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## How drug companies manipulate prescribing behavior

## Cómo las empresas farmacéuticas manipulan la conducta para formular los medicamentos

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**Palabras clave:** Industria Farmacéutica, Educación Continua, Muestras de Medicamentos, Prescripciones de Medicamentos, Cuerpo Médico

### Abstract

Pharmaceutical companies affect prescribing behavior through various means, including pharmaceutical salespeople (drug reps), drug samples, influential peers, and educational events. Information on drugs provided by industry representatives has been shown to be inaccurate. Drug samples are among the most effective marketing tools that companies have. "Thought leaders" or "key opinion leaders" are used to persuade peers to use drugs for unapproved uses, raise awareness of targeted diseases, and to shape perceptions of a drug's benefits and harms, as well as perceptions about competing drugs. Although grants provided for talks, seminars, and meetings are described as "unrestricted," it is understood that the company gets to select some speakers, and that speakers with views that undermine marketing messages will not be invited. Promotion has been shown to increase physicians' prescription of targeted drugs, and increases prescription costs.

### Resumen

Las empresas farmacéuticas influyen sobre la conducta para formular los medicamentos de diversas formas, incluyendo a los vendedores de las empresas farmacéuticas (representantes de medicamentos), las muestras de medicamentos, pares influyentes y eventos educativos. La información sobre los medicamentos suministrada por los representantes de la industria ha demostrado ser inexacta. Las muestras de medicamentos son una de las herramientas de mercadeo más efectivas con que cuentan las empresas. Se recurre a "Los líderes de pensamiento" o a los "principales líderes de opinión" (KOLs por sus siglas en inglés) para convencer a sus pares de que utilicen medicamentos para usos no aprobados, sensibilizar sobre patologías objetivo, y conformar percepciones sobre los beneficios y perjuicios de un medicamento, además de crear impresiones sobre medicamentos en competencia. A pesar de que se dice que las asignaciones monetarias para dictar charlas, celebrar seminarios y reuniones

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no deben tener restricciones, es claro que la empresa selecciona determinados conferencistas y que aquellos cuyas opiniones socaven los mensajes de mercadeo no serán invitados. Se ha demostrado que la promoción aumenta la prescripción de medicamentos específicos y aumenta los costos de ésta.

## Introduction

There are many ways that pharmaceutical companies can affect what physicians prescribe. The objective of this paper is to describe how pharmaceutical companies promote drugs through pharmaceutical salespeople (drug reps), drug samples, influential peers, studies, and educational events, and to discuss the potential adverse effects on patient care of such promotion. We will discuss personal promotion through pharmaceutical salespeople (drug reps) and peers, and the use of key opinion leaders (KOLs) to promote to groups through lunch or dinner talks and educational events. In addition, we will discuss drug samples, drug studies, and meeting sponsorship. Some of these tactics have been published in medical literature; others have been shared with us by industry insiders. Promotional strategies vary by country but the use of pharmaceutical salespeople (drug reps) and KOLs are common in many countries.

## Personal promotion: drug reps

Drug reps use friendship, flattery, gifts, and services to establish relationships with physicians that lead to increase use of targeted drugs.<sup>1</sup> Drug reps are trained to assess physicians' personalities and preferences and use this information to manipulate perceptions about both the drug rep and the drugs they sell.<sup>1</sup> Although studies show that physicians do not believe that promotion affects their own personal prescribing,<sup>2-5</sup> promotion has been shown to increase physicians' prescription of targeted drugs, and increases prescription costs.<sup>6-11</sup> A systematic review of 19 studies found that 15 showed a consistent association between interactions with pharmaceutical companies and increased prescribing rates, lower prescribing quality, and/or increased prescribing costs.<sup>12</sup>

Although many physicians rely on sales reps to give them information about drugs, this information is not accurate. Not only do reps not have accurate information about competing therapies, they are not accurate about the drugs they sell either. It has been shown that drug reps downplay or omit adverse events (even serious ones).<sup>13</sup> Although physicians believe they can extract objective information from information provided by drug reps, studies show that physicians cannot distinguish between correct and incorrect information provided by sales representatives.<sup>14,15</sup> Meeting with drug reps may reduce prescribing quality. A review of 58 studies found that exposure to pharmaceutical-company information did not

improve physician prescribing and that exposure to information provided by pharmaceutical companies was associated with higher prescribing frequency, higher costs, or lower prescribing quality.<sup>16</sup>

