

**Discussions of Health Web Sites  
in Medical and Popular Media**

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## **Discussions of Health Web sites in Medical and Popular Media**

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To what extent and how do medical and popular media discuss issues of quality when it comes to health Web sites? The answer in brief is that while academic medical researchers are deeply concerned about the quality of Web sites that center on health, the popular media hardly attend to this issue. A deeper answer to the question uncovers more disconnects between academic Web site analysts, survey researchers, and popular media.

In the following reports, the members of a University of Pennsylvania research group that I directed explore this issue in two ways. First, they update and review an analysis of quantitative scholarly research on the quality of health Web sites. Second, they examine the general discussion of health Web sites over six months in 47 media outlets representing a wide range of media, from medical research journals to television network news operations.

The topic is important because so many people go online to get health information. A national survey conducted by the Pew Internet & American Life Project is perhaps most definitive. It found that 62 percent of internet users have gone online in search of health information. Extrapolating from its data, the Pew group further found that about 6 million Americans go online for medical advice on a typical day. That, it added, means “more people go online for medical advice on any given day than actually visit health professionals, according to figures provided by the American Medical Association.”<sup>1</sup>

The Pew group also found that Web health “seekers” often use search suggestions from friends, search with others, or ask people they consider knowledgeable searchers to help them find health information online. They report being satisfied with their searches, and the few who discuss their findings with physicians state that they agreed that what they had learned was correct. The Pew researchers readily admit that the health seekers may not have been as successful in gaining correct knowledge as they believe. And, in fact, an experimental study by Stanford and colleagues concluded that consumers make judgments about health site credibility in ways that are quite different than what medical professionals consider appropriate.<sup>2</sup>

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<sup>1</sup> Susannah Fox and Lee Rainie, “Vital Decisions: How Internet Users Decide What Information to Trust When They or Their Loved Ones Are Sick.” Pew Internet & American Life Project, 22 May, 2002.

<sup>2</sup> See Susannah Fox and Lee Rainie, “Vital Decisions,” and Susannah Fox and Lee Rainie, “The Online Health Care Revolution: How the Web Helps Americans Take Better Care of Themselves.” Pew Internet & American Life Project, 26 Nov., 2000. See also J. Stanford, E. Tauber, B.J. Fogg, and L. Marable, “Expert vs. Online Consumers: A Comparative Credibility Study of Health and Finance Web Sites.” Consumer WebWatch, October 2002.

The role that media may play in explaining the world of health Web sites and searching for their audiences provides the impetus for this work. Media in a society can collectively be understood as an institution. An institution is a loose-knit set of organizations that exercise authority over key aspects of social life. The justice system, the military, government, religion and the law are among the institutions that traditionally hold the prerogative to proclaim what the world looks like or ought to look like. In the U.S. and many other countries, media such as television, newspapers, magazines and the internet also offer constructions of the world to millions of people. While medicine addresses healthcare concerns and the law sees the formal rules in society as its domain, the media institution depicts these and all other institutions. The media, in short, are the quintessential vehicles for portraying the life of society to society.

Health care is one area that consistently gets attention in these portrayals. From advice about medical procedures in magazines to disease-alert spots in the national news to doctor dramas and comedies on prime time TV, health and disease are major aspects of popular culture. Audiences read, view and see stories about what is important when it comes to sickness and health, why, what to do about it, when, and with what caveats.

We wanted to know what various media tell Americans about a new arena for health information, the health Web site, and the best ways to search for and use health information. What do the newspapers and magazines people read, and the TV news programs that they watch, say about the general idea of health Web sites and about specific sites? How do they portray the audiences for such sites — their knowledge of the Web, the ways they search, the Web sites' effects on them? How do the media depict the ways the health industry uses the Web and the effects of Web sites on the medical community? To what extent are all of these topics raised in ways that help audiences approach health online with critical, Web-literate eyes?

To answer these questions, the group turned to a broad range of media.

- 5 medical research journals;
- 16 health industry trade periodicals;
- 5 major daily newspapers;
- 14 consumer magazines;
- 2 internet online trade “periodicals”;
- 5 television network news operations.

A variety of interactive databases allowed us to digitally search all but the medical journals, a few of the magazines and the two online internet trade publications. The online periodicals had their own search engines. We had to search the journals and magazines by reading them. Whether by hand or computer, our search terms were the same throughout the media we studied: the word health in any manifestation [*health!* in search-term language] and the words *Web* or *Web site*. It should be noted that the word health did not need to appear explicitly in

an article's text for the article to appear in our sample. The word could also have been located in the electronic indexing terms that Nexis or Dow Jones uses. They tag articles about diseases, medicine, and other "health" topics with that "keyword" even if the word doesn't show up in the article. That allowed us potentially to search for articles about diabetes Web sites that didn't have the word "health" in them but, of course, are about health. Similarly, in our searches of periodicals targeted toward medical or health professionals we did not need to use the word *health*.

Looking at different media, Kara Coluccio, Alyssa Hersh, Lee Humphreys, Lela Jacobsohn, and Nadia Sawicki analyzed the results of these searches qualitatively though systematically. Their focus was on the way the media discussed seven broad categories of information that reflect the questions noted above. They looked at the health Web sites referenced as well as depictions of the audience, the audience's knowledge of the Web, the Web sites' effects on the audience, the health industry's use of the Web, the effects of Web sites on the medical community, and whether and how ways to rank or critique Web sites came up.

To get yet another frame for comparing the media's discussion of health Web sites, we turned to published academic research on the quality of such sites. Fortunately, in 2001 *JAMA* had published a careful analysis by R. Eysenbach and his colleagues of the many scholarly articles that have quantitatively examined Web site quality. Kara Coluccio updated Eysenbach et al.'s list of articles and examined the entire group of pieces through the lens of our seven categories of concern.

The findings of all the studies are noted in the reports that follow. Looking across them, we can suggest a number of key generalizations about the way the media treat health Web sites. Most prominently, we note three disconnects.

- **The first disconnect is between the scholarly medical writings and the popular press regarding Web sites as an issue of public concern about quality.** The medical literature is consumed with the importance of what might be called the clinical accuracy of the sites, though an understanding of what that means — and also of whether Web sites achieve it — varies immensely. The health industry trade publications, the online trade periodicals, and popular press, by contrast, pay little attention to clinical accuracy.
- **The second disconnect is between the scholarly press and emerging survey and experimental research about the ways that people search for medical information, what they expect, and what "accuracy" and "quality" mean.** The studies by the Pew group, Stanford and others point to important directions for understanding the ways in which people consider quality online. By contrast, medical journals ignore subjective public approaches to quality in favor of clinical definitions.
- **The third disconnect is between the popular press and emerging research about the ways that people search for medical information, what they expect, and what "accuracy" and "quality" mean.** We found that not only do the popular media take little account of quality concerns that scholars have raised, they also do not attend to issues that surround the search for health information — for example, the bad and

good ways to do it, ways to evaluate sites, and ways to check information found online.

These disconnects suggest that the popular press, which is filled with health stories, is doing little to help the public understand one of the biggest health stories in decades — the rise of an enormous and often confusing online health information universe. Related findings across our studies confirm this conclusion. For example:

- Across the media we studied, the digital divide is typically not presented as an issue; neither is Web literacy.
- In popular media, health Web sites are mentioned largely in passing to quote information or send people to information.
- The Web is overwhelmingly treated positively as a way to search for health information.
- The assumption is that the audience has the Web and knows how to search even medical professional sites.
- Few health sites are noted with any regularity in the popular press. Most of those are government sites or dot-org sites.
- Systematic critiques of Web sites are rare.
- There were fewer than 10 mentions of *best practices* — indicators of quality that Web sites have and which audiences ought to consider.
- Seal-of-approval programs are almost never mentioned.

The following pages elaborate on these points and present other thought-provoking findings. The wide-ranging definitions of quality in medical journals along with the disconnect between their approach to quality sites and the findings of researchers about audience search strategies betray how little we know about what really comprises a quality Web site. Our investigation of the popular media reveals that they are removed from both matters, typically not addressing the quality issue at all.

The results of our studies are troubling and challenging for people who care about encouraging Web literacy. Clearly, people who care about informed Web searching ought to encourage popular media to bring up issues related to clinical accuracy in Web sites as well as to best practices in consumer search strategies. Advocates also ought to prod producers of magazines, newspapers and TV programs to generally address how their audiences can become critical users of health information online. Helping audiences better consume media will not disrupt the basic responsibilities and activities of media creators. With health and disease such major topics throughout popular culture, it will take just a bit of self-education, imagination, and determination for them to integrate Web literacy themes into discussions of health.

One goal of people concerned about health online ought to be to encourage this education among those who create media materials. A parallel tack might be to bypass the mass media and encourage libraries, schools, and community centers throughout the United States to bring people together to learn best practices of Web searching when it comes to health. Consumer WebWatch guidelines might form the nucleus of this sort of mass education campaign. At the same time, because the notion of quality is so poorly understood at this point, an energetic

public discussion about its meaning online and off might actually ignite public interest and foster education.

The best situation, of course, would be for both the popular media and community groups to carry out these activities. The need is strong. The Web that we see today is only the beginning of a huge interactive, information-on-demand media environment that will surround Americans as the century moves forward. The world of health will surely be a major part of that environment. It is important to begin now to ensure that the benefits of public access to it will far outweigh the costs.

## Discussions of Health Web sites In Academic Medical Journals

Kara Coluccio<sup>♦</sup>

With more and more health information being posted on the Web, the academic and medical communities have taken stock of this development and tried to assess its benefits, drawbacks, and implications for their field. Quality of information is a primary concern, and academic researchers have published their assessments of the quality of health Web sites in several academic and/or medical journals. To gain a better understanding of the academic and medical interests and discourse around health Web sites, this study takes a look at academic literature in two ways. First, it examines and conducts a meta-analysis of quantitative academic studies of health-Web site quality to determine a general understanding of quality and to generalize the studies' findings. Second, it examines a six-month sample of the most prominent medical journals to look into more typical journal discourse on health Web sites.

The two sets of studies provided two sets of insights about the extent to which and way in which academic medical journals talk about health Web sites.

- **The meta-analyses reflected strong concerns among researchers about quality and accuracy of Web sites and their impact on members of the public.**
- **At the same time, the meta-analyses revealed a startling lack of consensus among researchers regarding the meaning of basic terms as quality, accuracy, and depth of detail when it comes to a Web site.**
- **By contrast, the six-month sample of medical journals revealed that Web site quality is not an issue that journals raise on a regular basis in their articles, letters, or editorials.**
- **A noteworthy departure from the sample was a *British Medical Journal* special issue devoted to studying the quality and credibility of health sites on the Web.**

### Method

In May 2002, *JAMA* published a meta-analysis of studies that attempted to quantify, describe, assess, and analyze the quality of health information on the Web. "Empirical Studies Assessing the Quality of Health Information for Consumers on the World Wide Web" by Eysenbach et al. reviewed 79 distinct studies of quality indicators of health Web sites. Eysenbach et al. sought to establish a methodological framework for understanding how quality on the Web is evaluated. They conducted a meta-analysis of empirical studies that

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evaluated the quality of health information Web sites or pages and reported quantitative results. In all, the meta-analysis included 79 studies for review, which in turn had evaluated 5,941 health Web sites, and revealed 86 distinct indicators of quality.

Eysenbach et al. concluded that their original goal of establishing a methodological framework may have been overly optimistic given the wide and variant range in study methods, rigor, quality criteria, population, and topics addressed in their pool of descriptive studies. The authors also found an overall negative attitude by researchers about the quality of health information on the Web, great disparity in academic conceptions of quality, and that little research on consumers' ability to use the Web and find quality information that they want and need. They concluded that more research needs to be conducted to develop an operational definition of quality criteria, to investigate the relationship between quality markers and other variables, such as consumer use and outcomes, and to investigate where and why gaps exist in quality health information on the Web.

