Pharma Marketing News

www.pharmamarketingnews.com

Jan 2005
Vol. 4, No. 1
•
Published by
VirSci Corp.
www.virsci.com

Guest Article Reprint # 41-01

Can Health Web Sites Improve Compliance?

By **Mario Cavallini**

The logic seems obvious. The more that a patient knows about a condition and its treatment, the better the patient should do at compliance and healthy life choices. Sounds logical, but is it true? As often is the case with medical questions, you can find parts of the answer but not the big picture.

Cochrane Collaboration Metanalysis

Recently, a reviewer for the British medical literature service Cochrane Collaboration tried to solve this particular jigsaw puzzle (see "Interactive Health Communication Applications for people with chronic disease"). For puzzle pieces, Elizabeth Murray and colleagues from University College London (UCL) collected 28 clinical studies dealing with patient-education CD-ROMs, Web sites, video discs, in-house network applications, etc. Treating these various media as a general category, which they called "Interactive Health Communication Applications (IHCAs)," Murray et al then pooled the data via metanalysis, treating the 28 smaller studies as if they were inputs to a broader, larger study to assess the effects of IHCA usage on patient health practices.

When the number crunching was done, they found that IHCAs were associated with improved knowledge and social support, but poorer clinical outcomes. Of course, statistical association (A is usually present at the same time as B) does not prove causality (A causes B). Nonetheless, the Cochrane Review authors took the plunge.

"Consumers who wish to increase their knowledge or social support amongst people with a similar problem," said the authors, "may find an IHCA helpful. However, consumers whose primary aim is to achieve optimal clinical outcomes should not use an IHCA at present. Further research is needed to determine the reason for this negative effect on clinical outcomes, whether an optimal IHCA can achieve behaviour change and improved health outcomes, and if so, what are the essential features of such an IHCA, and the extent to which they differ according to patient group or condition."

The subsequent UCL press release boiled the message down to simpler language: "Knowledge may be hazardous to web consumers' health." The next few days saw coverage in the popular press around the world that "the Web can be hazardous to your health.

What's Wrong With This Picture?

As Murray said in the UCL press release about her own conclusions, "This whole finding confounds conventional wisdom." Critical readers of the review looked into why Murray's jigsaw puzzle didn't make sense. They didn't have to look hard.

First of all, the puzzle pieces came from different boxes. "Interactive health communications applications" sounds like a uniform category, but it mixes a variety of documents and services that should not be considered equivalent in intent to improve health status or treatment compliance.

"The technologies for which the data is pooled are truly apples and oranges," a reader pointed out. "These include CD-ROM programs, restricted network based applications, videodiscs, open access web, and closed access web, as well as other formats. The purpose of the programs includes patient support systems, patient education, behavioral lifestyle change interventions, games, customized e-mail, discussion groups, personal decision support, etc. The authors excluded decision aids (while including decision support) and computerized cognitive behavioral therapy (while including tutorials to promote behavioral and lifestyle change). This seems to be a confusion of inclusion and exclusion criteria."

Secondly, the pieces got broken in the process of forcing them together. Findings that were favorable (such as relative reduction in symptomatic days or body mass index) were tallied as negative instead of positive.

These criticisms convinced Murray *et al* to withdraw the paper, and the Cochrane Collaboration to "explore changes to our quality assur-

ance processes to avoid similar problems in the future."

Lack of Benchmarks

It would be good to recall the frustration at the heart of the review, which Murray noted in the paper's conclusion: "The number and range of IHCAs is increasing rapidly; however, there is a shortage of high quality evaluative data."

Pharmaceutical companies obviously have a major stake in successful compliance with a therapeutic regime and seek to encourage use of their products beyond the first or second prescription. However, understandably, they tend to regard the performance of compliance support programs as proprietary information. Industry benchmark services such as Datamonitor offer hypothetical cases and descriptions of the mechanisms of existing programs (e.g. Xenical, Detrol LA, Copaxone), but find little to say about bottom-line results.