Drug samples are among the most effective marketing tools that companies have. Bringing samples every week or 2 provides reps an opportunity to promote their drugs to physicians. Samples are almost always used only for the most expensive, chronically used drugs.<sup>1</sup> Patients are grateful for samples, and physicians almost always prescribe the same drug that was sampled. That is exactly why samples are so important; samples are meant to give physicians practice in prescribing the targeted drug and to make the targeted drug a routine part of the physician's practice.

## Gifts and opportunities

Drug reps may bear food, gifts, or moneymaking opportunities, all of which influence physicians. Gifts do not need to be large to have a powerful effect on human relationships. Meals, pens, and other small gifts create a subconscious obligation to reciprocate. In the physician-drug rep relationship, physicians reciprocate not by returning gifts but through changes in prescribing practices.<sup>1,17</sup> One study found that physicians who received gifts totaling less than \$500 a year prescribed more expensive medications (\$123) than prescribers who received no gifts (\$85).<sup>6</sup> More expensive gifts had a greater effect in a dose-related fashion.

ProPublica, an investigative reporting organization in the United States, reported on the effect of gifts on prescribing for 150,323 physicians and found that internists, family physicians, cardiologists, psychiatrists, and ophthalmologists who received any gifts from drug or device manufacturers prescribed a higher percentage of branded drugs overall than doctors who received no gifts.<sup>18</sup> Even a few meals increased branded-drug prescribing when compared with doctors who received no payments.

Besides food, sales reps may also offer opportunities to physicians. According to former drug reps we interviewed, tactics include

- (1) A rep may invite a physician to give a dinner talk to a small group at an excellent restaurant. The subject of the talk does not matter, because this is a chance for the rep to both honor and pay the speaker, who then responds by prescribing more of the rep's drugs.
- (2) Some companies invite community physicians to sham "speaker trainings" that involve dozens or even hundreds of physicians who are invited for a weekend in a nice resort, where they are paid, entertained, and attend lectures laden with marketing messages. Attendees may hope that they will develop lucrative speaking careers, but most will wait in vain for speaking invitations. This kind of large event is usually not a real speakers training; it is meant only to influence and buy

loyalty from the attendees. Real speaker trainings are more modest events that usually involve fewer than 20 well-known or academic physicians.

- (3) Reps may also invite physicians to evaluate a marketing campaign, or evaluate the sales skills of sales reps by listening to, and rating, the sales pitches of multiple reps. The opinions of the physician do not actually matter to the company, which has its own sophisticated methods for rating its reps. The strategy is to pay the physician and have the physician pay close attention to marketing messages to absorb them thoroughly.

In all of these cases, drug reps have found an excuse to give a physician money without it seeming like a bribe. As Michael Oldani, an anthropologist and former drug rep, states, "The essence of pharmaceutical gifting . . . is 'bribes that aren't considered bribes'."<sup>19</sup>

## Marketing studies

Physicians may be asked by drug reps or other pharmaceutical company employees to participate in a "study," usually involving a payment for each patient a physician puts on a targeted drug. This is not a real study but a "seeding" study, meant to increase prescriptions rather than to further science.<sup>20,21</sup>

Many studies done after a drug is approved may be primarily for marketing purposes. In Germany, all "post-marketing" studies must be registered; an analysis of studies found that over 3 years, more than a million patients participated in 558 postmarketing studies sponsored by 148 manufacturers of drugs or medical products. Sponsors spent more than €217 million on paying physicians for these studies (most payments were between €1000 and €10,000). There was often a low ratio of patients to physicians. Only 5 of 558—less than 1%—were published. Most studies were case series, sometimes euphemistically called single-arm prospective studies. Without controls, these studies are scientifically worthless. The fact that these were largely uncontrolled, unpublished studies is indirect evidence that these are studies are meant to promote prescriptions, not advance science.<sup>22</sup>

