

General Practitioners' willingness to pay for continuing medical education in a fee-for-service universal coverage health care system

Shahzia Lambat Emery^{1*}

*Corresponding author

Email: shahzia.lambatemery@unil.ch

Reto Auer^{1,2}

Email: reto.auer@ucsf.edu

Nicolas Senn¹

Email: nicolas.senn@hospvd.ch

Isabella Locatelli^{1,3}

Email: isabella.locatelli@chuv.ch

Jacques Cornuz¹

Email: jacques.cornuz@chuv.ch

¹ Department for Ambulatory Care and Community Medicine, University of Lausanne, Switzerland

² Department of Epidemiology and Biostatistics, University of California, San Francisco

³ Institute of Social and Preventive Medicine, University of Lausanne, Switzerland

Abstract

Background: Sponsoring of physicians meetings by life science companies has led to reduced participation fees but might influence physician's prescription practices. A ban on such sponsoring may increase participation fees. We aimed to evaluate factors associated with physicians' willingness to pay for medical meetings, their position on the sponsoring of medical meetings and their opinion on alternative financing options.

Methods: An anonymous web-based questionnaire was sent to 447 general practitioners in one state in Switzerland, identified through their affiliation to a medical association. The questionnaire evaluated physicians' willingness to pay for medical meetings, their perception of a bias in prescription practices induced by commercial support, their opinion on the introduction of a binding legislation and alternative financing options, their frequency of exchange with sales representatives and other relevant socioeconomic factors. We built a multivariate predictor logistic regression model to identify determinants of willingness to pay.

Results: Of the 115 physicians who responded (response rate 26%), 48% were willing to pay more than what they currently pay for congresses, 79% disagreed that commercial support introduced a bias in their prescription practices and 61% disagreed that it introduced a bias in their colleagues' prescription practices. Based on the multivariate logistic regression, perception of a bias in peers prescription practices (OR=7.47, 95% CI 1.65-38.18) and group practice structure (OR=4.62, 95% CI 1.34-22.29) were significantly associated with an increase in willingness to pay. Two thirds (76%) of physicians did not support the introduction of a binding legislation and 53% were in favour of creating a general fund administered by an independent body.

Conclusion: Our results suggest that almost half of physicians surveyed are willing to pay more than what they currently pay for congresses. Predictors of an increase in physicians' willingness to pay were perception of the influence of bias in peers prescription practices and group practice structure. Most responders did not agree that sponsoring introduced prescribing bias nor did they support the

introduction of a binding legislation prohibiting sponsoring but a majority did agree to an independent body that would centrally administer a general fund.

Keywords: Medical education, ethics, health policy.

Background

Life science companies (e.g., pharmaceutical and health technology companies) are a very important sector of Switzerland's economy with 2010 sales representing \$7.63 billion [1]. Not only do they have an economic benefit but they also provide doctors and patients worldwide with continual therapeutic progresses. Nevertheless, due to a few but severe unexpected adverse effects related to approved drugs (i.e. rofécoxib [2]), and therefore in order to increase patient security, legal requirements to obtain marketing approval have had to become more demanding, lengthening development processes, declining research and development productivity [3]. In addition to lengthy legal requirements, other most disclosed challenges reported by pharmaceutical companies include expiration/loss of patent protection and industry/generic competition [4].

One way life science companies have responded to these challenges has been by using marketing strategies such as the sponsoring of physicians continuing medical education (CME) to increase rapid product visibility and utilization [5]. Currently, in Switzerland, physicians have the obligation to obtain 50 annual CME credits per year. Most medical meetings are partially or totally poly-sponsored by life science companies, explaining low participation fees for physicians. Ongoing discussions in the medical literature are questioning whether this form of industrial marketing does not lead to potential drawbacks including conflict of interest as well as direct and indirect commercial products promotion through altered disease management and prescribing habits bias [6], possibly contributing to the rise of national health costs [7,8]. This question is even more relevant in Switzerland, a country with a health care system combining fee for service and universal health insurance coverage, and where national health costs accounted for 10.8% of GDP in 2010 and are estimated at 11.9% of GDP in 2014 [9].

There are currently no Swiss laws regulating the sponsoring of physicians' CME. In 2011, a Federal Councilor proposed to ban the sponsoring of physicians congresses by life science companies which most certainly would increase physicians' participation fees. We wanted to evaluate factors

associated with physicians willingness to pay (WTP) for medical meetings, their position on the sponsoring of CME and their opinion on alternative financing options.