As a recent Forrester report ("Justifying Rx compliance marketing") noted: "Managers seeking to scope an interactive compliance program will find little data to underpin their assumptions. Why is GlaxoSmithKline's Committed Quitters smoking cessation program touted as a success? Why did the email program to support a well-known CNS product only register 50% of its site visitors? Little is publicly documented about why some programs succeed while others fail to get off the ground. As a result, managers can't readily extrapolate from others' experience to predict the success of a proposed program."

Certainly, the wide variety of behavioral standards of "success" in these programs frustrates comparative analysis, as seen in the unfortunate experience of Murray and colleagues. Nonetheless, individiual success stories are available, such as the citation in the Forrester report of the BoneMatters e-mail program supporting Miacalcin osteoporosis nasal spray, which "boosts therapy duration by an average of seven weeks versus a control group."

Another confounding factor pointed out by both Datamonitor and Forrester is the complex nature of compliance, in which many factors support or block cooperation with doctor's orders. Forrester notes, "programs that address these hurdles for a given patient must be flexible and creative. Teams must test multiple approaches to tune compliance programs for maximum lift. This kind of trial and error may well lead to outstanding results — but not those easily predicted ahead of time."

According to a Datamonitor report ("Disease management online: Web-based tools for patients"), healthcare plans have a more difficult target than pharma marketers in calculating return on investment (ROI) for disease management (DM) programs: "Calculating the ROI for any DM program raises the question of what online DM programs are trying to achieve. While improved patient compliance with a treatment or reduced hospital stays are clearly benefits of any program, measuring the costs of managing a condition or even potentially preventing a condition is difficult. The problem is confounded when a condition is a risk factor for other diseases, or when a badly managed condition is not likely to impact the health of a patient for a period of time.

"Health plans work out ROI based on the costs of existing patients in care, such as a specific treatment, a stay in the hospital or a trip to an emergency unit," continues the Datamonitor report. Comparisons of the average costs of members who do and do not participate in online DM programs are used to assess the return. However, calculating the ROI of a specific DM program over time involves accounting for hundreds of different factors that vary with the epidemiology of each different condition. The complications associated with this explain why investment in DM programs for diseases with a low prevalent population is so low.

"For stakeholders that do not cover the direct costs of patient care, such as DM vendors and pharmaceutical companies, measuring the ROI is a different task. The benefits for pharmaceutical companies are seen in improved compliance to a treatment, better clinical outcomes and, importantly, marketing opportunities. Overall, ROI will be seen in improved, or even maintained, sales. Given the short lifecycles of branded drugs, raising the awareness of the condition and encouraging patients to continue with a treatment is essential in competitive markets."

Oversimplifying the situation only slightly, health plans can't document the benefit of online patient education, and pharma marketers won't – at least, not to each other.

The Bottom Line: Be Flexible

So where does this leave the marketer who is considering behavior-change programs online?

First of all, don't worry about the Cochrane review; it overstated its case and should disappear with time. The pharma marketer really is not concerned with the global picture of "IHCAs," but with the

specific question of how to improve trial and compliance of the product – a much more manageable picture.

The logic remains sound that information plus motivation is important to improve compliance. However, compliance is a moving target, even in something as relatively simple as "taking the drug longer." Different patients have different reactions to incentives and barriers, and they will change over the course of treatment.

A compliance-based marketing program should build in solid capabilities for monitoring performance and flexibility for fine-tuning and rebalancing the tactics. For this, the Web is ideal – a well-designed e-marketing strategy and supporting tactics can anticipate and adapt to the needs of visitors; individual components can be monitored on a realtime basis against predetermined objectives; and tactics can be modified or replaced faster than in any other medium.

Pharma Marketing News

Publisher & Executive Editor

John Mack
VirSci Corporation
www.virsci.com
PO Box 760
Newtown, PA 18940
215-504-4164, 215-504-5739 FAX
mailto:editor@pharmamarketingnews.com

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