Many published studies also bear hallmarks of being primarily designed for marketing purposes; 21% of 194 studies published in 6 general medicine journals showed evidence of being designed for marketing purposes. Raters considered "first, a high level of involvement of the product manufacturer in study design; second, data analysis; third, and reporting of the study; fourth, recruitment of small numbers of patients from numerous study sites for a common disease when they could have been recruited without difficulty from fewer sites; fifth, misleading abstracts that do not report clinically relevant findings; and sixth, conclusions that focus on secondary end-points and surrogate markers."<sup>23</sup>

## Peer promotion

According to industry insiders, some companies send physicians or pharmacologists employed by the company to talk to physicians at their practice sites. This may be a way of getting around regulations regarding drug reps. Because these health professionals are not sales reps, they can address unapproved uses and other subjects that drug reps are not permitted to talk about.

Drug reps may invite physicians to a lunch or dinner talk by an academic physician, or someone who is influential in a community. The speaker is paid by, but not usually an employee of, the sponsoring company, and the talk will cover several marketing messages.<sup>24</sup> However, the speaker may not overtly sell the drug. These "thought leaders" or "KOLs" may be used in promotional talks or at continuing education events; they are important for pushing unapproved uses, raising awareness of targeted diseases, and shaping perceptions of a drug's benefits and harms, as well as perceptions about competing drugs.<sup>25</sup> KOLs are also important for "disease branding" or "condition branding," in which a specific condition (sometimes one that is invented by the company) is linked with a specific therapy.<sup>26</sup> Some companies specialize in identifying KOLs who can help influence their peers.<sup>27</sup>

Continuing education is often funded by pharmaceutical companies and always contains marketing messages. These messages may be difficult to identify, because marketing messages include exaggerating the prevalence or severity of a specific condition. Sometimes, the targeted drug is not even on the market yet; marketing for a drug can start many years before a drug is approved.<sup>26</sup> A "pre-launch" marketing message might emphasize the importance of a specific physiologic process to set the stage for acceptance of a drug that affects that mechanism, or might create a new diagnosis or an unnecessary diagnostic distinction to establish a favorable atmosphere for a new drug.

## Meeting sponsorship

Companies may sponsor conferences, seminars, or lunches with talks within medical schools, hospitals, clinics, and other practice settings. Companies may sponsor series of talks, suggesting only 1 or 2 speakers as participants. Speakers who are not chosen by the sponsoring company then act as cover for the KOL who carries the marketing messages. Companies also sponsor medical association meetings; again, in exchange for the inclusion of a few KOL speakers. Although the grants provided for talks, seminars, and meetings are described as unrestricted, it is understood that the company gets to choose some speakers. It is also understood that speakers with views that undermine marketing messages from a sponsoring company will not be invited.<sup>28</sup>

Physicians who take money from pharmaceutical companies for giving talks may not feel compromised



because they are saying what they really believe. However, they are chosen because what they are saying aligns with a product's marketing messages, and are supported only as long as they do so.<sup>29</sup> A physician who expresses doubts about a product's efficacy, concerns about its risks, or enthusiasm for a competing therapy will not receive further speaking opportunities.<sup>24</sup>

### Combating commercial influence

Several attempts to combat pharmaceutical influence have been made. In July 2018, the Colombian Ministry of Health issued a regulation that creates a public registry of "value transfers" that occur between the pharmaceutical industry and healthcare professionals.<sup>30</sup> In the United States, pharmaceutical companies are required to report gifts to physicians in a publicly accessible Federal database called Open Payments.<sup>31</sup> Some states limit pharmaceutical company payments to physicians; Maine, Vermont, and Minnesota ban gifts to physicians.<sup>32</sup>

Some states and medical systems support academic detailing, a form of education in which healthcare providers visit physicians individually, as drug reps do, but academic detailers provide unbiased information about drugs. Academic detailing has been shown to encourage rational prescribing among physicians.<sup>33</sup>