Methods

Study population

The survey was conducted in the canton of Vaud in Switzerland (721'643 inhabitants estimated at the end of 2011 [10]), where an anonymous questionnaire was sent out to 447 general practitioners. We created a web-based questionnaire (Survey Methods®, Allen, Texas) and sent the hyperlink by email through the association of Swiss Family Doctors representing the leading association in terms of affiliated physicians (convenience sample). Two reminders were sent by the association of Swiss Family Doctors. The survey took place in between July and August 2011.

Survey questionnaire

A questionnaire comprising a total of 21 questions was developed in a consensus group and using existing questions found in the medical literature [11,12,13,14]. The questionnaire was pilot tested with 10 clinical directors from the Department of Ambulatory Care and Community Medicine of the University of Lausanne (canton of Vaud) and with 10 general practitioners from other French-speaking cantons (Fribourg, Neuchatel and Valais) to evaluate the comprehension and relevance of our questions. Two questions were modified based on the pilot test of the questionnaire.

The first part of the questionnaire determined physicians' socioeconomic characteristics using multiple choice questions. The questionnaire then targeted three main areas: (1) physicians' WTP for CME and the factors associated with their WTP, (2) physicians' position on the sponsoring of CME by life science companies and (3) physicians' opinion on alternative financing options to support their CME. Before evaluating physicians' WTP for CME, an open-ended question was used to quantify physician's perception of a two-day non-sponsored congress participation fee given the participation fee of \$310 to attend the congress of Swiss Family Docs, a highly attended sponsored medical congress for physicians in the studied area. Physicians' WTP was then evaluated using two types of

questions. An open-ended question was used to quantify their global WTP for a half a day of CME (equivalent to 4 credits) and a multiple choice question was used to evaluate their WTP for half a day each CME option with 5 possible answers (i.e., “≥ \$ 150”, “\$ 100-149”, “\$ 50-99”, “< \$ 50”, “I am not prepared to pay for this continuing medical education option”). These categories were based on the participation fees to the congress of Swiss Family Docs (\$310). Their opinion on the other items was evaluated using a four-point scale (i.e., 4 representing “strongly agree” and 1 “strongly disagree”).

Analysis

Simple descriptive statistics were used to illustrate physicians’ socioeconomic characteristics and to describe physicians’ collective opinion on their WTP for CME, their perception of a bias in prescription practices induced by commercial support, their support of a binding legislation and their opinion on alternative financing options. We first tested the associations between socioeconomic variables and physicians who were willing to pay more than ≥ CHF 150 for half a day of CME in a univariate logistic regression analyses WTP was dichotomized into ≥ CHF 150 corresponding to an increase in current physicians’ participation fees, estimated at \$ 80 for half a day of CME, and physicians’ mean cost perception of half a day of a non sponsored congress estimated at \$ 200. Variables tested were age, sex, full-time/part-time, annual income, practice location, practice structure, health maintenance organization membership, number of meetings with sales representatives per month, average time spent per meeting, number of sponsored congresses attended in 2010, perception of a bias in own prescription practices and perception of a bias in peers prescription practices. Socioeconomic factors with a p-value for the regression coefficient <0.1 in the univariate analyses were selected for inclusion in the multivariate predictor logistic regression model. Coefficients of the regression models were expressed in odds ratio (OR) and their corresponding 95% confidence intervals (CI). Statistical analyses were performed using R version 2.14.1 (R Project for Statistical Computing, <http://www.r-project.com>).

Results

Physicians' socioeconomic characteristics

Out of the 447 physicians contacted, 115 questionnaires were completed through the online survey (response rate of 26%). A majority of the respondents were male (72%) with a mean \pm SD age of 53 years \pm 8 (age range: 34-68) (Table 1). Fifty-two percent of physicians worked part-time (4% worked 5 half days or less per week and 48% worked in between 6 and 9 half-days per week). Annual income was less than \$ 160'000 for 63% of physicians. The majority (53%) of physicians working full-time earned \geq \$ 160'000 and 63% of physicians working part-time earned in between \$ 80'000 and \$ 159'999. Their practices were majorly located in small towns (41%) followed by rural villages (35%) and large cities (24%). Sixty-three percent worked in group practices and 30% were member of a health maintenance organization. Fifty-six percent of physicians met up with sales representatives 4 times or more per month and 64% spent 15 minutes or less per meeting. Thirty-five percent of physicians did not attend any sponsored congresses in 2010 in comparison with 33% who attended 1 to 3 sponsored congresses and 34% who attended 4 sponsored congresses or more.

