Social networks impact the drugs physicians prescribe

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STANFORD GRADUATE SCHOOL OF BUSINESS — The drugs your physician prescribes may well depend on the behavior of an opinion leader in his or her social network in addition to your doctor’s own knowledge of or familiarity with those products.

Pharmaceutical firms, pay attention. Marketing to opinion leaders can boost revenues by an average of 18 percent over the revenue benefits derived from marketing to physicians who aren’t opinion leaders, according to recent research by Harikesh Nair, assistant professor of marketing at the Stanford Graduate School of Business. The exact size of this “spillover” effect depends on the drug in question as well as how long it has been on the market or whether there have been changes to drug usage guidelines.

“Most drugs are prescribed by general practitioners who don’t have as much knowledge as specialists do, and who therefore solicit the opinions of those specialists when making prescribing decisions,” says Nair, whose paper, “Asymmetric Peer Effects in Physician Prescription Behavior: The Role of Opinion Leaders,” was co-written with Puneet Manchanda, an associate professor of marketing at the University of Chicago, and Tulikaa Bhatia, an assistant professor of marketing at Rutgers University.

Opinion leaders are generally physicians who hold academic titles at medical schools and who have contributed significantly to peer-reviewed publications. The pharmaceutical industry is a big believer in the role such physicians play in spurring the sales of drugs. Indeed, the 15 largest pharmaceutical manufacturers spend about 32 percent of their total marketing dollars on opinion-leader activities, much of it involving making personal sales calls to doctors, a practice called detailing. Additionally, the industry as a whole is estimated to spend about 24 percent of its marketing budgets on opinion-leader activities.

Opinion-leader activity is also stepped up when there are shifts in market dynamics, says Nair. “The launch of a new competitive drug, the withdrawal of a drug from market, or the issuance of new guidelines by the Department of Health and Human Services and/or the National Institutes of Health each make pharmaceutical firms intensify their detailing efforts to opinion leaders,” he says.

But the exact size of these word-of-mouth spillover effects has been much debated. Some analysts have put the incremental increase in sales at 80 percent or even 100 percent above what the opinion leader would personally prescribe. “Such reports are a bit naïve,” Nair says. “Still, we found the spillover effect to be significant enough for pharmaceutical firms to continue investing in these activities.”

But challenges abound before pharmaceutical firms can reap the potential benefits of targeting opinion leaders. For starters, there’s the problem of correctly identifying opinion leaders. “There is an entire cottage industry of consulting firms that attempt to pinpoint who these people are,” says Nair. After all, an opinion leader is technically defined by the fact that others look to him or her for guidance in making decisions—and this varies from individual to individual. “A doctor in Palo Alto, California, might not know or care about the opinion of even a very famous specialist in Manhattan, but may instead rely upon a close associate in the same town. And, alternatively, his opinion leader would be very different from the one of a physician who lives in Illinois,” says Nair.

Nair and his colleagues solved that particular problem by basing their research on a survey of 1,500 physicians performed by a leading pharmaceutical company. The study focused on a large therapeutic class of drugs routinely prescribed for a serious chronic disease that impacts a quarter of all U.S. adults. The main objective of the survey was to identify the physicians who most influenced other doctors’ decisions. Thus the doctors surveyed...
provided the names of the physicians they depended on for guidance—and provided details of how they got their information about their opinion leaders’ beliefs and actions.

This self-identification of each physician’s social network allowed Nair to pinpoint opinion leaders. That information was then coupled with data provided by the pharmaceutical company on its marketing efforts for its drug—as manifested by the detailing efforts targeting individual physicians as well as statistics on the number of prescriptions written by each doctor.

The results were instructive. More than 92 percent of physicians surveyed reported being influenced by only one opinion leader. And the typical opinion leader for this particular class of drugs was a research-active specialist physician associated with a university-based hospital who had published seven scholarly papers.

The data also helped the researchers quantify how doctors found out what their particular opinion leaders thought about a drug. About 95 percent of physicians said they got this information from personal contact. Seventy-eight percent interacted with their opinion leaders through symposia/conferences; 67 percent by meeting in clinical and/or hospital settings; and 32 percent by scientific articles published by the opinion leaders.

The researchers also found that certain statistical “controls” were necessary to make sure the right conclusions were drawn from analysis of the data, and that the spillover effects of marketing to opinion leaders were not overstated. The results have implications for other industries, as interest in the effects of social interactions has intensified with the rapid growth of social network websites such as MySpace and Facebook. The current study cautions against the use of naïve statistical methods for analysis of data from these settings, since they can be expected to overstate the extent of spillovers among users.

The findings have important implications for pharmaceutical firms, according to Nair. Currently, there is a good deal of anecdotal evidence that pharmaceutical firms detail most aggressively to doctors who prescribe more drugs. “Our analysis says that this approach isn’t very effective,” says Nair. “Since the prescription behavior of opinion leaders has such a significant impact on the behavior of others, pharmaceutical firms would be better off focusing more on them.”

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