Because it appeared that the *JAMA* meta-analysis ended before 2001, we extended the meta-analysis using nearly the same search strategies and inclusion criteria. We conducted a MEDLINE search from January 2001 to January 2003. The search terms were: (quality or reliability or accuracy or readability or evaluation or assessment) and (information or education or advice) and (internet or Web or e-health or "e-health" or cyber or www). To determine whether the study should be included, we looked to see if the author met Eysenbach et al.'s inclusion criteria. Eysenbach et al. included only those studies where authors did systematic Web search for health information; evaluated Web info likely to be used by consumers and professionals; evaluated Web site quality against certain explicit criteria; and provided quantitative results.

To explore how six months' worth of the most prominent medical journals dealt with health care on the Web, we conducted a search on the *ISI Citation Index* for the top 10 most commonly cited journals and the top 10 journals with the highest impact factor (the average number of citations per year). After finding 7 journals common to both ratings, we selected the top five of these for further review. For each of the five journals (*NEJM*, *Lancet*, *JAMA*, *British Medical Journal*, and *Annals of Internal Medicine*) we conducted a search for "Web site" or "Web site" between August 2002 and January 2003. The search retrieved 381 hits.

We examined the articles qualitatively. Data collection and analysis focused on six broad categories of information: the Web sites referenced, the audience, the audience's knowledge of the Web, the Web sites' effects on the audience, the health industry's use of the Web, and the effects of Web sites on the medical community.

### **The Academic Studies**

Our search yielded 33 English-language studies (see Table 1).<sup>3</sup> Eysenbach had found 79 such studies over a longer period.

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<sup>3</sup> There were seven overlaps with studies included in the Eysenbach et al. study.



<b>Table 1. General Properties of Studies</b>		
Property	# (Coluccio)	# (Eysenbach et al.)
Total citations returned from initial search	579	1545
Studies included and reviewed	33	79
Web sites reviewed across studies	3461	5941
Distinct quality indicators	52	86

All of the studies we examined included some listing and description of markers of quality they then attempted to quantify. In 33 studies, 52 distinct quality markers were mentioned. While nearly all studies included more than one quality marker, as Table 2 shows, only nine markers appeared in five or more studies; 26 appeared in only one study.

<b>Table 2. Properties of Quality Indicators Across Studies</b>	
(Data only taken from Coluccio analysis)	
Distinct quality indicators across all studies	52
Distinct quality indicators present in 5+ studies (most common)	9
Distinct quality indicators present in 2-4 studies (moderately common)	17
Distinct quality indicators present in 1 study (least common)	26

Though many studies seemed to agree on quality indicators, their conceptions and standards for measuring them varied considerably. Table 3 presents these quality indicators ordered by the number of studies measuring the indicator, briefly defines each, and presents combined data from the Eysenbach et al. study and ours on the range of Web sites researchers reported as meeting each indicator. For example, 18 of our 33 studies included accuracy as an indicator of quality and defined accuracy as the sites' adherence to standard practice guidelines and medical knowledge. Those 18 studies variously reported accuracy levels from 3 percent to 89 percent. Similarly, Eysenbach et al.'s larger sample size yielded 33 out of 79 studies reporting on accuracy, with a range of positive accuracy findings from 0-100 percent. It is clear that while the academic and medical community may be able to reach some agreement on the characteristics of a high quality Web site, the research reveals that the community is far from consensus in the way it understands and measures these indicators.

**Table 3. Most Common Quality Indicators**

Indicator	Definition	Number of Studies		Range of positive findings on indicator (%)	
		Eysenbach	Coluccio	Eysenbach	Coluccio
Accuracy	Presents information in compliance with accepted clinical standards and guidelines.	33	18	0-100	3 – 89
<b>Total:</b>		<b>51</b>		<b>0-100</b>	
Attribution	Presents clear references to sources of information.	32	10	18-100	10 – 100
<b>Total:</b>		<b>42</b>		<b>10-100</b>	
Currency	Displays date of original posting, updates, and modifications.	27	8	16-100	25 – 57
<b>Total:</b>		<b>36</b>		<b>16-100</b>	
Disclosure	Discloses information about site ownership, sponsorship, commercial funding, and conflicts of interest.	20	11	4-100	5 – 70
<b>Total:</b>		<b>31</b>		<b>4-100</b>	
Authorship	Displays site author’s name and affiliations.	19	8	7-80	24 – 67
<b>Total:</b>		<b>27</b>		<b>7-80</b>	
Completeness/Scope	Site includes satisfactory breadth and depth of information on site topic.	15	7	9-100	2 – 95
<b>Total:</b>		<b>22</b>		<b>2-100</b>	
Feedback Mechanism	Offers means to contact site creators or Webmaster.	14	5	0-100	1 – 91
<b>Total:</b>		<b>19</b>		<b>0-100</b>	
Evidence	Presents evidence on site, level of evidence, hierarchy of evidence.	5	7	18-84	8 – 38
<b>Total:</b>		<b>12</b>		<b>8-84</b>	
Readability	Site adherence to readability criteria – e.g., readability formulas, subjective writing styles, legibility, notation of reading level.	16	2	Not presented in percentages of correct findings.	Not presented in percentages of correct findings.
<b>Total:</b>		<b>18</b>			
Disclaimers/Caveats	Explains any potential shortcomings or inaccuracies.	7	5	0-93	24 – 61
<b>Total:</b>		<b>12</b>		<b>0-93</b>	

Table 3 shows great variability in conceptions of Web site quality. Such variability may be a result of differences in definition, Web sites chosen or judgment method. Sites may fare differently when compared to personal opinion, literature or expert consensus, or clinical guidelines. Researchers may interpret the terms differently. Consider, for example, that “accuracy” was variously defined as “accuracy of content,” “quality of procedural details,” “verifiable upon evidence,” “adherence to standard practice guidelines,” “accurate accounts of general info, risk factors, diagnosis, treatment, prevention, prognosis.”

It is worth noting that accuracy was the most prevalent quality indicator across studies and also the one with the most variability of findings. One might think that accuracy also involves the most variability in judgment compared to the other categories. With the exception of “completeness/scope” and “readability” the remaining indicators have “checklist-like” qualities to them in that the site either meets the criterion or it does not. Nevertheless, authors noted great variability in quality even in the seemingly more “objective” categories.

Variability notwithstanding, the studies overall concluded that the quality of health information on the Web is substandard. Table 4 divides these conclusions between our meta-analysis and that by Eysenbach and colleagues. Overall, 64 percent of the 145 studies reviewed gave negative evaluations to the general quality of health Web sites. The percentage was 64 percent with Eysenbach et al. and 51 percent with our sample, in which 11 percent more gave the sites overall a neutral evaluation. Because the studies in our sample typically chose Web sites at a later date than the ones analyzed by the Eysenbach team, it is tempting to infer from the difference that the quality of sites is improving slightly, if still not good. Because of the wide difference in evaluative schemes and sampled sites among the studies, however, it is difficult to determine if the difference in negativity among earlier studies reflects a less tolerant eye among those researchers or genuine improvement in the health Web site universe.

<b>Table 4. General Conclusions About the Quality of Health Web sites</b>						
<u>General Conclusion</u>	<u>Coluccio</u>		<u>Eysenbach et al.</u>		<u>Overall</u>	
	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>
Positive	5	15	7	9	12	11
Neutral	11	36	17	22	28	25
Negative	17	51	55	70	72	64
Total	33	100	79	100	112	100

### Discussions of the Audience

In nearly all of the studies we reviewed, authors considered the public, or health consumers, to be the primary audience for health Web sites and discussed the Web in relation to consumers. Some of the studies of disease-specific sites — for example, those centering on infertility, cancer, and arthritis Web sites — limited their discussions to people with these

specific conditions. Studies of more general sites discussed the audience simply as health consumers.

Overwhelmingly the studies asserted that the public uses the Web for health information and to make health-related decisions. It is important to note that none of the studies gathered information directly from health consumers. Seven studies cited statistics from other researchers to show that health information is one of the most sought after topics on the Web. The second most prominent theme across studies was the notion that though consumers know how to use the Web and do, they are not able to discern high quality health information from low quality information and need guidance in navigating health information on the Web. Moreover, several studies suggested that consumers not only need but want guidance from their healthcare providers, the government, or another Web site in the form of a rating system or credible directory.

Another recurring theme in the studies is the assertion (not based on those studies' research) that consumers use the Web to become more active participants in the medical encounter. Authors saw this potential as the rationale for a quality Web site; they contended that equipped with more information about their condition or disease, consumers can take a lead in their health matters. Authors also admitted the possibility of negative consequences: providing consumers with more numerous and varied sources of health information might cause patients to distrust their health care provider, which may add strain to the doctor-patient relationship.

### Discussions of the Health Industry

The studies we reviewed also commented on the health industry's uses of the Web and its assumed effect on physicians, hospitals, and other parts of the health industry. The most prominent theme in this area was a stress that the health industry consists of more than doctors, hospitals, and health plans. Studies noted that the commercial segments of the health industry, those offering cosmetic treatments, alternative remedies, and other non-medical related health services, try to exploit the marketing power of the Web and that consumers may confuse their Web hype with traditional medical information online. Only three studies noted that the health industry can play a role in checking the quality of health Web sites.

The authors of several studies expressed the belief that the Web adds new dimensions to the doctor-patient relationship. They advised providers that they must prepare to engage patients who are better educated on given health topics because of the online world. Several researchers suggested that providers should respect the patients' Web information but also act as an interface between the patient and the Web, a sort of information monitor, to educate him/her on identifying and using high-quality sites.

This look at scholarly studies illuminates the deep concern of certain researchers regarding the quality of health Web sites. It does not, however, necessarily reflect the discourse about the Web that takes place in medical journals on a weekly basis. To explore the general stream of academic journal discourse, we looked at the presence and nature of discussion about health Web sites in prominent medical journals and over the past six months.

## Journal Articles

The examination did not reveal the kind of consistent, ongoing interrogation of Web site quality that the academic researchers noted above seem to have wanted. In six months, the weekly *New England Journal of Medicine*, *Lancet*, *JAMA*, *British Medical Journal*, and *Annals of Internal Medicine* carried a total of 381 articles, letters and editorials that even mentioned Web sites. That was a small portion of their entire published matter of over 5,200 articles, letters, and editorials during the studied six month period. Moreover, when articles did note Web sites, they most often used them as a source of information and reference rather than as a topic of critical discussion.

Journal articles rarely discussed the quality of health Web sites overtly. When authors did mention health Web sites or Web sites with health related information (for example, The Centers for Disease Control Web site, [www.cdc.gov](http://www.cdc.gov)), they tended to use them as references or sources of evidence to support a claim. Similarly, article authors often use Web sites as a means to store supplemental data and evidence supporting a given article or study. Through these citations, the authors implied endorsements of these sites. The most frequently referenced sites were those of government agencies and non-profit organizations (i.e. [www.census.gov](http://www.census.gov); [www.nih.gov](http://www.nih.gov); [www.safekids.org](http://www.safekids.org); [www.doctorsoftheworld.org](http://www.doctorsoftheworld.org)). This practice is consistent with the finding in some academic studies noted earlier that higher levels of prestige and credibility are anecdotally associated with governmental and non-profit Web sites (i.e. [www.ahrq.gov](http://www.ahrq.gov); [www.guidelines.gov](http://www.guidelines.gov); [www.oncolink.upenn.edu](http://www.oncolink.upenn.edu); or [www.cancer.org](http://www.cancer.org)).