Physicians' WTP for CME

The mean WTP was \$ 105 \pm 71 for a half day of CME (e.g. medical congresses, seminars and conferences) (Figure 1), 17% of physicians were willing to pay in between \$ 200 and \$ 300, 44% were willing to pay in between \$ 100 and \$ 199 and 39% were willing to pay less than \$ 100 for half a day of CME. Forty-eight percent of physicians were willing to pay \geq \$100 for congresses (18% were willing to pay \$ \geq 150 and 30% were willing to pay in between \$ 100 and \$ 149) for congresses, which are an important mean of CME for 96% of physicians (Figure 2).

We also assessed physician's cost perception of a two-day congress that would not be sponsored. The mean (\pm SD) cost perception was \$ 799 \pm 312, corresponding to an increase of 58% in comparison to Swiss Family Docs' current participation fee of \$310, out of which physicians are willing to pay 47%.

Variables associated with physicians' WTP for CME

The univariate logistic regression showed three factors associated with physicians' WTP of more than \$150 for their CME: the perception of bias in peers prescription practices (OR=6.67; p= 0.009), group practice structure (OR=3.01; p=0.063) and ≥ 4 meetings with sales representatives per month (OR =0.51, p=0.034). In the multivariate model, the perception of bias in peers prescription practices and group practice structure remained significant predictors of the willingness to pay, but the frequency with sales representatives become non-significant (OR 0.59; 95% CI: 0.28 to 1.19). Group practice structure was negatively associated with meeting with sales representatives (48% of physicians in group practice structure reported meeting up with sales representatives 4 times or more per month and 72% in individual practice, p-value=0.03). Given the potential mediating effect, only perception of bias in peers prescription practices and group practice structure were included in the final regression model (Table2).

Physicians' position on the sponsoring of CME

Seventy-nine percent of physicians disagreed that sponsoring of their CME by life science companies influenced their own prescription practices and 61% disagreed that it introduced a bias in their colleagues' prescription practices. In terms of introducing a binding legislation prohibiting the sponsoring of CME by life science companies, 78% of physicians would not support it and 77% did not think that such a draft legislation was likely to be enacted.

Physicians' opinion on alternative financing options

A majority of physicians were in favour of financing through a levy on medical services (65%) instead of direct sponsorship to support CME. 56% were in favour of financing through a general fund set up by life science companies and centrally administered by an independent body, 55% agreed to government financing, whereas 65% were unfavourable to self-funding by physicians (Figure 3). In the eventuality of an increase in physicians' participation fees, 63% of physicians disagreed to the necessity of diminishing the 50 annual mandatory CME credits.

Discussion

Our study reveals that despite the fact that most respondents did not agree that sponsoring influenced their own and their colleagues prescribing behaviour, 48% of Switzerland's canton of Vaud general practitioners, for whom congresses are an important mean of CME, were willing to pay more than what they currently pay to attend congresses. Physicians willing to pay more for medical meetings were more likely to perceive bias in peers' prescription practices and to work in a group practice structure. They did not support the introduction of a binding legislation prohibiting the sponsoring of congresses by life science companies but did approve the creation of a general fund set up by life science companies and centrally administered by an independent body as an alternative financing option.

An on CME site survey study conducted Tabas et al. in the US found that 42% of medical professionals were willing to pay higher fees to decrease or eliminate commercial support, 88% believed that commercial support introduced a bias and 85% did not support the elimination of commercial support from CME activities [15]. Our study adds to previous work by quantifying physicians' WTP for CME and highlighting physicians' characteristics associated with higher WTP for CME. According to a postal survey study conducted by Rutledge et al. in the UK, half of physicians attending medical meetings were sponsored by life science companies and approximately one third of physicians would not have attended these medical meetings if there had been no industry funding [16]. Our estimation of the WTP permits to quantify to what extent sponsoring by life science companies could be limited without having to find alternative financing options to maintain CME attendance.

Predictors of an increase in physicians' WTP were perception of the influence of bias in peers' prescription practices and group practice structure but only 39% of physicians agreed that sponsoring influenced their colleagues prescribing habits. Indeed, physicians' feeling valued by life science

companies often unconsciously reciprocate this valorisation by using their therapeutic products [17]. Therefore, physicians' empowerment through prescribing bias awareness and independent decision making skills, a training already given to undergraduates, would potentially help physicians manage their collaboration with life science companies. Not only could this help reduce potential influence of life science companies on physicians without modifying current sponsoring, but it could possibly also increase physicians WTP for CME. Group practice structure, a variable difficult to influence, was negatively associated with meeting with sales representatives. Tentative explanations, although not tested in our analyses, would be that physicians in group practice rely less on sales representatives to learn about novel drugs or that they go through more peer pressure not to meet up with sales representatives. Given the current trend towards an increase in group practice structures [18, 19], there might be an increase in physicians WTP for CME in the future and a shift in the way physicians value their CME from a model relying on sales representatives to a model relying on congresses and group learning.