Industry-free continuing medical education (CME) is an even more efficient way of providing unbiased information. In 2016, Washington, DC became the first jurisdiction in the United States to provide free, noncommercial, independent, online continuing education to physicians, other healthcare providers, and pharmacists. The DC Center for Rational Prescribing is funded by the DC Department of Health.<sup>34</sup>

### Conclusion

Pharmaceutical companies are legally required to represent the best interests of their shareholders, and all the activities described in this article have been carefully designed to expand market share. Pharmaceutical companies should not educate prescribers on the appropriate use of pharmaceuticals because they do not represent the public interest. The success of pharmaceutical promotion, often disguised as educational activities, is partly due to the absence of truly independent, evidence-based, prescriber education professional organizations, governments, universities, research, and regulatory agencies have left a void that pharmaceutical corporations have exploited. It is time to reverse that trend. Personal promotion to physicians by sales reps and peer promotion by KOLs are powerful and effective marketing tactics that undermine rational prescribing and patient care. Physicians should avoid seeing drug reps, attending industry-sponsored meetings and events, or utilizing any industry-sponsored educational material. Laws and regulations

should be put into place to ban gifts and payments to physicians.

### Funding

None.

### Conflicts of interest

A.F.-B. directs PharmedOut, a Georgetown University Medical Center project in Washington DC that encourages rational prescribing. PharmedOut has a contract with the George Washington Milken Institute School of Public Health to create content for the Washington DC Center for Rational Prescribing (DCRx), which creates industry-free continuing medical education modules and resources for the Washington DC Department of Health. A.F.-B. also has a contract with the George Washington Milken Institute School of Public Health to analyze pharmaceutical marketing data from Washington DC. She is a paid expert witness at the request of plaintiffs in litigation regarding pharmaceutical marketing practices.

N.H. does not have any relationships that might constitute a conflict of interest with the issues discussed in this paper.

### References

1. Fugh-Berman A, Ahari S. Following the script: how drug reps make friends and influence doctors. *PLoS Med* 2007;4:e150.
2. Sigworth SK, Nettleman MD, Cohen GM. Pharmaceutical branding of resident physicians. *JAMA* 2001;289:1024–1025.
3. Steinman MA, Shlipak MG, McPhee SJ. Of principles and pens: attitudes and practices of medicine housestaff toward pharmaceutical industry promotions. *Am J Med* 2001;110:551–557.
4. McKinney WP, Schiedermayer DL, Lurie N, et al. Attitudes of internal medicine faculty and residents toward professional interaction with pharmaceutical sales representatives. *JAMA* 1990;264:1693–1697.
5. Dana J, Loewenstein G. A social science perspective on gifts to physicians from industry. *JAMA* 2003;290:252–255.
6. Wood SF, Podrasky J, McMonagle MA, et al. Influence of pharmaceutical marketing on Medicare prescriptions in the District of Columbia. *PLoS One* 2017;12:e0186060.
7. Perlis RH, Perlis CS. Physician payments from industry are associated with greater Medicare part D prescribing costs. *PLoS One* 2016;11:e0155474.
8. Yeh JS, Franklin JM, Avorn J, et al. Association of industry payments to physicians with the prescribing of brand-name statins in Massachusetts. *JAMA Intern Med* 2016;176:763–768.
9. Chren MM, Landefeld CS. Physicians' behavior and their interactions with drug companies: a controlled study of physicians who requested additions to a hospital drug formulary. *JAMA* 1994;271:684–689.
10. Lurie N, Rich EC, Simpson DE, et al. Pharmaceutical representatives in academic medical centers. *J Gen Intern Med* 1990;5:240–243.
11. Wazana A. Physicians and the pharmaceutical industry: is a gift ever just a gift? *JAMA* 2000;283:373–380.
12. Brax H, Fadlallah R, Al-Khaled L, et al. Association between physicians' interaction with pharmaceutical companies and their clinical practices: a systematic review and meta-analysis. *PLoS One* 2017;12:e0175493.
13. Mintzes B, Lexchin J, Sutherland JM, et al. Pharmaceutical sales representatives and patient safety: a comparative prospective

