



Do you know what your physician is doing online?

by David Stevens

There's a strong likelihood your physician belongs to a social network. Social networking is big and getting bigger. How big? Nearly 10% of all time spent on the Internet is spent in social networking sites [1]. To put it in perspective, more time was spent last year interacting on social networks than reading and sending personal emails. If recent data captured by Nielsen Online are any indication, that 10% figure will quickly expand, reflecting the fact that social networking sites are growing three times faster than the rest of the Internet [2].

65% of all active internet users have now joined a social network site, up from 57% just last year [3].

And it's not just the younger generation getting involved. As social networking and blogs mature, the audience they attract has also matured. This shift in demographics has been led by Facebook, whose greatest recent growth has come from people aged 35-49 years of age (+24.1 million). From December 2007 through December 2008, Facebook added almost twice as many 50 to 64-year-old visitors (+13.6 million) than it has added visitors younger than 18 years (+7.3 million) [4].

Similar adoption rates are evident in healthcare-related social networks. The percentage of physicians going online to research or interact with colleagues is growing rapidly. Manhattan Research (a pharmaceutical and healthcare market research and services firm) estimated last year (2008) that 88% of all physicians go online to access pharmaceutical, biotech and medical device information. Additionally, the report noted that 41% of all research conducted by physicians is currently taking place online, and that most physicians anticipate that percentage of online research to double in the coming year[5].

Why do physicians use open social networks like Wikipedia and physician-only social networks such as Sermo and Medscape Physician Connect?

Wikipedia

Surprising to many was the recent discovery that a significant percentage of online research done by physicians is taking place on Wikipedia (wikipedia.org) [6].

"Wikipedia, the free encyclopedia" is a massive endeavor that exemplifies the spirit and practice of Web 2.0 social media. The website is a "multilingual, web-based, free-content encyclopedia project based mostly on anonymous contributions" [7]. At this writing, the English version of Wikipedia is the 9th most popular destination on the Internet,

garnering between 50 and 70 million unique visitors every month [8].

The vast majority of medical and scientific content on Wikipedia is generated anonymously without formal peer review. Nearly anyone with an Internet connection can contribute new articles or edit existing articles on the website. This unprecedented openness has been both Wikipedia's greatest weakness and strength. As addressed in the Wikipedia Medical Disclaimer:

Wikipedia contains articles on many medical topics; however, no warranty whatsoever is made that any of the articles are accurate. There is absolutely no assurance that any statement contained or cited in an article touching on medical matters is true, correct, precise, or up-to-date. The overwhelming majority of such articles are written, in part or in whole, by nonprofessionals [9].

Certainly such a disclaimer ought to dissuade healthcare professionals from visiting the website; but, the opposite appears to be true.

Physicians and medical researchers are using the site as a destination resource in record numbers [10]. "The number of physicians turning to Wikipedia for medical information has doubled in the past year alone [2009]", reports Manhattan Research, noting that fully 50% of physicians use Wikipedia as a medical resource [11].

The accuracy of Wikipedia's content has been the subject of many articles and blog posts. The few scientific enquiries into the website's accuracy [12] have indeed demonstrated that errors of omission exist in high numbers, and the general depth of medical and scientific content is often shallower and less complete than other traditional online sources. However, many of these same studies appear to substantiate the accuracy of the website's factual content. A study published in November of 2008 in *The Annals of Pharmacotherapy* found that Wikipedia contained fewer factual errors than the Medscape Drug Reference and that quality of content on Wikipedia generally improved over time, as current entries were superior to those 90 days prior ($p = 0.024$) [13]. A second study published in 2006 by *Nature* found the accuracy of science in Wikipedia was "surprisingly" good. Stating, "The number of errors in a typical Wikipedia science article [was] not substantially more than in Encyclopaedia Britannica" [14,15].

Beyond the accuracy (or inaccuracy) of content, there are three primary reasons why physicians and other medical researchers find a Wikipedia attractive:

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1. **Timeliness**
Content on Wikipedia is in a constant state of update. Articles that reflect items in popular culture or the news are routinely updated within minutes. FDA black box warnings and other more monumental changes to medical and scientific topics are typically updated within 24 hours.
2. **Editorial diversity**
The editorial diversity of Wikipedia is unrivaled. Anyone with an Internet connection can edit or author an article on Wikipedia. As a result, a great number of stakeholder perspectives are represented in Wikipedia articles. Overall, most writing feels neutral and absent of political ideologies.
3. **Referencing**
Using diabetes as an example, the main article on this subject has over 100 external references, many possessing the peer-reviewed authority currently lacking in Wikipedia itself. In contrast, WebMD, has 16 external references on a page crowded with ads and other distractions.

The great promise made by Wikipedia and other similar social networking platforms is accessibility. These online communities aggregate unprecedented amounts of data from a myriad of sources and effortlessly distill the information into pockets of data relevant to a single participant. Ultimately, Wikipedia may not contain better medical information, but because of its broad structure and overall mission, it may serve as an access point for better information.

Sermo and Medscape Physician Connect

Over the past three years, a new kind of closed social network has evolved among physicians: physician-only online communities where physicians can share considered opinions, ideas, and treatment information with their colleagues.

In terms of size, the big fish in this pond are Sermo and Medscape Physician Connect, each boasting an online population of over 100,000 physicians. Sermo, established first in 2006, was originally imagined as an adverse effect reporting system [16]. The site has since grown into a platform containing thousands of discussion boards, polls, continuing medical education, and industry-sponsored questionnaires.

Medscape Physician Connect was launched in April 2008, and has quickly grown through promotion by the Medscape brand into arguably the largest physician-only social network [17]. In addition to the functionalities contained within Sermo, Medscape Physician Connect can mine a decade's worth of physician oriented content.

It is not surprising that physicians have become quick adopters of this technology that enables them to interact safely and privately with colleagues from around the world. *Newsweek* has reported that 15% of all practicing physicians in the United States have signed up for Sermo [18].

To illuminate the collective wisdom and user-generated content available on these physician-only social networks, Sermo has publicized a dramatic case study:

28 year old male construction worker impaled left thumb with a reciprocating saw blade (8 inch blade used to cut through wooden walls). The patient was able to remove the blade from the saw and presented with the blade in his thumb. He had an intact neurological exam. The blade appeared to pass along the bone and not through it. What would you do at this point? [19]

This particular case has to date received 968 physician responses. It was presented by an ER physician who wrestled with the dilemma of either pulling the serrated blade out, causing damage, or pushing it through, thereby causing damage.

In the midst of a lively discussion around which direction, push or pull, would produce the lesser amount of damage, a single physician presented an innovative solution. The answer? To slit a common drinking straw down the middle and slide it in over the serrated edge of the blade like a scabbard, then guide the tool out while protecting the thumb from the teeth of the saw [20].

This particular solution demonstrates how social networks can harness the collective wisdom of a large group to generate meaningful solutions to real-world challenges.

In summary, social networks such as Wikipedia, Sermo, and Medscape Physician Connect stimulate a new level of communication to what has otherwise been an incommunicative global healthcare system. The great diversity of experience represented by the thousands of physicians on Wikipedia, Sermo and Medscape Physician Connect create an unprecedented opportunity for meaningful collaboration. Opinions, insights, and answers to clinical quandaries can now be quickly aggregated and assessed, leading to better-informed decisions and improved patient care.

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