One consistent theme running through Web mentions in the weekly journals was its positive effects on the health industry. Articles asserted that the online environment was enabling the industry to access sources of information more readily and potentially more efficiently than in earlier years. They noted that the internet enabled health care organizations to serve as a storage place for huge amounts of data. They also pointed out that the internet enhances journal-publishing capabilities by increasing efficiency of peer review. The journals did not, however, present evidence to back up these assertions.

Consistent with this ongoing interest in the healthcare industry, the audience for a Web site in the general stream of journal editorials, articles and letters almost always did not mean typical consumers. Rather, the implied audience was healthcare providers or other members of the medical community. That may explain the articles' general lack of explanation regarding the organizations behind the Web sites. The authors probably assumed that their audience is familiar with these entities.

### The *British Medical Journal* – An Exception

One journal that did evidence deep scholarly concern about general consumers and health Web sites was the *British Medical Journal (BMJ)*. Week-to-week, the journal was mostly similar to the others studied, but it stood out because it devoted its entire March 9, 2002 issue

to studies of health Web sites. We included the five quantitative studies from the issue in our meta-analysis. Their findings fit quite consistently with Web evaluations that emphasized the inaccuracy of Web sites, that popular sites are not necessarily of higher quality than less popular ones, and that consumers are unable to assess the accuracy of sites, even though they think they can. One study concluded that seals-of-approval programs (such as HealthNet, Hi-Ethics, and URAC) that appear on health Web sites may be incompletely developed or not properly validated. Another study that replicated a 1997 study of Web site content concluded that there has been an overall improvement in adherence to guidelines for site quality. This finding echoes the finding of our meta-analysis that recent studies of Web quality seem to rate them less negatively than did the studies examined by Eysenbach and his colleagues.

Three editorial essays speak directly to the general concerns in the studies that we and Eysenbach et al. examined.

- An overall summary of the journal's papers notes strong disquiet about health Web sites as well as about attempts to judge quality and provide seals of approval. Nevertheless, the essay appears optimistic that in a competitive marketplace good sites would drive out bad ones without government regulation or even industry-wide approval systems.<sup>4</sup>
- Sasha Sheppard and Deborah Charnock, research fellows at the University of Oxford's Institute of Health Sciences, contend that the quality of health information in other popular media varies as widely as it does on the Web; other media simply do not receive the scrutiny the Web has received. Certainly, they say, "the combination of rapid access and wide dissemination makes it easy to understand the appeal of initiatives aimed at limiting access to misleading or inaccurate information on health." At the same time, "the exact purpose of controlling the quality of health information on the internet remains unclear. Health information in other media has not received the same degree of attention, even though the public is exposed to misleading and inaccurate information from a variety of sources."<sup>5</sup>

Sheppard and Charnock suggest that internet should not be seen as an exceptional form of media. They argue that seals of approval or regulatory regimens specific to the Web will not be nearly as successful as attempts to create a general understanding in the public of how to search for and understand health information in any media.

- A strongly worded comment from Tom Ferguson, senior research fellow in online health at the Pew Internet & American Life Project provocatively places U.S. Pew findings about Americans' satisfaction with internet health sites against the negative findings and discussions by academic medical researchers. Patients, said Ferguson, "do much more than just visit a single Web site and

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<sup>4</sup> Gretchen P Purcell, Petra Wilson, and Tony Delamothe, "The Quality of Health Information on the Internet," *British Medical Journal* 324 (9 March, 2002): 557-58.

<sup>5</sup> Sasha Sheppard and Deborah Charnock, "Against Internet Exceptionalism," *British Medical Journal* 324 (9 March, 2002): 556-57.

make snap decisions based on what they find. They typically use a search engine to find and review a number of different sites that target their specific concerns. And they frequently find or form sophisticated online and offline networks, which can help them deal with the task of interpreting complex medical information.”<sup>6</sup>

Ferguson argues that the medical community underestimates consumers’ ability to find the information they want and to discern high quality from low quality information. The consequence, he adds, will be that physicians who deny their patients’ ability to learn useful material from the Web will lose them. The bottom line, he asserts, is that “the 21st century will be the age of the Net-empowered medical end user and that the patient-driven online support networks of today will evolve into more robust and capable medical guidance systems that will allow end users to direct and control an ever growing portion of their own medical care.”<sup>7</sup>

### Conclusion

Ferguson’s comments contrast sharply with the concerns about quality that we found in medical journals. Our review of academic evaluation of health Web sites indicates that a stream of researchers has been voicing strong concerns about their quality of sites and what to do about it. Contrary to Ferguson, discussions of health Web site “quality” in medical journals do not take into consideration the ways in which people without medical backgrounds actually use the Web to find health information. That is a problem because an explanation may be clinically accurate but too complex or ambiguous to be useful to a lay person. Similarly, it may be clinically accurate but difficult to find. Alternatively, while physician-researchers may consider an explanation too simplistic to be useful, it may help a non-physician Web searcher who has been piecing together understandings of a disease from a number of different sites.

Ferguson seems optimistic about people’s abilities to find good health advice on the Web. His interpretation of the Pew findings lead him to believe that internet users are learning to rely on one another to search for material that they believe helps. Undoubtedly more research will need to be conducted to understand how people search the Web for health information, whether what they are happy with would pass muster with the medical profession, and how that relates to issues of Web site quality.

Questions about the quality of health Web sites, how people use health Web sites, and the relationship between quality and use, are crucial to raise in places where members of the public can discuss their importance and develop best practices. To what extent *do* these issues make it into medical and internet industry trade magazines, or to television, newspapers and magazines? This is one of the questions we address in the papers that follow.

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<sup>6</sup> Tom Ferguson, “From Patients to End Users,” *British Medical Journal* 324 (9 March, 2002): 555-56.

<sup>7</sup> Ibid.

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## **Discussions of Health Web sites in Health Care Trade Publications**

Nadia Sawicki<sup>♦</sup>

The research presented here is based on an analysis of 166 articles published from August 2002 through January 2003 in healthcare trade publications across five health industry groups. Among the most significant findings:

- **In discussing consumer health Web sites, these publications focus primarily on their benefits for physicians, pharmacists, managed care executives, or hospital executives.** The message presented to healthcare executives is that Web sites help build a customer base, develop organizational culture, and may ultimately save time or money if provision of some information and services is limited to the Web.
- **Most articles carry the assumption that providing health information via the Web can benefit patients by helping them participate in the medical decision-making process.** The publications neither examine the quality of existing health Web sites, nor express significant concern about inaccurate sites. Practitioner publications suggest that physicians and nurses should be able to direct their patients to “better” internet resources, thus steering them around “bad” sites.
- **Articles identifying Web sites by name, most commonly government or medical association sites, seem to imply that the sites are good without describing why.** The articles take for granted that healthcare professionals are adequately able to identify Web site quality.
- **The publications present no concept of a digital divide among healthcare professionals or members of the public.** The implication across articles is that the internet is available to and commonly used by all Americans, and that it is an excellent way for health professionals to share information promptly with an enormous audience.

### **Method**

Key healthcare trade publications were selected in each of five industry groups: medical practice (including both physicians and nurses), pharmacy, hospital administration, managed care, and general health industry. Two to four publications were selected in each group based on their relevance to and popularity among industry leaders. The publications were:

**Physicians:** *American Medical News, Family Practice Management, Modern Physician*

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**Nurses:** *Nursing, RN, American Journal of Nursing*  
**Pharmacy:** *Pharmaceutical Executive, Drug Topics*  
**Hospital Administration:** *Hospitals and Health Networks, AHA News, Modern Healthcare, Healthcare Executive*  
**Managed Care Organizations:** *Managed Care, Managed Healthcare Executive*  
**General Health Industry:** *Health Affairs, Health Forum Journal*

Using a variety of online databases (EBSCO, ABI Inform, Ovid) as well as the publications' own Web sites, each periodical was searched for articles including the terms "Web site" or "Web site" within a date range of August 1, 2002 through January 31, 2003. Sometimes only the topics could be searched online, and the actual articles had to be read in hard copy. Of the approximately 1,000 articles meeting these criteria, 166 articles specifically discussed sites targeted at consumers. The conclusions presented here are based on an analysis of these 166 articles.

### Part of a Business Strategy

Health industry publications did not devote much writing to the subject of consumer-targeted health information Web sites. Among all industry groups, health information Web sites were mentioned mostly in passing references. Only about 20 percent of the articles surveyed discussed health Web sites as a dominant theme, and only 5 percent of the articles focused primarily on issues of Web site quality or accuracy. These figures were consistent across industry groups.

**Table 5: Industry Publications: Depth of Discussion of Consumer-Targeted Health Sites**

	Passing Reference	Some Discussion	Dominant Theme
Practitioners: MDs	23	13	11
Practitioners: RNs	26	6	3
Hospital executives	33	5	10
Pharmacists	12	3	5
Managed Care Executives	2	0	3
General Health Professionals	6	4	1
Across All Publications	102 61.4%	31 18.6%	33 19.8%

The following comment in *Healthcare Executive* reflects the general theme of health industry trade publications. "In this wired age, it is a given that an organization that offers products and services to the public must be on the internet."<sup>8</sup> For professionals in all industry groups, but particularly managed care and hospital administration, organizational Web sites providing tailored information to consumers were understood to be simply good business practice.

According to the articles in publications targeted at hospital and pharmacy executives, the Web site is a crucial component of every organization's marketing strategy. It is a way to

<sup>8</sup> Mary Ann Lando, "Maximizing the Internet to Market to Consumers." *Healthcare Executive* 17:5 (Sept/Oct 2002): 8-12.

differentiate one hospital from the competition and should be viewed as the front door of the institution. By tying the Web site to the institutional persona, a hospital may be able to increase patient satisfaction scores, or even ultimately improve market share. However, many writers assert, few hospitals or pharmacies in fact use their Web sites to their full potential; only a Web site that is Web search optimized and targeted to consumer needs will be truly valuable to patients.

For managed care organizations, the incentive to develop a well-balanced Web site is much the same as for hospitals in terms of improving satisfaction and attracting new customers. However, articles aimed at managed care executives also present the possibility of institutional Web sites being used to reduce costs. Targeting the provision of a particular service (for example, providing claims forms, changing PCPs, or replacing lost cards) to the internet can save administrative costs and make the organization more efficient. The ultimate goal, according to some, is to transfer selected company functions entirely to the organizational Web site, thus eliminating an administrative level altogether.

The periodicals note that Web sites can likewise save time and money for physicians and other healthcare providers, in two ways. First, the sites can offer basic information such as office hours, payment policies, and directions that would otherwise have to be related by an administrator over the telephone. Secondly, physicians can tailor health information on their sites to their particular patient population, and have full control over the quality and content. Thus, patients are offered the opportunity to access reliable printed educational materials; one article emphasized that this may be particularly helpful in situations where the requested information is detailed or cumbersome to communicate verbally.

### **The Value of the Web**

Consistent across health industry trade publications was the idea that health information Web sites are primarily valuable to patients as tools for more active participation in healthcare decision-making. The publications agreed that in the modern era of patient-as-consumer, patients are going to greater lengths to seek out health information independently in an effort to direct their own treatment and make better decisions. Moreover, now that government health agencies and other health organizations view the internet as a valuable forum for sharing clinical, quality, and cost data, patients are easily able to access this vital information. The publications noted that compared to reading medical journals or paying for office visits, visiting health Web sites is a relatively simple and low-cost way of obtaining information that can have a significant impact on the course of treatment.

Increased patient engagement in healthcare decision-making was viewed by industry leaders as a valuable goal because it has the potential to improve both clinical quality and cost management. In terms of clinical outcomes, improved access to information about disorders and treatment options may help a patient better understand the options available to him than were he only to discuss them with his physician. Access to outcomes data and quality benchmarks allows patients to make more informed decisions about where to seek treatment. Likewise, Web sites that provide accurate information about healthcare costs offer patients the opportunity to learn about lower-cost options providing the same benefits. Articles in

industry publications discussed this possibility explicitly with respect to pharmaceuticals and generic alternatives, as well as managed care plans.

