CJEM and pharmaceutical advertisements: it's time for an end

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BACKGROUND

Pharmaceutical advertisements in medical journals have repeatedly been criticized for their influence on physicians and, ultimately, their effect on prescription practices.[1] Specifically, advertisements manipulate or bias their message using various techniques:

- presenting their information in certain ways in graphs[2]
- presenting benefits as relative rather than absolute risk reductions or numbers needed to treat[3,4]
- omitting confidence intervals and power calculations[5,6]
- making unsubstantiated claims about clinical or economic efficacy and quality-of-life benefits[4,6–8]
- failing to provide key messages required for guideline-concordant care[9]
- using poor-quality references[10,11]

Doctors claim to have a negative viewpoint about the educational value of advertisements[12] and report they do not use advertisements as a source of information.[13,14] However, despite these statements, there is little doubt of the success of advertising on influencing physicians.[15,16] Advertisements target the newest and most expensive products contributing to the increase in prescription drug spending,[17] thereby diverting financial resources from other areas of health care. Extensive advertising of new drugs also leads to widespread use before adequate safety information is available; this may have serious safety consequences, such as those seen with rofecoxib (Vioxx).

Not only are journal advertisements successful in increasing sales, and therefore prescriptions, there is also some evidence that physicians who use journal advertisements as sources of information prescribe less appropriately.[18,19]

Journals justify running advertisements because of the income generated. This revenue can be used to build the journal and reduce subscription rates.[20] Richard Smith, former editor of the *BMJ*, argues that carrying advertisements helps to diversify the revenue sources for journals and thereby contributes to their financial independence.[21] Some societies generate more money from journal advertisements than they do from membership fees, which raises the prospect of serious potential conflicts of interest[22] and possibly undermines the public's confidence in the independence of the medical advice that these societies give.

In light of the biases in journal advertisements, the possible negative effects that they may have on doctors' prescribing habits, their contribution to rising drug costs and the potential threat that they pose to the independence of medical societies, *CJEM* should refuse all advertisements for pharmaceutical products. Can the Canadian Association of Emergency Physicians (CAEP), which owns *CJEM*, take this step and survive financially?

REVENUE FROM PHARMACEUTICAL ADVERTISEMENTS

To estimate the revenue from pharmaceutical advertisements, the 24 issues of *CJEM* from January 2005 to November 2008 were hand searched and all advertisements were identified. Based on the rate cards for each year (the charges for different types of advertisements) the revenue from both pharmaceutical and all other types of advertisements was calculated per issue and for the entire year. (No adjustments were made for inflation.)

Table 1 shows the estimated advertising revenue per issue and for each year. Median revenue per issue from

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pharmaceutical companies was Can$14 472 (with a range of $5828 to $26 110); median revenue from other advertisements was $10 832 (ranging from $4590 to $18 126). In 6 of the 24 issues more revenue was generated from other advertising than from pharmaceutical advertising.

REPLACEMENT SOURCES OF REVENUE

To remain revenue neutral, CAEP would have to replace pharmaceutical advertisement income with funds from other sources. Membership fees for active CAEP members would have to increase by $47 to $113 or from as little as 13% to a maximum of 32%, if this were the only source of alternative funding (Table 2).

Such a change in membership fees is an estimate based on historical trends in advertising revenue and may have to be revisited in the future. Advertising revenue can vary significantly (Table 1) and is difficult to predict, with many factors from the economy in general, and the pharmaceutical industry in particular, contributing to the uncertainty. Income is also affected by the variables influencing production costs, including the price of

Table 2. Annual CAEP active membership numbers, fees and additional fees* needed to replace pharmaceutical advertising revenue, 2005–2008

Variable	2005	2006	2007	2008
No. of active members	1389	1230	1149	1185
Fee, $	335	345	355	365
Additional fee required to replace advertising revenue, $ (% increase)	47 (14)	63 (18)	113 (32)	55 (15)

*Rounded to the nearest dollar.

Table 1. Number of pages of advertisements and revenue* per *CJEM* issue, 2005–2008

Issue	Total no. of pages/issue (including covers)	Pharmaceutical advertisements		Other advertisements	
		No. of pages	Revenue, $	No. of pages	Revenue, $
January 2005	76	10 1/8	19 678	2 5/12	4590
March 2005	74	6	13 086	2 1/2	5859
May 2005	74	3	5828	5 1/4	9085
July 2005	76	3	5828	6 1/2	12 578
September 2005	76	6	10 958	4 1/2	8220
November 2005	76	4 1/2	9693	4 3/4	9345
January 2006	76	6 3/4	12 195	4 1/4	9901
March 2006	76	10 3/4	20 609	3 2/3	8876
May 2006	100	4 3/4	10 095	4 7/12	10 080
July 2006	76	3 3/4	6995	4 2/3	7650
September 2006	76	9 5/12	15 339	3 17/24	7760
November 2006	76	6 3/4	12 195	4 5/12	9551
January 2007	76	4 1/2	8080	7 5/6	15 688
March 2007	84	15 1/6	21 160	2 5/8	6020
May 2007	100	12 3/4	25 725	6 5/6	12 740
July 2007	92	13 5/12	26 013	6 17/24	16 440
September 2007	84	12 5/12	22 578	5 1/2	12 693
November 2007	100	13 1/2	26 110	7 1/3	16 498
January 2008	100	4 5/6	9734	3 1/12	8996
March 2008	100	5 1/3	10 663	7 7/8	18 126
May 2008	124	5	8443	6 1/4	14 611
July 2008	100	9	17 305	5 3/4	11 960
September 2008	100	8	15 106	4 3/4	10 006
November 2008	100	5 5/6	13 929	4 7/12	12 705
2005 total		32 5/8	65 071	25 11/12	49 677
2006 total		42 1/6	77 428	25 7/24	53 818
2007 total		71 3/4	129 666	36 5/6	80 079
2008 total		38 1/3	65 446	32 7/24	64 417

*Rounded to the nearest dollar.

paper, postal rates, staff salaries and whether or not *CJEM* continues to qualify for the Canada Magazine Fund.