- study of information quality in Canada, France and the United States. *J Gen Intern Med* 2013;28:1368–1375.
14. Shaughnessy AF, Slawson DC, Bennett JH. Separating the wheat from the chaff: identifying fallacies in pharmaceutical promotion. *J Gen Intern Med* 1994;9:563–568.
  15. Molloy W, Strang D, Guyatt G, et al. Assessing the quality of drug detailing. *J Clin Epidemiol* 2002;55:825–832.
  16. Spurling GK, Mansfield PR, Montgomery BD, et al. Information from pharmaceutical companies and the quality, quantity, and cost of physicians' prescribing: a systematic review. *PLoS Med* 2010;7:e1000352.
  17. Sah S, Fugh-Berman A. Physicians under the influence: social psychology and industry marketing strategies. *J Law Med Ethics* 2013;41:665–672.
  18. Ornstein C, Jones RG, Tigas M. Now there's proof: docs who get company cash tend to prescribe more brand-name meds. 2016; ProPublica, Cited [11 Aug 2016]. Available from: <https://www.propublica.org/article/doctors-who-take-company-cash-tend-to-prescribe-more-brand-name-drugs>.
  19. Elliott C. The drug pushers. *Atlantic Monthly*. 2006. [Cited 11 Aug 2016]. Available at: <https://www.theatlantic.com/magazine/archive/2006/04/the-drug-pushers/304714/>
  20. Krumholz SD, Egilman DS, Ross JS. Study of neurontin: titrate to effect, profile of safety (STEPS) trial: a narrative account of a gabapentin seeding trial. *Arch Int Med* 2011;171:1100–1107.
  21. Hill KP, Ross JS, Egilman DS, et al. The advantage seeding trial: a review of internal documents. *Ann Intern Med* 2008;149:251–258.
  22. Spelsberg A, Prugger C, Doshi P, et al. Working Group on Health and Working Group on Freedom of Information, Transparency International Deutschland eV. Contribution of industry funded post-marketing studies to drug safety: survey of notifications submitted to regulatory agencies. *BMJ* 2017;356:j337.
  23. Barbour V, Burch D, Godlee F, et al. Characterisation of trials where marketing purposes have been influential in study design: a descriptive study. *Trials* 2016;17:31.
  24. Carlat D. Dr. Drug Rep. November 25, 2007; *New York Times Magazine*, Available from: <http://www.nytimes.com/2007/11/25/magazine/25memoir-t.html>.
  25. Fugh-Berman A, Melnick D. Off-label promotion, on-target sales. *PLoS Med* 2008;5:e210.
  26. Meixel A, Yanchar E, Fugh-Berman A. Hypoactive sexual desire disorder: inventing a disease to sell low libido. *J Med Ethics* 2015;41:859–862.
  27. Moynihan R. Key opinion leaders: independent experts or drug representatives in disguise? *BMJ* 2008;336:1402–1403.
  28. Fugh-Berman A. Doctors must not be lapdogs to drug firms. *BMJ* 2006;333:1027.
  29. Fugh-Berman A. Key opinion leaders: thus are our medical meetings monitored. *BMJ* 2008;337:a789.
  30. Farmacéuticas deberán reportar pagos a actores del Sistema. *Eje* 21, June 30, 2018. Available from: <http://www.eje21.com.co/2018/06/farmacéuticas-deberan-reportar-pagos-a-actores-del-sis-tema/>.
  31. Open Payments. (database). [Cited 11 Aug 2016]. Available from: <https://www.cms.gov/openpayments/>.
  32. Iskowitz M. Limits on pharma payments to doctors back on policy menu. *Medical Marketing Media*. [Cited 08 Nov 2017]. Available from: <https://www.mmm-online.com/legalregulatory/limits-on-pharma-payments-to-doctors-back-on-policy-menu/article/706001/>.
  33. Avorn J. Academic detailing: "Marketing" the best evidence to clinicians. *JAMA* 2017;317:361–362.
  34. DC Center for Rational Prescribing. Available from: <https://dchealth.dc.gov/dcrx>.