Across all industry groups, the internet was viewed by professionals as a good way to provide the public with up-to-date health information. Medical practice changes quickly, and it is far easier for an organization to update the clinical data on its Web site than to reprint thousands of brochures offering the same information. The value of the Web as a rapidly responding medium is echoed by the fact that practitioner publications link quality and accuracy with timeliness of information.

Furthermore, sixteen articles referred to health Web sites as a means of distributing health information and news updates in emergency situations. Web sites coordinated by the CDC, DHHS, and other organizations were publicized as valuable sources of up-to-the-minute information on smallpox vaccinations, post-traumatic stress disorder, and local *Listeria* outbreaks.

### The Sites Discussed

In making these generalizations about the Web’s value for consumers, the 166 articles were consistent in terms of the kinds of Web sites they discussed. The passing references were largely to well-known government or medical association Web sites. These were noted without qualification regarding accuracy or quality. Articles discussing health Web sites in greater detail typically focused on governmental and associational Web sites, or informational sites created by physician practices, hospitals, and managed care organizations.

**Table 6:** References to Web sites by Healthcare Trade Publications

Total References to Specific Web sites	210	100%
State and Federal Government	67	31.9%
Medical Associations, Disease- or Practice-Based Organizations	62	29.5%
Independent Sites for Disease-Specific Information	20	9.5%
Hospitals, Pharmaceutical Companies, MCOs	41	19.5%
WebMD, DrKoop, and Other Commercial Sites	9	4.2%
Other	11	5.2%

About 70 percent of all references to specific Web sites were to government, medical association, or disease-specific sites. State and Federal government sites included the Centers for Medicare and Medicaid Services, National Institute of Health, Food and Drug Administration, Centers for Disease Control, Department of Health and Human Services, and state Departments of Health. Medical associations and disease-based associations included the American Medical Association, state medical associations, American Cancer Society, National Kidney Foundation, Alzheimer’s Association, American Pain Society, National Council on Patient Information and Education, National Osteoporosis Foundation, American Association of Blood Banks, and United Network for Organ Sharing. Rarely did the publications mention independent sites not sponsored by well-known organizations. References to these sites were invariably transparent — that is, with no qualifications as to the quality or scope of information presented. Typically, the readers were advised to share these

Web addresses with their patients, or to direct their browsers to these sites “for more information.” Some news articles also identified revisions or additions to such sites as newsworthy, and presented these changes as dominant themes.

Many articles, particularly those in publications aimed at physicians and hospital administrators, discussed the increasing popularity of informational Web sites created by physician practices, hospitals, pharmacies, and managed care organizations. Sites were only referenced by name if they offered new information or an innovative feature not typically available – for example, Kaiser Permanente’s list of clinical guidelines, Blue Cross / Blue Shield’s Web site promoting the use of generic medications, or Virginia Hospital Center’s site offering information in both English and Spanish. For the most part, these types of Web sites were cited as useful for providing basic information to consumers, including provider lists, hours of operation, reimbursement forms, and basic contact information. Fewer articles mentioned the possibility of providing clinical or quality information via organizational Web sites.

Fewer than 5 percent of references were to commercial health information sites like WebMD or DrKoop. One mentioned DrWeil.com but none mentioned DrGreene.com or Drdrew.com. In the rare instances they were mentioned, these commercial sites were not typically cited in terms of their value as sources of information. A report in *American Medical News* on the recent Consumer WebWatch study included the list of Web sites BJ Fogg and his Stanford Researchers used for their research, including DrKoop, WebMD, and DrWeil.com. Apart from that list, commercial sites were mentioned only in explicit discussions of the internet industry’s business strategies. For example, an *American Medical News* article about commercial health information sites like DrKoop.com noted that “despite attracting a bevy of visitors to their sites and supplying high consumer demand for online medical information, these companies have failed to make money. The reason for this is simple: Their business model doesn’t work.”<sup>9</sup>

Four articles discussed the problem of independent Web sites providing misleading health information or prescribing medications irresponsibly. Such “rogue” sites were never mentioned by name. These omissions denied readers the benefit of learning which Web sites are unreliable, particularly in the absence of any other direct suggestions for how to identify quality.

### **The Idea of Web site Quality**

Very few articles in the health industry publications explicitly evaluated the quality of health information sites currently on the internet. Six noted inaccuracies of information found on the Web. In one of those, a physician estimated that “half the time” patients hand him information they print off the Web, “the information is bad.”<sup>10</sup>

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<sup>9</sup> Tyler Chin, “Information Driveway: Physicians Create Inexpensive Web Sites Offering Health Data to Patients.” *American Medical News*, 9 Sept., 2002.

<sup>10</sup> Tyler Chin, “Patients Think if Health Web Sites Are Pretty, They Must Be Smart.” *American Medical News*, 25 Nov., 2002.



Surprisingly, however, this fact was not presented as a major barrier for patients seeking health advice. The practitioner publications consistently suggested that physicians and nurses should be able to direct their patients to “better” internet resources, thus steering them around this obstacle, but did not elaborate on how practitioners should do this. Aside from this explicit recommendation, few authors justified their relative lack of concern over the quality of health Web sites. The overwhelming sense underlying many articles seemed to be that there are enough high-quality resources for patients on the internet that practitioners and industry leaders need not concern themselves with a few outliers. For the most part, these quality sites were transparently referenced organizational or government Web sites, whereas the outlier sites were typically described as independent or not professionally regulated.

Only two of 166 articles offered any qualification or evaluation of quality when directing readers to outside sites for more information, both in nursing publications. A news brief about the Nemours Foundation’s [www.kidshealth.org](http://www.kidshealth.org) specified that “most of the articles are reviewed by doctors and nurses.”<sup>11</sup> A similar brief about [www.vaccineinformation.org](http://www.vaccineinformation.org), published by the nonprofit Immunization Action Coalition, assured readers that “[a]ll clinical information is reviewed by the Centers for Disease Control and Prevention.”<sup>12</sup>

### Understanding Quality

Perhaps because the evaluation of healthcare Web sites was not a prominent subject among articles in industry publications, there was little explicit discussion of exactly what constitutes quality among such sites. Most articles presented the internet as a landscape of high-quality information Web sites, with but a limited number of unreliable outlier sites. Implicit interpretations of quality varied greatly across industry groups, but fell most commonly into the following four categories: clinical or statistical accuracy, usefulness to consumers, timeliness, and source of information. A few articles cited quality as linked to privacy, accreditation status, or design, but these characteristics were in the minority.

Among the practitioner publications, clinical accuracy was viewed as the highest indicator of Web site quality. Accuracy was gauged primarily by the degree to which the information presented reflected current medical opinion, and was linked to the source and timeliness of the information. The nursing publications recommended particular Web sites in part because their clinical accuracy had been verified by licensed practitioners, public health groups, or medical societies. A few pieces contrasted the practitioner focus on accuracy with a patients’ lack of awareness regarding reliability of information. One article cited a Consumer WebWatch study to show the disconnect between physician and patient interpretations of quality; the article emphasized that accuracy is more important than the design-type factors preferred by patients. However, articles focusing on individual physician or practice Web sites did stress the importance of usability, usefulness, and breadth of information as a means of attracting readers.

Publications targeted at pharmacists and pharmaceutical executives cited consumer usefulness as the characteristic most commonly associated with positively discussed Web sites. Many

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<sup>11</sup> Lisa Schiff, ed., “Professional Update: Hot Sites.” *RN* 65:8 (2002): 12-14.

<sup>12</sup> Lisa Schiff, ed., “Professional Update: Hot Sites.” *RN* 66:1 (2003): 14-16.

articles encouraged pharmaceutical professionals to provide online information and services most requested by consumers. These ranged from information on how to purchase discounted drugs to the opportunity to order pharmaceuticals over the internet. An article in *Pharmaceutical Executive* suggested that, in addition to publishing information sought by patients, a good pharmacy Web site should be optimized for discovery by search engines.

Articles within the pharmaceutical industry also stressed the importance of clinical and statistical accuracy, with a particular emphasis on disclosure of research methods and disclaimers about the proper interpretation of data. This focus on accuracy seemed to stem in part from unclear FDA regulations regarding online publication of pharmaceutical information and sales. Pharmaceutical professionals were warned of “rogue” pharmacy sites facing FDA crackdowns, and encouraged to take the safe route by presenting clinical information as objectively as possible. In addition to informal oversight by the FDA and the American pharmaceutical community, one article noted that online pharmacy operations that have undergone a rigorous vetting process by the National Association of Boards of Pharmacy are eligible for the organization’s VIPPS (Verified Internet Pharmacy Practice Site) seal of approval.

Publications targeted at both hospital and managed care executives focused much more strongly on consumer usefulness than accuracy as an indicator of a high-quality Web site. Many articles were explicit in arguing that a health Web site is only valuable if it presents information consumers are searching for. For the most part, the information identified as key by managed care organization publications was administrative rather than focused on providing medical health information. The pieces suggested that patients get great value from sites that list benefits options, physician contact information, and downloadable claim forms. Hospital publications also identified administrative information as valuable to consumers, but likewise acknowledged the importance of clinical and quality information for patients visiting the Web. Articles aimed at hospital executives stressed that today’s patients demand detailed information on quality benchmarks and clinical pathways, suggesting that a valuable hospital Web site is one which provides such information.

### **Discussions of the Audience**

There was very little discussion of the audience for Web sites in healthcare industry publications. None of the articles surveyed included any detailed discussion of the composition of the audience for health care sites. In fact, most articles were based on the assumption that the majority of Americans use the internet to find health information, regardless of age, ethnicity, location, or wealth.

While there were no explicit references to the composition of the audience for healthcare Web sites, a number of pieces referred to the growing popularity of the internet among teenagers and young parents. They suggested that teenagers in particular might be more willing to seek information on the internet than from their family doctor. Four articles mentioned the value of bilingual Web sites for non-native English speakers. Six articles also cited the internet as a particularly useful resource for patients with rare disorders, patients in rural areas, or uninsured patients with no other access to health information.

As if to justify their focus on health information Web sites, many articles introduced compelling statistics about the popularity of the internet in today's society. For example: "A Harris Interactive study demonstrated that 75 percent of adults who use the internet -- amounting to about 100 million consumers -- seek health care information."<sup>13</sup> Across all industry publications, such statistics served to prove that most Americans look for health information on the internet, and that the number of potential audience members is growing quickly. Even where statistics were not presented, articles regarding health information Web sites took for granted the fact that the internet is one of the premier sources of information among healthcare consumers. Only three articles mentioned the digital divide; all suggested that health Web sites were nonetheless beneficial because the computer illiterate could access these Web sites at their local libraries or physicians' offices.

The number of Americans turning to the Web for health information was presented as constantly on the rise, occasionally accompanied by dramatic quotes asserting that "[t]he physicians are almost becoming marginalized. The consumer now is going straight to the internet."<sup>14</sup> Some articles linked this phenomenon with the increased cost of health care, arguing that patients may prefer to get free advice from the Web than visit a physician, a costly option now viewed as a last resort.

While most publications acknowledge that patients are increasingly visiting their favorite health Web sites before visiting their doctors, few viewed this fact as fatalistically as the physician quoted above. A *Health Affairs* article cited a recent survey to conclude that "in general, consumers have used online health information to supplement rather than replace information from other sources, including interaction with their physicians during office visits."<sup>15</sup> Indeed, many practitioner publications viewed the physician or nurse as having a significant role to play in helping patients find and interpret health information on the Web. Practitioners are no longer surprised when patients walk into their offices, Web printouts in hand, and typically expect to spend a few minutes during appointments reviewing such material and clearing up any misconceptions. However, a few articles acknowledged that, despite the disconnect between physician and patient interpretations of quality, today's patients are better at identifying accurate and reliable sources than they used to be.

