being the creators and first hand promoters of live-saving treatments, are still profit seeking businesses. It is undeniable that gifts from such companies may influence the attitudes and prescribing practices of physicians.^{1,2,4,5} The ethics of physician-industry interactions is crucial. Therefore, guidelines should exist to modulate the interaction between medical practitioners and the industry.^{5,6,7} These efforts will help students and residents critically appraise the multitude of promotions they will encounter during their careers.⁷ For example, sponsorship can be willingly accepted from industries for research, conferences or educational rounds only with the clear understanding that the support will be appropriately acknowledged, but no collaboration or marketing links will be associated with the program.⁴ In this manner, control would not be placed at the industry level, but rather at the level of the educational institution. However, very few programs exist which give formal instruction on how to deal with pharmaceutical industries. For example, only 25% of Canadian family medicine programs have proposed their own guidelines, and even fewer distribute these guidelines or give formal instruction on them.^{2,5} Furthermore, while studies show that the majority of students, residents, and physicians have no training on how to interact with industry, several individuals would support, and willingly aspire to have, such educational programs as part of their schooling.^{6,7}

Another prominent concern about industry interaction with medical students and residents has been the ability of such companies to influence individual attitudes and loyalties with free gifts, such as pens, notepads, meals, textbooks, pocket antibiotic guides, journal article reprints, and subsidized trips to conferences.⁷ Most of these gifts are inexpensive, and some have educational value (e.g., textbooks, journal articles). Should medical institutions restrict the role of pharmaceutical companies and deny students and residents interaction with representatives from these industries simply because they hand out free pens and notepads, or provide a free meal? Moreover, are students really sell-outs to industry because they feel an obligation to return the favour of a "freebie"? A study of 209 fourth year medical students showed that this is not necessarily the case. Ninety percent of the students in the study had received a textbook as a gift from a pharmaceutical company. Although approximately 89% of these students could recall the name of the book, only 25% accurately associated the named textbook with a pharmaceutical company or product.⁸ This result suggests that industries will not inevitably have a large impact on the attitudes and loyalties of an individual simply because he or she has accepted a gift.

It is, however, important to determine what boundaries should ethically guide gift giving. For example, handouts should be of benefit to patients, provide educational or study value, be relatively modest, and should have no strings attached. Cash should not be accepted directly by students, residents or physicians.⁹ In order to prevent bias, the recipients of large gifts, such as scholarships, research grants, or funds subsidizing attendance at educational conferences, should be chosen by

academic or training institutions rather than by the pharmaceutical company.

A Bitter Pill to Swallow

In a single day on the job, health care professionals are inundated with advertisements, gifts, and personal visits from pharmaceutical company representatives selling the newest "wonder" drug. In this day of evidence-based medicine, one might argue that these mass marketing strategies would not have an effect on physicians and residents, despite the fact that more than \$11 billion US a year is spent in promotion and marketing of drugs by the pharmaceutical industry.¹⁰ Why would corporations spend an enormous amount of money if it did not reap some benefit by influencing prescribing patterns? Over the past decade, mounting evidence has been published that helps to answer this question. A number of investigations have been published that support the notion that the pharmaceutical industry's aggressive marketing campaigns affect the knowledge, attitudes and behaviours of practicing physicians and residents. Twenty-nine studies published from 1992 to 1998 were recently reviewed by Wazana⁵ to determine the overall effect of physician-pharmaceutical industry interactions (e.g., direct interactions with representatives, gifts, samples, honoraria, etc.) on physician attitudes, formulary requests and prescribing patterns. The results were not surprising. The author reported that most studies found that the interactions favoured the pharmaceutical companies' influence. For example, although both physicians and residents did not feel that gifts, meals, and promotional material provided by the drug industry would have an influence on their practice, the physicians/residents/clerks were unable to identify wrong claims about medication, exhibited positive attitude towards pharmaceutical representatives, and prescribed less generic drugs compared with the newer medications even though little data was available demonstrating clinical utility.

Wazana's results were echoed in a landmark study by McCormick and colleagues² at the University of Toronto. The authors conducted a retrospective survey of three groups of physicians who had completed their training between 1990 and 1996. One group was from the University of Toronto, which did not restrict drug company activities aimed at residents, a second group from McMaster University, who completed the medical program prior to the implementation of a restrictive policy on drug industry interactions with students, and a third group from McMaster who were training during the time of the policy implementation. The authors found that of the three groups, the post-policy McMaster trainees were the least likely to report that information provided by pharmaceutical industry representatives benefited their practice (odds ratio 0.44 [95% CI 0.20-0.94]) and had the fewest number of interactions with drug company representatives. Interestingly, the authors also reported that participants with more frequent contacts with drug industry representatives perceived a greater benefit from information provided by the companies (odds ratio = 1.29 [95% CI 1.13-1.47]).

Although the focus of the drug industry is on those in training/practice, what about undergraduate medical students? What is the harm to medical students who receive gifts, free meals or have events sponsored by the drug industry, since they are unable to independently prescribe medications for a number of years? Unfortunately, undergraduate students are targets of the drug corporations, although to a lesser extent. Recent studies have reported an attitude and behavioural effect similar to that seen with practicing/training physicians. Hodges¹¹ reported that of 21 psychiatry clerks who participated in their survey, 41% agreed that “pharmaceutical representatives have an important teaching role”. However, the proportion of third and fourth year residents who agreed with the same statement was significantly lower. The author reported an identical trend with the statement “discussions with sales representatives have no impact on prescribing”. Wilkes *et al.*¹² studied 120 third-year medical students exposed to mock pharmaceutical industry representative presentations, which were subsequently revealed to them to be fake. The authors reported that compared to perceptions prior to the mock presentations, there was an increase in the proportion of students who agreed with statements about potential biases in prescription behaviour after receiving gifts, other non-educational materials and seminars at resort locations. Hence, it appears that students early in their medical career are not immune to the influences of the drug industry.