There are also other sources of revenue that could be explored. Institutional subscription rates could be raised, although it is not known how increases might affect the willingness of libraries to subscribe to the journal, and general revenue from this source is already declining. Annual revenue from other types of advertising ranges from 62% to 98% (calculated from figures in Table 1) of that received from pharmaceutical products; and this amount could be increased by systematically targeting alternative advertisers who may be eager to reach a market with relatively large amounts of disposable income.[23]

OTHER ARGUMENTS FOR RETAINING PHARMACEUTICAL ADVERTISING

Beyond the question of revenue from advertisements, there are a number of rationales that could be advanced for continuing to run advertisements for pharmaceutical products. However, under close scrutiny none of them are particularly compelling.

Canadian control of advertising is adequate

There are very few studies about Canadian advertisements identifying problems. Some might argue that because virtually all advertisements appearing in Canadian medical journals are prescreened by the Pharmaceutical Advertising Advisory Board (PAAB),[24] the quality of Canadian advertisements is superior to those in other countries. The PAAB Code does have some very positive features, such as requiring advertisers to report either absolute risk reductions or numbers needed to treat; however, to date there have not been any comparative studies of the quality of Canadian journal advertising.

Furthermore, the PAAB Code also has serious limitations. Information about a product is not contiguous with the display portion of the advertisement, and is therefore placed at the back of the journal; the type size for the generic name of the product is significantly smaller than that for the brand name; and companies are allowed to present claims about a product in large print and then in small print at the bottom of the page state that the clinical significance of these claims has not been determined. Should an advertisement be found to have breached the PAAB Code there are no financial penalties, and other penalties such as corrective letters have been used only in very rare instances.

Advertising has not caused CJEM to change its editorial policy

There are no publicly known instances in which companies advertising in *CJEM* have tried to influence the content of the journal, but that does appear to have happened elsewhere.[25] In addition, when one journal published an article unfavourable to the pharmaceutical industry the companies took revenge on the journal by withdrawing advertising.[20] A related argument is that if *CJEM* stops running advertisements, then companies may respond by withdrawing support from CAEP activities. This is a contingency that CAEP should plan for, but this is not an excuse to continue to run pharmaceutical advertisements.

Pharmaceutical advertisements shouldn't be singled out

It could also be argued that if advertisements for pharmaceutical products are not allowed, then the same should apply to advertisements for medical devices, since inappropriate choice of a device could also have negative consequences for patient care. Although this is true, there are significant differences between devices and drugs as used by emergency physicians. Unlike medications, doctors have the opportunity to trial medical devices before they actually use them on patients and can directly look for design weaknesses or other problems. Moreover, devices are used almost exclusively in the emergency department, where patients can be closely monitored, whereas patients are frequently sent home into a relatively unmonitored environment with prescriptions. Although there are societal costs for inappropriate use of both pharmaceutical products and medical devices, patients may bear the economic cost of inappropriate prescriptions directly if they pay out-of-pocket or indirectly if private insurance premiums increase, but they rarely pay directly for medical devices.

Why should CJEM be different from other journals?

Finally, there is the argument that all other journals accept pharmaceutical advertising. Some online journals such as *Open Medicine* and *PLoS Medicine* do not accept pharmaceutical advertisements. Before it folded, the *Western Journal of Medicine*, a print publication, did not take pharmaceutical advertisements and currently the print version of the *Journal of General Internal Medicine* does not run pharmaceutical advertisements.

ARE THERE ALTERNATIVES TO BANNING PHARMACEUTICAL ADVERTISEMENTS?

Occasionally there have been suggestions that journal editors screen advertisements before allowing them to appear, but this is highly unrealistic. Editors do not have the necessary training to evaluate advertisements and, even if they did, they do not have the time, especially at small journals such as *CJEM*.

If doctors received better training in detecting biases in medical evidence, including advertisements, then journals could continue to accept the advertisements and they would not have any negative effects on physicians. However, that is no guarantee that they would become resistant to the message in advertisements.[26] In addition, if that actually happened, then in all likelihood companies would simply stop advertising.

CONCLUSION

There are multiple biases in pharmaceutical advertisements and there is some evidence that these advertisements may have a negative effect on prescribing behaviour. Other reasons, besides revenue generation, for continuing to accept pharmaceutical product advertising cannot be justified. Income from this source of advertising could be replaced by raising membership fees for active members, by exploring alternative sources of advertising or both.

Our current economic crisis once again provides further compelling evidence that private maximization of profit necessarily endangers the public good. Game theory suggests that resolving problems of this sort "require[s] a fundamental extension in morality."[27] The pharmaceutical industry operates within a profit-oriented system and within that paradigm has delivered valuable medications, but has also been guilty of egregious excesses. If we are asking the industry to reform then we as doctors must do the same and change the way that we relate to the industry. The CAEP executive and membership should make the decision to end advertisements for pharmaceutical products in *CJEM*.

Competing interests: Dr. Lexchin was retained by a law firm representing Apotex to provide expert testimony about the effects of promotion on the sales of medications. Dr. Lexchin is retained as an expert witness by the Canadian federal government in its defence of a lawsuit challenging the ban on direct-to-consumer advertising of prescription drugs in Canada.

Keywords: journal advertising, pharmaceutical industry, prescribing, revenue

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