The articles suggested that patients most commonly use health Web sites as starting points for research about a particular disorder, or as a means of starting a conversation with their physicians. Patients facing choices of providers or treatment locations may use the internet to find quality reporting data on a particular hospital or physician. But rather than using one "trusted" site, articles cite evidence of the fact that patients research health issues across many Web sites, often using search engines to find information targeted to their particular needs. Indeed, many publications suggest that patients' use of health Web sites as a source of information outside the physician's office may be evidence of an increasing trend towards consumerism in health care. The periodicals presented no discussion, however, of the different capabilities that people have in searching the Web, or of the general difference in sophistication of patients when it comes to finding information on the internet.

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<sup>13</sup> Lynn Roberts, Erica Schmidt, "The Search Engine that Could." *Pharmaceutical Executive*, 1 Aug. 2002.

<sup>14</sup> Damon Adams, "Preserver of Past Makes Plans for the Future." *American Medical News*, 12 Aug. 2002.

<sup>15</sup> Tracy E. Miller, Arthur R. Derse, "Between Strangers: The Practice of Medicine Online." *Health Affairs* 21:4 (2002): 168-179

## **Conclusion**

The information collected in six months of articles across a large sample of healthcare trade publications suggests that medical professionals and health care executives mainly discuss health information Web sites from a strategic standpoint. Hospitals, managed care organizations, pharmacies, and practitioners view the internet as a way to gain market share, draw new customers, and increase patient satisfaction scores.

A second consistent theme across health industry trade publications was the idea that health information Web sites are valuable to patients as tools for more active participation in healthcare decision-making. Yet there was virtually no engagement in these periodicals with the question of what strategies patients are using to search the Web, and whether the information they find does in fact contribute positively to their health care experience. More active discussion within these publications about the meaning of Web site quality, how to best execute it, and how to help patients become more critical consumers of Web-based health information would likely go a long way toward placing the topic on the agenda of leaders across the medical system.

## Discussions of Health Web sites In U.S. Newspapers

Lela Jacobsohn<sup>♦</sup>

This paper examines how five major daily U.S. newspapers discussed health Web sites from August 2002 through January 2003. It inquires into the papers' reporting about what is "good" and "bad" about health information on the internet as well as how they understand the audience for health-related sites. In doing so, this paper explores the manner in which newspapers comment directly or indirectly on the quality, usefulness, and importance of health Web sites. Here are key findings:

- **Web health sites were predominantly a "source" for journalists, a place for getting quotes that substituted for, or added to, personal interviews and other research.**
- **The papers published relatively little explicit commentary on the quality, credibility, or overall state of health Web sites.** The idea of Web literacy never came up, and Web assurance or insignia programs such as Hi-Ethics and Health on the Net (HON) were scarcely mentioned.
- **Rather, coverage of health Web sites suggested to readers that in general the Web can serve for them as an unproblematic, directly accessible extension of the medical industry and national health organizations.**
- **A relatively small number of articles noted the possibility for negative effects of health Web sites due to postings of potentially harmful information or services and "obstacles" to helpful information such as overly "protective" search filters for youth.**

### Method

We chose five of the top ten national newspapers by daily circulation, based on rankings by the Audit Bureau of Circulations, ABC FAS-FAX. The newspapers included in this research are: *The Wall Street Journal*, *The New York Times*, *The Washington Post*, *New York Daily News*, and the *Houston Chronicle*. Using the Lexis-Nexis and Dow Jones Interactive databases, we conducted a search of the content between August 1, 2002 and January 31, 2003, in each of the five newspapers with the term "health! and (Web or Web site)" to collect relevant articles. Results of these searches were analyzed qualitatively. Each article retrieved by the search process was carefully reviewed and examined, first for relevance, and then for substantive content. Articles determined irrelevant were no longer included in the study.<sup>16</sup>

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<sup>16</sup> An example of an irrelevant article: *The New York Times* Bestseller list in which one book concerns some aspect of the Internet and another book focuses on health such as a diet book. This article is retrieved but the

## The Sites

During the six-month period, the newspapers published a total of 496 articles that mentioned health Web sites or Web sites posting health information. Table 7 presents the number of articles by newspaper. Despite the differences in occurrence, the treatment of health Web sites did not differ substantially across the papers. This analysis will consequently treat them as a group.

**Table 7:** Number of Articles by Newspaper

Newspapers	Number of Relevant Articles Retrieved <sup>17</sup>
<i>The Houston Chronicle</i>	91
<i>The New York Daily News</i>	44
<i>The New York Times</i>	103
<i>The Wall Street Journal</i>	76
<i>The Washington Post</i>	182

A primary finding of this research relates to the nature of the newspapers' use of health Web sites both as credible sources and as newsworthy topics in and of themselves. Journalists treated Web site content as news in all five newspapers. Frequent announcements of new health Web sites appeared as the central topics of articles. In addition, the papers published several letters to the editors, most often from health experts, that clarified and added to articles on health Web sites. They corrected mistakes and provided more direct Web routes or addresses to information referred to in the article.

Articles also regularly invited readers to find more information online regarding a health topic, to respond online to the topic, or to participate in an online health discussion regarding the topic. For example, in an article announcing a special HIV testing "Get Tested!" week, the reporter directed readers to specific Web sites for additional information and lists of places to get tested.<sup>18</sup> Similarly, in published letters to the editor, leaders of various national health organizations (i.e. National Osteoporosis Foundation, Ovarian Cancer National Alliance, and National Asthma Education and Prevention Program) referred readers to appropriate Web sites for further information on the relevant health issue.<sup>19</sup> Another article relayed a call for participants to enroll in a breast cancer research study that gives the Web address as the primary way to contact the study's organizers regarding enrollment. In this way, the reporters present Web sites as a continuation of the information delivery process that originates within "their own" medium of the newspaper. Indeed, in all of the newspapers sampled journalists treated Web site content as news.

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Web topic and the health topic are not related. Other examples include articles with short bits about different news items in which one bit discusses a Web topic and another discusses a health topic.

<sup>17</sup> Based on electronic search followed by assessment of relevance.

<sup>18</sup> Jared McCallister. "Holiday Concert, Island-Style." *New York Daily News*, 8 Dec. 2002: 4.

<sup>19</sup> "Interactions." *The Washington Post*, 14 Jan. 2003: F2.

Journalists consistently considered Web content a reliable and credible source; they source it the same way they would a personal quotation. Implicitly, the message was that Web sites are a reliable representation of views. In an article on the Pharmacia Corporation's drug distribution to developing countries, the writer uses the company Web site as the source rather than any employee or board member; he reports that Pharmacia does not sell HIV treatments and bases this information on a product list posted on their Web site. It is not clear here or in similar instances whether reporters have checked, or merely assume, the accuracy of information posted on the Web.

Across the newspapers there was rarely an evaluation of the reliability or credibility of news content. The newspapers did not take on the responsibility of educating readers about how to evaluate the health Web sites featured or referenced in their articles. There was little explicit discussion of Web site quality or credibility. Also, discussion of best practices for Web sites was rare, and Web insignia programs such as Hi-Ethics received scarce attention.

A small number of articles (six) reported "best" Web sites for health care or that include health related information. Only one of these articles addressed healthcare sites overall. This was an article in *The Houston Chronicle* publicizing [www.memorialhermann.org](http://www.memorialhermann.org) as recipient of a leadership award from The Forum for Healthcare Strategists and winner of the best site serving consumers and medical professionals, as deemed by The Forum. The reporter described the Web site but did not include specific criteria for health Web site quality or credibility.

What newspaper coverage did explore in some detail is the role that political agendas can play in shaping the particular content of health Web sites. Specifically, eight articles suggested that the content of national health Web sites such as that of the Centers for Disease Control and Prevention (CDC) had changed to reflect the federal administration's conservative views. Reporters convey that such changes to national health Web sites — to denounce abortion or remove any mention of it; remove recommendations for condom use as an effective method of sexually transmitted disease and pregnancy prevention; and remove content legitimizing the homosexual lifestyle — appear to be politically motivated by the Bush administration. In *The New York Times*, a reporter explained:

The National Cancer Institute, which used to say on its Web site that the best studies showed 'no association between abortion and breast cancer,' now says the evidence is inconclusive. A Web page of the Centers for Disease Control and Prevention used to say studies showed that education about condom use did not lead to earlier or increased sexual activity. That statement, which contradicts the view of 'abstinence only' advocates, is omitted from a revised version of the page. Critics say those changes, far below the political radar screen, illustrate how the Bush administration can satisfy conservative constituents with relatively little exposure to the kind of attack that legislative proposal of a White House statement would invite.<sup>20</sup>

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<sup>20</sup> Adam Clymer. "U.S. Revises Sex Information, and a Fight Goes On." *The New York Times*, 26 Dec. 2002: A17.

Along the same lines, a staff writer at *The Washington Post* noted:

Others complain that HHS [Health and Human Services] is driven more by conservative ideology than science. They noted that the CDC has removed condom information sheets and “Programs That Work” sex education summaries from its Web site. ‘The research didn’t become less valid; the data wasn’t outdated,’ said James Wagoner, president of Advocates for Youth, which offers AIDS services to young people in the U.S. and abroad. ‘What occurred was clearly a political move.’<sup>21</sup>

The overall message in the newspapers was that health information on the Web has become a political backdoor because the Web is powerful and what it says regarding health has a national impact and import. Multiple articles about this removal of a fact sheet on condoms within the CDC site were present in the sample. In a subset of these pieces, editorial writers took up the issue. They criticized the changes and directed readers to other Web sites which offer content that affirms research showing that condoms greatly reduce the risk of HIV and other sexual transmitted diseases.

On a note more positive toward the Web, more than 10 newspaper articles suggested or implied that health Web sites can be used as a way to make government more user-friendly. For example, in one article the reporter described how New York City Mayor Mike Bloomberg created a new Web site to post health and other city statistics so that New Yorkers would be able to search and get data about their own neighborhoods. Finally, with few exceptions, newspaper coverage generally indicates that government-based health Web sites, such as those of the CDC, the National Institutes of Health, the HHS, and the Food and Drug Administration, are helpful and useful sources of health information.

### **The Audience**

Newspapers rarely discussed users of the Web in detail. There was little reference to demographic or other characteristics that differentiate people in their access and ability to use the internet as a health information resource. Journalists did not refer to the notion of digital divide either in terms of access to the internet or in terms of skill and capability in using and navigating the internet thereby negating the existence of a digital divide.

To the contrary, in articles that mentioned health sites newspapers suggested that all people have ready and easy access to information online because all people have ready and easy access to the internet. Articles implied that if health information is published on the Web, it is automatically available to the entire public (at least in the United States) of all ages and socioeconomic status (and literacy levels). Articles consistently reported the existence of

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<sup>21</sup> *Washington Post* staff writer. “Bush Policies Hurt AIDS Prevention, Groups Say; Administration Accused of Disinformation on Condom Use, Harassment Audits of Education Programs.” *The Washington Post*, 1 Oct. 2002: A6.



public health information on Web sites (i.e. warnings of the smallpox vaccine side effects, announcements of free HIV testing, and neighborhood health statistics on such things as disease incidence and mortality rates) without comments that segments of the American public do not have access, or feel comfortable with, the technology. Articles also implied that if information is on the internet, many people are seeing it.

### Audience Uses of the Web

Seven articles presented reports of survey or study results on Web usage by audiences for health care information. These pieces reinforced the idea that the internet serves as an important source of information about health care for Americans. One article describes findings of a Pew Internet & American Life Project study that at least 80 percent of internet users expect to find health care information on the Web. Additionally, four articles (one each from four of the five newspapers sampled) reported the results of a Kaiser Family Foundation study that internet “protection” for young people in the form of filtering on searches may also be blocking important health information.