UTMJ interviewed Dr. Gordon Guyatt to provide his perspective on the subject. Dr. Guyatt is a Professor in the Departments of Clinical Epidemiology and Biostatistics and Medicine at McMaster University and public spokesperson for the Medical Reform Group. As the previous Director of the Internal Medicine Program, Dr. Guyatt worked with the Faculty of Medicine at McMaster to adopt new guidelines for interactions with the pharmaceutical industry.¹³

UTMJ: What is your relationship with medical education and the pharmaceutical industry?

GG: In 1990, I assumed the position of Director of the residency program in Internal Medicine at McMaster University and shortly thereafter began work on the development of guidelines for the residency program regarding the interaction between residents and the pharmaceutical industry. After considerable work with the residents within the faculty we finalized a set of guidelines, the basis of which was that the residency program would not facilitate interaction between residents and the pharmaceutical industry and, in particular, gift giving by the industry to the residents. We would accept money from the industry for educational activities only when it was hands-off and was initiated by the residency program in response to particular educational needs. Subsequent to that, potentially relevant events, including the industry threatening us as a result of the policy, created a bit of a tension in the *CMAJ* and the public press to that event. Most recently a publication in *JAMA* by Allan Detsky's group from the U of T demonstrating

that residents who trained at McMaster during time the policy was in place were more skeptical of pharmaceutical industry claims and relied less on pharmaceutical industry sources for information.

UTMJ: From your experience and the study published by Dr. Detsky's group,² the pharmaceutical industry targets residency programs. What is your opinion on the influences of the industry on undergraduate medical students?

GG: The pharmaceutical industry also targets students, although in general, appreciably less aggressively than they target residents.

UTMJ: In terms of the study by Dr. Detsky's group, do you believe that what his group found will have long-standing ramifications to other medical schools and that they might change their practice?

GG: Well, that is a political issue and remains to be seen. In general, the connection between evidence and behaviour is pretty weak. In order for behaviour to change, it requires much more than evidence. It requires behavioural change strategies and, in this case, political will. I believe the evidence from Dr. Detsky's study will give ammunition to those with the will to change things but without the will and fairly aggressive political activity, nothing will change.

UTMJ: With respect to obtaining funding for anything related to medical education, funding is always a big issue. How do you think that schools should then focus their attention on obtaining those funds given the limited amount of funding available for Canadian medical education?

GG: I think the policy that we developed at McMaster has ended up working out quite well. As it turns out, industry is still willing to give funds to a considerable extent if there is a hands-off policy. Aside from that, the institutions should make the point very aggressively in their relationships with the public that if the public wants medical training to be a service of the pharmaceutical industry then they can continue to restrict public funds for education. If the public would like medical education to be largely independent of industry influence then adequate funding for education activities is required.

UTMJ: Is it not a good idea to expose medical students early in their training to the nature of the pharmaceutical industry in order to help them to critically evaluate the difference between evidence and advertisement?

GG: The evidence is clear from the *JAMA* article. The industry is very smart. They spend \$15, 000 per doctor on advertising. They know what they are doing when they interact with residents. The Detsky study shows very

clearly what the effects of such exposure has, which is to increase doctors' information, to look to the industry as an information source – an unequivocally destructive consequence from my point of view.

UTMJ: Given that Dr. Detsky's study focused on internal medicine trainees, do you believe that Dr. Detsky's study could be extrapolated to other specialties?

GG: Absolutely, the results did not surprise me in the least. Once again, if you just look at the industry's activity they are smart. They don't throw money out the window. They spend money to influence people's attitudes and behaviour. If you restrict their opportunity to give gifts to physicians and physicians-in-training and restrict their opportunity for their promotional activity, you are going to influence people's attitudes unequivocally.

UTMJ: What do you think about establishing a forum within the medical school training, whereby students have keynote speakers, such as yourself or Dr. Detsky, speak to them about this issue?

GG: I can't tell you what is happening at other places. At McMaster, we have had some of this type of exposure. I did it more aggressively when I was residency director and there still is some ongoing activity. But over the last decade, there has not been a marked increase in such activity.

It is important to note that in Canada, the issue of the professional interaction between physicians and industry has been addressed by both the Canadian Medical Association (CMA) and the Royal College of Physician and Surgeons of Canada. Both regulatory bodies have published guidelines that caution the practice of accepting gifts, free samples or other practices that do not conform to the Code of Ethics. The CMA guidelines

include a section for medical students, interns and residents and states that the guidelines also apply to medical education and that the "... medical curricula should deal explicitly with the guidelines".¹⁴ The mounting evidence from the aforementioned studies supports this idea of greater restrictions on interactions between medical professionals and students and the drug industry. The net effect seems great enough that the issue should be addressed at the policy and education level.

The *UTMJ* News and Views Editors would like to thank Dr. Gordon Guyatt for providing his insights into this topic.

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