Although 76% of physicians were not in favour of a legislation prohibiting the sponsoring of congresses by life science companies, physicians agreed to three alternative financing options. The most preferred alternative financing option was a levy on medical services agreed by 65% of physicians followed by a general fund set up by life science companies and centrally administered by an independent body (56%) and government financing (55%). Both a levy on medical services and government financing would increase national health costs already forecasted at 11.6% of GDP for 2011. The alternative of a general fund therefore seems the most appropriate option to begin with. Nevertheless, this proposition would have to be accepted by life science companies.

Unlike the US where the question of CME sponsoring by life science companies and conflict of interest issues have been addressed for over 30 years [20] and regulated by the Sunshine Act, the situation in Switzerland is still very precarious, possibly explaining low prescription bias perception

found in our study. As a matter of fact, there are currently very few discussion and no laws that regulate the sponsoring of CME by life science companies. The Swiss Academy of Medical Sciences (ASSM) edited in 2002 recommendations on the collaboration in between the medical cooperation and life science companies that now stand as guidelines for physicians to obtain their 50 annual mandatory CME credits. A seven criteria checklist is used to ensure objectivity and transparency of a congress for its credits to be validated [21].

Several limitations must be taken into account when assessing the implications of our findings. First, the response rate was low and it involved only physicians from one canton of Switzerland, who are part of the association of Swiss Family Doctors, thus generalization to all of Switzerland's general practitioners could be erroneous. Second, CME requirement and programs vary amongst different specialties, making our observations difficult to generalize to all physicians. Finally, the survey relied on self-reported behaviour potentially misestimating reality.

In conclusion, our survey of 115 Swiss physicians shows that a majority of general practitioners do not perceive any prescription bias for themselves or for their colleagues and 48% of physicians are willing to pay more than what they currently pay for congresses. For decision makers willing to regulate the mutual dependence of physicians and life science companies whilst maintaining health costs at an affordable level, an independent body that would centrally administer a general fund set up by life science companies to various congresses might be better than a legislation banning the sponsoring of physicians congresses by life science companies.

Abbreviations

CME, continuing medical education; WTP, Willingness to pay

Competing interests

Authors declare that they have no competing interests.

Authors' contributions

SLE, RA, NS and JC made the conception and the design of the study, made the analyses and interpretations and revised the paper. IL built the multivariate predictive logistic regression model. SLE collected the data and did the main part of the writing. All have given a final approval of the version to be published.

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Table 1 Physicians' socioeconomic characteristics

Variable	No (N=115)	Percentage	Comparison with FMH* statistics
Age (age ; standard deviation)	53 ; 8		53
Sex			
Male	83	72%	68%
Female	32	28%	32%
Full-time/part-time**			
Full-time	55	48%	43%
Part-time	60	52%	57%
Income*** per year			
\$ < 160'000	72	63%	37%
\$ ≥ 160'000	43	37%	63%
Practice location****			
Large city	28	24%	n.a.
Small town	47	41%	n.a.
Rural village	40	35%	n.a.
Practice structure			
Group	72	63%	43%
Individual	43	37%	57%
Health maintenance organization***** membership			
Yes	35	30%	34%
Number of meetings with sales representatives per month			
0	12	10%	n.a.
1-3	39	34%	n.a.
4-10	56	49%	n.a.
≥ 11	8	7%	n.a.
Average time spent with sales representatives per meeting			
≤ 15 minutes	74	64%	n.a.
In between 16 and 30 minutes	41	36%	n.a.
Number of sponsored congresses attended in 2010			
0	40	35%	n.a.
1-3	38	33%	n.a.
4-10	29	25%	n.a.
≥ 11	8	7%	n.a.