The newspaper discourse implied that the online information is an important and expected health resource for the majority of the population, but that for subsets of the population (particularly youth) this resource may be difficult or even inefficient to use. The implication, moreover, was that such difficulty is a problem to which attention should be given. Hence, overall, newspaper articles underscored a belief in people’s right to easy, accurate, and full accounts of all of the health information available today. Ways to arrive at this goal did not receive systematic attention, however.

### Web sites’ Effects on Audiences

Newspaper coverage sporadically implied positive effects of health sites on audiences. For example, newspaper articles raised the topic of posting restaurant inspections on the Web for customer review. There was no explicit claim of positive effects, but the articles left the strong impression that such posting on the Web is a public benefit.<sup>22</sup> Similar were newspaper accounts of the National Council on the Aging’s release of a free Web-based service that helps older people connect to public and private prescription drug discount programs. *The New York Times* writer included a quote from the administrator of the Centers for Medicare and Medicaid Services who called the Web site “another great tool in helping seniors become more educated consumers,”<sup>23</sup> The *Washington Post* writer affirmed that “this new tool could be a valuable reason to go online.”<sup>24</sup> These and other articles on the topic provided the Web address ([www.Benefitscheckup.org](http://www.Benefitscheckup.org)) to the reader and described the site’s strongest attributes. Though far less frequent than positive comments, the newspapers in our sample did offer a negative side of the Web. For example, three articles in the sample of newspapers addressed a subset of Web sites referred to as “pro-ana” sites, which promote anorexia and anorexic

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<sup>22</sup> *Houston Chronicle* staff writer. “Houston Restaurant Inspection Reports Stuck in Paper Age.” 12 Jan. 2003: A8; and Allan Turner, “Lean Times Stretching Restaurant Inspectors.” *Houston Chronicle*, 12 Jan. 2003: A1.

<sup>23</sup> Vivian Marino (compiled by). “Drug Plans Via the Web.” *The New York Times*, 26 Jan. 2003: A10.

<sup>24</sup> Tom Graham. “Want a Price Break on Drugs? Click Here.” *The Washington Post*, 28 Jan. 2003: F3.

practices. The sites provide instructions on how to maintain one's anorexia and "secrets of the trade" to deal with those in one's life trying to remedy and correct the eating disorder. The articles contended that these sites have negative effects on the extensive efforts of schools, health organizations, and counselors to prevent and treat eating disorders, including anorexia, among young people. On these and other topics, newspapers suggested that Web sites can also derail positive health endeavors and activities.

### Health Industry Uses of the Web

Newspapers addressed how not only the audience but also the health industry uses the Web. Typically, the theme was that the industry's activities benefited the public. We noted, for example, considerable coverage of ways the Web can be used for alerts to public health threats in the form of terrorist attacks, relevant during this period. Newspaper discourse implies that the use of Web is effective for alerts to major and minor public health threats: for example, one newspaper article reported on national communication on smallpox and the smallpox vaccine in relation to the potential of a terrorist attack using biological weapons to spread smallpox. Specifically, the reporters cite the CDC Web site's warnings regarding the potential serious side effects of the vaccine and instructions for behavior in the days after inoculation.<sup>25</sup>

An article on potential use of chemical or biological weapons in the U.S. offers another illustrative example of how the Web is viewed as an effective vehicle for communicating about national public health threats<sup>26</sup>. In this article, the reporter describes New York State plans for the Physicians Intranet, the first statewide alert system via a Web site, to inform all practicing physicians in the state about biological and chemical terrorist attacks, or the serious threat of them, within minutes of their discovery. The article does not evaluate the usefulness of the system or make comment about the uses of the Web, but evident in the coverage is the absence of quoted critique by relevant subject matter experts, thus suggesting that the Web is an efficient and helpful method for the state to communicate about urgent life or death issues with a large critical audience such as doctors.

Overall, newspaper coverage conveyed that the Web is viewed as a useful and reliable way to communicate to the public on important matters such as national public health. If there were a crisis, i.e. chemical weapons used on the U.S. in time of war, national health organizations would consider it beneficial and reliable to post warnings, alerts, and instructions on their Web sites, according to newspaper coverage. Moreover, newspaper articles imply that the internet is a sufficient way of communicating to U.S. citizens about severe public health threats. Hence, again, we see no reference to the digital divide and a treatment of the internet appropriate for a newspaper-reading audience.

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<sup>25</sup> Owen Mortiz and Helen Kennedy. "1<sup>st</sup> Smallpox Shots Shipped Out." *New York Daily News*, 22 Jan. 2003: 16.

<sup>26</sup> Lydia Polgreen. "Threats and responses: New York State; Plan to alert doctors in case of terror attacks." *New York Times*, 19 Dec. 2002: A19.

## The Relationship of Web sites to the Medical Industry

Newspaper discourse presents health Web sites as having the positive ability to communicate treatment standards and compare hospital performance as well as being conduits of health-related commercial business. With respect to the latter, articles reviewed or reported on exercise videos, health books, and fitness tools such as home exercise equipment, providing the price and the Web site. Though seemingly obvious, this practice of including only a Web address as a way to reach a business and purchase a product underscores a societal dependence on and custom of using the Web for commercial contact and transactions. It thereby also legitimizes the Web as a basic element of the fitness and nutrition economy.

As for comparing treatment standards, newspaper articles presented the Web as a critical method to check on the quality and consistency of hospital and health care services. Reporters featured Web site creators who had fashioned internet tools to encourage disclosure in business by making previously unobtainable health information and guidelines public.

For example, one article explained that Kaiser Permanente is publishing on its Web site guidelines for doctors for the treatment of hundreds of diseases. The coverage suggested that the introduction of one corporation's standards for treatments would yield two benefits to the health care consumer: it would provide a resource for patients seeking information on standards of care, and it would encourage other organizations to create such standards of practice and make them public via the Web.<sup>27</sup>

Additionally, newspaper coverage described how Web sites are used to disclose financial information of hospitals and health services organizations. On top of the medical treatment standards that Kaiser Permanente is providing online, newspaper articles tell the reader that there will also be publication of information about the way it pays doctors, implying that this is indeed a good thing for the audience. Therefore, newspaper discourse of the health industry's uses of the Web generally emphasizes the positive effect it can have for the consumer, citizen, and Web user.

## Conclusion

Newspaper discourse reveals health Web sites as a new "source for journalists, most generally used as an equivalent for, or addition to, personal interviews and other research." However, newspaper coverage of health sites offers minimal explicit commentary on their quality or credibility. Rather, reporters' treatment of health Web sites indicates to readers that the Web can serve as a generally accurate, easily reached annex to the medical industry as well as national health organizations. Newspaper coverage implies that, in most cases, the Web provides health-information-seekers a positive service and only infrequently notes the potential for negative effects on audiences due to sites and search filters providing incomplete, incorrect or possibly harmful advice.

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<sup>27</sup> Milt Freudenheim. "Large H.M.O. to make Treatment Guidelines Public." *New York Times*, 24 Jan. 2003: C3.

The use of the Web as a source for reporters marks a change in the texture and content of newspapers when it comes to health reporting. With this change, clear communication to the reader about the process and/or criteria used by the reporter to choose particular Web sites for citation in an article becomes essential. Such publication by journalists of their selection criteria for health Web sites would mark an important step toward encouraging public sharing of ways to critically think about health on the Web.

## Discussions of Health Web sites In Popular Magazines

Alyssa Hersh<sup>♦</sup>

We examined a six-month sample of 14 popular magazines to determine the extent and nature of popular discourse on health Web sites.

- **Of 123 articles that mentioned health Web sites, 81 percent had only fleeting references to them, and only 5 (4 percent) had health Web sites as their focus.**
- **Most often, Web sites were listed as sources of additional information on the topic of the article, implying that the magazines are searching the Web, evaluating the results, and are presenting the “best” sites to their readers.**
- **Although some articles recognized differential abilities of Web users, in general the magazines assumed that most people have access to the Web and know how use it to search for health information.**
- **Few articles discussed the quality of such Web sites or gave consumers any general guidelines as to how to approach health on the Web.**

### Method

Based on AdAge.com's magazine circulation list for the first six months of 2002<sup>28</sup> and local library availability, we selected a sample of popular magazines that included four categories: news magazines, health magazines, women's magazines, and men's magazines. A total of 14 magazines was selected (see Table 8 below), including: the top three newsweeklies (*Time*, *Newsweek*, *U.S. News & World Report*); the top three women's magazines (*Better Homes & Gardens*, *Good Housekeeping*, *Family Circle*); the leading men's and women's fashion magazines (*Cosmopolitan*, *Gentlemen's Quarterly*); the leading senior citizens' magazine (AARP's *Modern Maturity*); and five leading health magazines (*Prevention*, *Shape*, *Men's Health*, *Self*, *Fitness*).

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<sup>28</sup> AdAge.com. "First Half 2002 magazine circulation". Retrieved 16 Jan. 2003 from the World Wide Web: <http://www.adage.com/page.cms?pageId=943>.

**Table 8.** Magazines used in the study. Circulation and rank are based on AdAge.com's paid circulation list for the six months ending June 30, 2002.

Magazine Title	Paid Circulation	Rank	Frequency
1. <i>Modern Maturity</i>	17,538,189	1	Bimonthly
2. <i>Better Homes &amp; Gardens</i>	7,602,575	4	Monthly
3. <i>Good Housekeeping</i>	4,708,964	6	Monthly
4. <i>Family Circle</i>	4,671,052	7	17 issues yearly
5. <i>Time</i>	4,114,137	9	Weekly
6. <i>Newsweek</i>	3,248,097	18	Weekly
7. <i>Prevention</i>	3,131,814	20	Monthly
8. <i>Cosmopolitan</i>	2,963,351	21	Monthly
9. <i>U.S. News &amp; World Report</i>	2,018,621	38	Weekly
10. <i>Shape</i>	1,692,690	43	Monthly
11. <i>Men's Health</i>	1,659,594	46	10 issues yearly
12. <i>Self</i>	1,284,604	65	Monthly
13. <i>Fitness</i>	1,197,638	73	Monthly
14. <i>GQ (Gentlemen's Quarterly)</i>	775,084	123	Monthly

We surveyed issues from August 2002 through January 2003.<sup>29</sup> The three newsweeklies (*Time*, *Newsweek*, *U.S. News & World Report*) were available online and searched electronically using the following search terms: health! and (Web or Web site or www). This search yielded 100 articles, of which 39 were determined to be relevant. Articles were deemed relevant if a health-related Web site was mentioned for assumed informational purposes; any sales-oriented references (i.e., where to buy a specific product) were excluded.

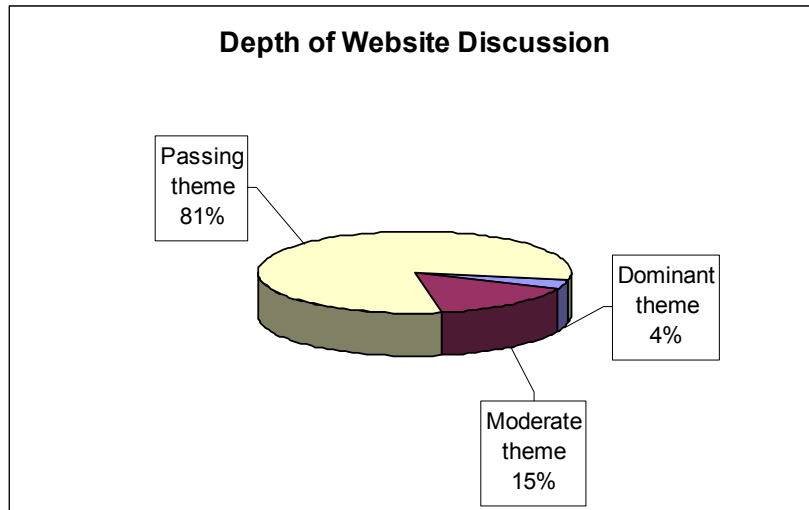
In all other instances, hard copies of the magazines were searched for articles containing the same search terms. Eighty-four articles were collected from the 11 hard-copy magazines, yielding a total of 123 relevant articles for examination. In both electronic and hard-copy sources, the word "health" did not necessarily appear explicitly in the article text; it also could have been located in the electronic indexing terms or as a printed section heading. (Dow Jones Interactive tags articles about diseases, medicine, and other "health" topics with that "keyword" even if the word doesn't show up in the article.) That allowed us potentially to include articles about diabetes Web sites that didn't have the word "health" in them but, of course, are about health.

We analyzed the articles qualitatively. Data collection and analysis focused on six broad categories of information: the Web sites referenced, the audience, the audience's knowledge of the Web, the Web sites' effects on the audience, the health industry's use of the Web, and the effects of Web sites on the medical community.

<sup>29</sup> The November issue of *Fitness* magazine was unavailable for inspection. In this case, the February 2003 issue was substituted.

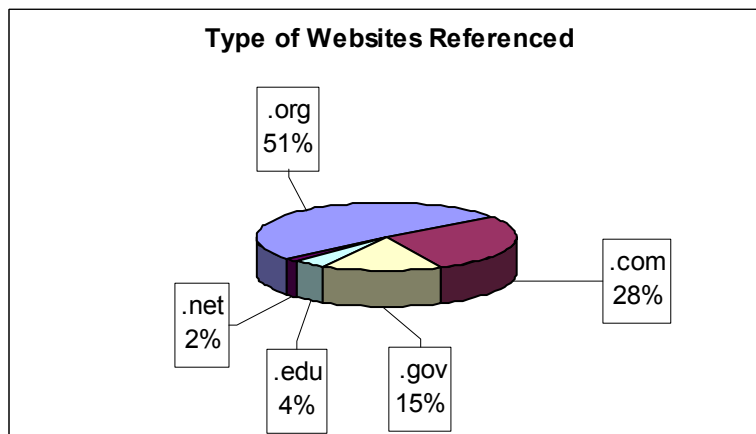
### The Web sites

In most cases, health Web sites were only a passing theme in these articles; of the 123 articles examined, 81 percent included only fleeting references to health Web sites (see Figure 1, below). Through careful analysis of what was said about these Web sites, and perhaps more importantly, of what was *not* said, several important trends emerged concerning health Web sites, their audience, the medical community, and the interactions between these entities.



**Figure 1. Depth of Web site Discussion.** Health Web sites were seldom more than a passing theme in the popular magazines.

Within the 123 articles, specific URLs for sites unrelated to the magazines were given 168 times. Slightly more than half of these URLs were **dot-org** sites; **dot-com** sites represented over one-quarter of all references, and the remaining URLs fell within the **dot-gov**, **dot-net**, and **dot-edu** categories (see Figure 2, below).



**Figure 3. Types of Web sites Referenced.** Over half of all references were made to dot-org Web sites. Surprisingly, .com sites were referenced almost twice as often as dot-gov sites.

Although the dot-org suffix may seem authoritative, there are actually no requirements for using the dot-org domain name. According to the Internet Corporation for Assigned Names and Numbers (“ICANN”), the global, non-profit consensus organization recognized by the U.S. Department of Commerce for administrating the internet name and address system, dot-org is the fifth-largest top level domain, with over two million registrations within the domain worldwide. Although dot-org was originally intended to serve organizations that were not commercial entities, educational institutions, network providers, or governmental agencies, registration in dot-org is now open and unrestricted.<sup>30</sup>

Therefore, dot-org may be a false indicator of authority. Magazine articles did not raise the issue, or seem to be aware of it. Within this sample, most dot-org Web sites belonged to nationally recognized organizations such as the American Cancer Society, the American Medical Association, and the Arthritis Foundation. However, in some instances, the dot-org sites belonged to associations of questionable nature, or in some cases, were simply not intended for consumers. This only became apparent after logging on to the suggested Web site.

In fact, the overwhelming number of site mentions did not aim to develop critical understanding of the health care on the Web. For example, one article in *Family Circle*<sup>31</sup> referred uncritically to [www.feingold.org](http://www.feingold.org), the Web site of the Feingold Association, which describes itself as a non-profit organization dedicated to helping children and adults apply proven dietary techniques for Attention Deficit Hyperactivity Disorder, learning and health. However, only minimal health information is provided on the site; the full “program materials” are only available after paying a \$69 fee — a fact *Family Circle* did not mention. Whether or not the program is legitimate, this is hardly the most useful site for consumers.

Similarly, an article on Viagra in *Time*<sup>32</sup> indicates that more information on sexual dysfunction can be obtained from [www.smsna.org](http://www.smsna.org), but does not say whose Web site it is. Upon visiting the site, it becomes evident that this is the homepage of the Sexual Medicine Society of North America, Inc. and is not intended for consumers at all. Although there are some journal articles accessible to the public, the primary function of this medical society’s Web site is to disseminate information about conferences and current research to member practitioners. Again, it becomes apparent that relying on magazines to choose Web sites for their readers may be problematic.

These occasional transgressions make it obvious that the magazines seldom discuss what exactly makes a “good” Web site. However, these magazines do a slightly better job at pointing out the subtle and not-so-subtle indicators that a Web site may not be trustworthy. The most obvious indicator falls within the article text itself; when a Web site is deemed

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<sup>30</sup> Internet Corporation for Assigned Names and Numbers: Retrieved 1 April 2003 from the World Wide Web: <http://www.internic.net/faqs/org-transition.html>.

<sup>31</sup> C. Brophy, “Medical Q&A.” *Family Circle*, 6 Aug. 2002: 86.

<sup>32</sup> C. Gorman, “Viagra Turns 5.” *Time*, 20 Jan. 2003: 146.



“bad” by the magazine, neither the exact site name nor its URL is given, perhaps as an immediate means of discouraging readers from visiting the site. In many instances, a few comments about *why* the Web site is bad, although often vague, alert the readers to key quality indicators.

These statements range from describing a “hard-to-read-much-less-believe Web site”<sup>33</sup> to alerting consumers to watch out for “claims so spectacular that they fly in the face of common sense,”<sup>34</sup> which is simultaneously referring to both Web sites and advertisements for dietary supplements. Fleeting messages impart to the consumer that Web sites may not always give accurate information,<sup>35</sup> or that they may present information in a biased manner<sup>36</sup>. The fact that such discussions exist, as minimal as they may be, indicate that the Web will never be viewed as a completely trustworthy place.

Drawing on these criticisms, we can infer that “good” Web sites should be clearly organized, well-written, and provide complete, accurate, unbiased information. How to decide whether a site fits that characterization is rarely discussed. An article in *U.S. News & World Report* is unusual in that it suggests a way to do it. Recommending a Web site that provides hospital report cards, the magazine lauds the site for being “easy to follow and [providing] background and context for the findings.”<sup>37</sup>

Eighteen of the 123 articles in the periodicals emphasized the Web’s utility for scrutinizing physicians, hospitals, and insurance providers. Writers pointed out that hospital report cards<sup>38</sup> and sites where you can investigate your provider’s credentials are beginning to appear on the Web, giving consumers more control over the quality of their care. Such information, previously hard to obtain or unavailable to the public, provides an additional watchful eye over the standards of the medical institution. Articles also pointed out that insurance companies, pharmaceutical companies, research institutions – even some physicians — have Web sites, providing an additional means for these organizations to extend their services to the audience. The articles noted personalized or interactive sites as attractive resources for the healthcare consumer. However, the magazines did not go into detail about these sites or tell their readers how to differentiate between the good and bad among them.

The magazines described government Web sites described variously as being sources of unbiased sources of information<sup>39</sup> and also subject to political influence. While [www.fda.gov](http://www.fda.gov) was listed as a source for unbiased knowledge on breast implants, the Centers for Disease Control and Prevention’s Web site was criticized for removing information pertaining to reproductive health<sup>40</sup>. Information disproving the supposed link between abortion and breast cancer was secretly removed from this site, as was information on condom-based sexually

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<sup>33</sup> D. Lagesse, “Swallowing Air.” *U.S. News & World Report*, 26 Aug. 2002: 72.

<sup>34</sup> T. Schryver, “The Spotlight on Coral Calcium.” *Prevention*, Jan. 2003: 65-66.

<sup>35</sup> *ibid.*

<sup>36</sup> L.C. Cool, “Saving Sophie.” *Self*, Dec. 2002: 152, 154-155, 178-179.

<sup>37</sup> A. Comarow, “Giving Hospitals Public Report Cards.” *U.S. News & World Report*, 23 Dec. 2002: 49.

<sup>38</sup> *ibid.*

<sup>39</sup> K. Springen, “New Year, New Breasts?” *Newsweek*, 13 Jan. 2003: 65.

<sup>40</sup> K. Tumulty, “Under the Radar: Thirty Years After Roe v. Wade.” *Time*, 27 Jan. 2003: 38.

transmitted disease interventions<sup>41</sup>. These discrepancies only further emphasize the difficulties in evaluating a constantly changing medium; when there are no records of changes made to Web sites, such dangerous “omissions” can be a detriment to public health.

## The Audience

Although the magazines in the sample have widely varying audiences, at least one article in each mentioned a health Web site during the six months examined. In general, it was clearly assumed, and even expected, that most readers access the internet to look for health information. None of the publications mentioned a digital divide based on race or socioeconomic status. A close look at the different contexts in which health Web sites appeared, however, did reveal subtle age-related differences. In most instances, *Time* only provided URLs as sources of additional information for its readers. However, when discussing a health issue affecting senior citizens, *Time* also listed a toll-free number to use for contacting the recommended organization. Similarly, *Modern Maturity*, the AARP’s magazine with an audience of senior citizens, regularly supplied phone numbers in addition to Web sites for its readers. The implication seems to be an awareness that some seniors might not know how or want to go on the Web.

Despite the general expectation that most people go to the Web for health information, interpretations of the audience’s competence in doing so varied widely in the magazines. In several instances, references were made to the potential gullible and vulnerable nature of Web users. A *Prevention* article on dietary supplements warned users that information on Web sites may be false or misleading, and to watch out for “nutrition information that ends in a pitch for a product”<sup>42</sup>. Similarly, a *Self* article on fetal surgery warned readers that a Web site sponsored by Vanderbilt University Medical Center may over-zealously promote risky surgery to correct spina bifida for pro-life reasons, rather than for the best interests of the mother and baby<sup>43</sup>. A *Time* article points out that some Web-based services, such as self-ordered blood tests, may falsely alarm users that do not know how to interpret the results.<sup>44</sup>

Apart from a few articles about Web scandals, however, caveats attached to Web use were not common in the magazines. In fact, the magazines fully encouraged its readers to access information intended only for healthcare professionals, putting a great deal of confidence in their Web skills. *Prevention* magazine becomes an interesting case for consideration here. In two separate articles, *Prevention* recommends that consumers access information clearly intended for medical professionals. In an article on alternative cancer treatments, *Prevention* advises that “the best place” to get information on standard cancer treatments is [www.cancer.gov](http://www.cancer.gov). However, the article also advises consumers to use the professional sections of Web sites, with the help of an online dictionary to understand medical terms. “Use the

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<sup>41</sup> J. Morse with P. Bacon, Jr., and A. Pitluk, “An Rx For Teen Sex Doctors Are Joining the Abstinence Movement.” *Time*, 7 Oct. 2002: 64.