* Federation Medicorum Helveticorum

** Part-time: corresponds to an activity rate of 9 half-day or less

*** Income converted from Swiss francs to dollars, (1USD ~1CHF)

**** Large city: ~130'000 inhabitants, small town: ~18'000 inhabitants and rural village: ~ 3'000 inhabitants

***** Health maintenance organizations are managed care plans that provide health care services to their members through networks of doctors, hospitals, and other health care providers. (Source: Texas Department of Insurance, <http://www.tdi.texas.gov>)

Table 2 Factors associated with an increase in willingness to pay in the multivariate logistic regression model*

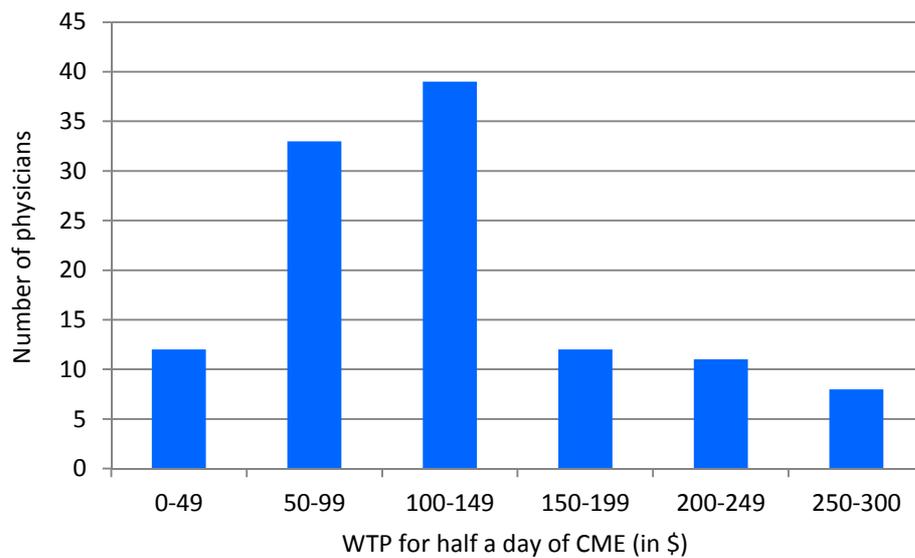
Variable	OR (95% CI)	p-value
Perception of bias in peers prescription practices**	7.47 (1.65 - 38.18)	0.01
Group practice structure	4.62 (1.34 - 22.29)	0.03

OR, odds ratio; CI, confidence interval

* Variables tested were age, sex, full-time/part-time, annual income, practice location, practice structure, health maintenance organization membership, number of meetings with sales representatives per month, average time spent per meeting, number of sponsored congresses attended in 2010, perception of a bias in own prescription practices and perception of a bias in peers prescription practices.

** Perception of bias in peers prescription dichotomised as “strongly agree” vs “agree, disagree, strongly disagree” on a 4 item likert scale.

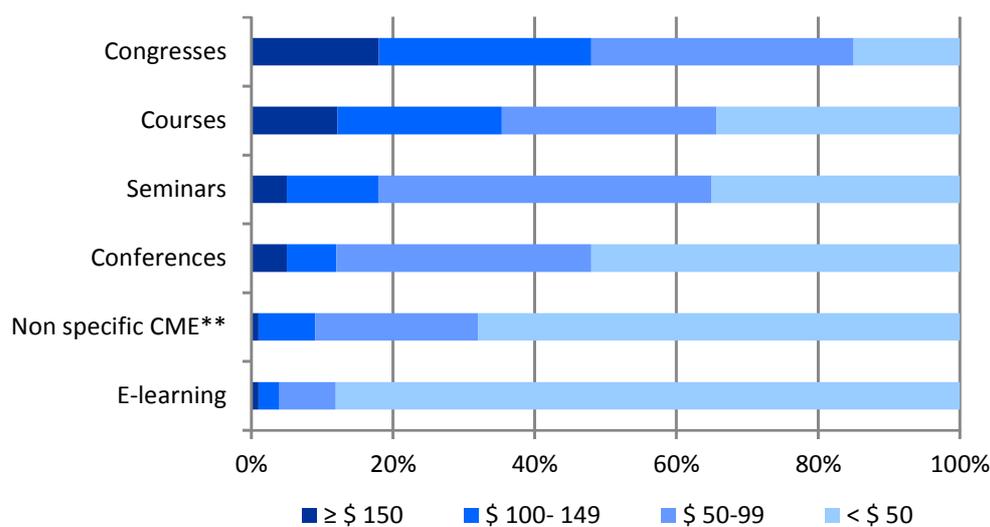
Figure 1 Self-reported physicians’ willingness to pay* (WTP) for half a day of continuing medical education (CME)**



* Willingness to pay converted from Swiss francs to dollars, (1USD ~1CHF)

** E.g. medical congresses, seminars and conferences

Figure 2 Self-reported physicians’ willingness to pay* for various continuing medical education (CME) options



* Willingness to pay converted from Swiss francs to dollars, (1USD ~1CHF)

** Non specific continuing education courses on ethics, health economy, insurances, patient’s security, risk and error management, coaching, communication, law, etc.

Figure 3 Physicians' opinion on alternative financing options