<sup>42</sup> T. Schryver, “The Spotlight on Coral Calcium.” *Prevention*, Jan. 2003: 65-66.

<sup>43</sup> L.C. Cool, “Saving Sophie.” *Self*, Dec. 2002: 152, 154-155, 178-179.

<sup>44</sup> U. Kher, W.M. Fleming, M. Sattley, “Who Needs Doctors?” *Time*, 28 Oct. 2002: 50.

‘professional practitioner’ sections of Web sites that post cancer information,” is suggests. “Use a site such as dictionary.com for help in defining the words.”<sup>45,46</sup>

Assuming that consumers can make sense out of clinical information is risky, and may lead to huge misunderstandings about diseases and treatment. Unfortunately, similar advice appeared just four months later, in the “Medical Breakthroughs” section of the December 2002 issue of *Prevention*. A news brief about rheumatoid arthritis offers readers a link (through its own Web site) to the American College of Rheumatology’s treatment guidelines that “help doctors understand and use the best new drugs and other therapies”<sup>47</sup>. Although such guidelines may give consumers a broad picture of the types of treatments available, they cannot offer individualized information about which type of treatment would really be best depending on personal medical histories, and therefore may be misleading about treatment options and expected outcomes.

*Prevention* was not the only periodical to provide such inadequate advice to its consumers; *Time* magazine, among others, also assumed a high level of Web competence among its readers. For instance, one *Time* article told readers that they can “find more info about impotence at [www.medlineplus.gov](http://www.medlineplus.gov).”<sup>48</sup> It is unlikely that the average consumer is familiar with Medline, and in some senses, this is akin to saying “find more info about impotence at your local library.” Without reference to a particular study or treatment, the consumer will yield an unmanageable number of results.

Overall, the periodicals portrayed health Web sites as useful tools for locating qualified healthcare providers, connecting to online support groups, and obtaining health-related information. In several instances, *not* using the health resources available on the Web was portrayed as being potentially harmful. For example, the manufacturer of a particular therapy advised that all licensed providers of the therapy were listed on its Web site; to avoid potential harm resulting from visiting unqualified providers, using the Web site is necessary.<sup>49</sup> Similarly, concerns have arisen that filters on school computers intended to block pornography may be preventing adolescents from accessing important health information.<sup>50</sup>

## Conclusion

It is important to note that these findings may not be reflective of all popular magazines. Even if their handling of the Web is not representative, however, these magazines have large audiences and are among the most widely read in the U.S. Our findings about them are sobering. In only very few instances was Web site quality explicitly discussed. Web literacy

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<sup>45</sup> S. Altshul, “Nothing Left to Lose.” *Prevention*, Aug. 2002: 120-127, 164-165.

<sup>46</sup> Instead of providing outside URLs in its articles, *Prevention* usually provides links to recommended Web sites through its own site, [www.prevention.com/links](http://www.prevention.com/links). At first, one may think that this is a security measure, ensuring that readers end up at precisely the site that was discussed in the piece. However, *Prevention*’s commentary about the audience’s Web use may instead indicate that this is simply a means of boosting traffic on the *prevention.com* Web site.

<sup>47</sup> J. Matus, “Act Fast for Less Pain.” *Prevention*, Dec. 2002: 157.

<sup>48</sup> C. Gorman “Sex and the Serious Cyclist.” *Time*, 28 Oct. 2002: 69.

<sup>49</sup> K. Peraino, “Beware the Back-Alley 'Botox' Scam.” *Newsweek*, 5 Aug. 2002: 47.

<sup>50</sup> J. Perry, “Finicky Filters.” *U.S. News & World Report*, 23 Dec. 2002: 49.

regarding health Web sites is not a concern for these publications, even though they regularly refer their readers to Web sites. The magazines imply that they are presenting only the best Web sites as references to their readers, but they do not explain why they made certain choices and not others. Although more than half of the URLs given were dot-orgs, implying that these sites are expected to be of high quality, this does not necessarily ensure credibility or suitability for consumers. Because the discussion of how to approach the Web is minimal, and the advice contained within that discussion is questionable, the role of the print media in vetting Web sites for their readers remains important. One future path for inquiry is to consider whether the print sources are actually evaluating the sites they recommend.

One disconcerting general finding was the recommendation that consumers should access information intended for medical professionals. By obtaining self-ordered lab tests, or reading clinical treatment guidelines, a consumer may be easily confused or misled by complicated clinical information. Pew research suggests that consumers help one another to triangulate information that is meaningful and helpful to them from Web sites.<sup>51</sup> Whether and when this confusion exists with professional sites is certainly an empirical question and deserves further study.

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<sup>51</sup> S. Fox and L. Rainie, "Vital Decisions: How Internet Users Decide What Information to Trust When They or Their Loved Ones Are Sick," Pew Internet & American Life Project, 22 May 2002. Also S. Fox and L. Rainie, "The Online Health Revolution: How the Web Helps Americans Take Better Care of Themselves." The Pew Internet & American Life Project, 26 Nov. 2000.

## **Discussions of Health Web sites In Internet Trade Publications**

Lee Humphreys<sup>♦</sup>

How does the internet industry think about health Web sites? Just as the medical industry is incorporating the internet into their business, is the internet industry incorporating health care into its agenda? Exploring CNet and ZDNet from August 2002 to January 2003, we found little coverage of health Web sites.

- **Only 20 pieces during the six-month period raised the topic. Ten of those were message board postings.**
- **Most of the stories that did exist were about information technology developments within the health care industry, not consumer issues.**
- **When a story did show concern for consumers who might be misled by health sites, postings by readers responded unsympathetically that consumers ought to know better.**

### **Method**

We chose to examine two online publications aimed at the internet industry, CNet and ZDNet. ZDNet is currently owned by CNet, but we examined the two to see if there was any difference in the coverage of the health Web sites. CNet is primarily a news site. Its byline is “Tech News First: Round-the-clock breaking, technology news coverage.”<sup>52</sup> ZDNet tends to be more product-oriented. Its byline reads “ZDNet. Where technology means business: Strategic analysis and detailed product information.” The audiences of these two publications are predominantly people who work in information technology (IT), and because they are online publications they can be easily read by internet professionals outside the U.S.

Using the Web sites’ search engines, we searched news stories between August, 2002 and January 2003 that mentioned the term “health.”<sup>53</sup> We analyzed the articles qualitatively. Data collection and analysis focused on six broad categories of information: the Web sites referenced, the audience, the audience’s knowledge of the Web, the Web sites’ effects on the audience, the health industry’s use of the Web, and the effects of Web sites on the medical community.

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<sup>52</sup> Found at link for CNet news.com on <http://www.zdnet.com/>

<sup>53</sup> The search term “health” was used as an overarching concept to capture any health-related articles. For example when searching for “diabetes” on news.com, the only finding in this six-month period also included the word health. However, there may have been instances of other health-related articles which were not found if the article did not mention “health” or some version thereof, such as “healthy.”

This search initially identified 191 articles. We then read through these transcripts to identify those that specifically mentioned health Web sites. This brought us down to about 20 transcripts. Several stories by the same reporter are distributed on both sites. If the author and text of the story were the same we only coded the story once. If the author or content was slightly different, then we would code both stories.

### The Sites

We found little mention of health Web sites in the two online trade journals. A total of only 10 stories appeared throughout the entire six months. Most of the 191 articles found in the search centered on news about IT development within the healthcare industry, not on consumers' relationship to the health sites. Only five articles mentioned the health industry's use of the Web as a tool for consumers. Two articles briefly discussed the Web as a place to disseminate health information in national emergencies or prior to travel.<sup>54</sup> Two articles also discussed consumers finding inaccurate information online.<sup>55</sup> The last article was about how all businesses need to improve the accessibility of their Web sites for handicapped people.<sup>56</sup>

No health sites received repeated reference from CNet or ZDNet. Reporters from the U.K. tend to cite health Web sites which are non-American. One story in ZDNet, for example, focused on potential health dangers of working on computers all day. The article suggested how people can avoid such dangers and referenced NetDoctor.com, a European health Web site, as well as the Medical Research Institute of New Zealand.

When new health Web sites receive mention, it was from an industry, not consumer, perspective. For example, when Yahoo! created its health Web site health.yahoo.com both ZDNet and CNet published stories about it. They discussed how this would be a new revenue stream for Yahoo! because pharmaceutical companies would be interested in advertising on the site. Neither piece was at all concerned about how ad revenue from health firms might influence health content, despite mentioning that the site would give "links to prescribed medication" right next to facts about symptoms and news headlines about each ailment. The only tension in the article was Yahoo!'s need to convince pharmaceuticals to advertise on its site despite Yahoo!'s falling advertising sales.

### Reader and Consumer Knowledge of the Web

Both CNet and ZDNet assumed that their readers have an advanced knowledge of the internet. This presumed sophisticated understanding was consistently suggested in two ways. First, Web site URLs were not usually given; only the host or company name was presented. Second, the names of the institutions were only sometimes hyperlinked. It would be very easy for CNet or ZDNet to add hyperlinks to their references, but most of the time they do not. Clearly, they assumed that readers are sophisticated enough to fend for themselves.

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<sup>54</sup>Shane Robison. "IT Glitches in Homeland Security." CNET News.com and ZDNet, 17 Jan. 2003 and Gilbert, Alorie "Ticket, Toothbrush...Travel E-mail?" CNET News.com and ZDNet, 14 Aug. 2002.

<sup>55</sup> Graeme Wearden. "Study Exposes Shaky Web 'Facts.'" ZDNet, 5 Nov. 2002 and Gilbert, Alorie "Study Finds Fault with Advice Sites." CNET News.com, 5 Nov. 2002.

<sup>56</sup> Rachel Konrad. "Wanted: Web Geeks for the Disabled." CNET News.com and ZDNet, 12 Aug. 2002.

This proposition that ZDNet and CNet readers can fend for themselves raises the question of whether these online periodicals and their readers believe that *all* consumers can and ought to fend for themselves in the online environment. The issue came up around two stories that were specifically about the credibility of the information on advice sites. One appeared on ZDNet, the other on CNet. The stories were mostly the same, but were written by two different reporters.<sup>57</sup> Examining the differences between the two pieces reveals different takes for different readerships. The CNet article was written by an American reporter with American sources, while the ZDNet article was written by a British reporter with international and British sources. The ZDNet article is much more explicit about recommending best practices of how to approach Web sites. The article suggests users check the Web site's background before assessing the content on the site. It also suggests that users should be skeptical if the site does not disclose its mailing address, ownership and details of its partners and sponsors. The CNet article does not make such suggestions. It identifies the problem, as suggested by WebWatch and Stanford's BJ Fogg, but does not give best practices for how consumers should evaluate Web sites. Instead, it discusses how WebWatch evaluated health Web sites.

The concern about consumers' Web literacy raised hackles among some ZDNet readers. ZDNet allows them to post responses to articles. The ZDNet article about the credibility of information on advice sites is the only article related to health Web sites about which readers had posted messages. Overwhelmingly, postings revealed an unsympathetic response to the article. Readers, who are most likely very sophisticated internet users, showed little patience for consumers duped by misleading information online. Here are a few examples:

Since when was the consumer assumed to be an idiot who didn't have a clue they should consult a professional before taking tax advice from a Web site they know nothing about? Or perhaps they take two aspirin for the severed arm because that's what the Web site said? If people are stupid, they're going to eventually have a hard life. The secret is to teach them common sense early or let them kill themselves off before they breed. Keeping dumb people alive despite themselves is doing a disservice to evolution and the human condition on this planet. A little chlorine in the gene pool would be a good thing right now.<sup>58</sup>

Hey, it's not like there is only one site on the internet! Cross check all information between a number of different sources. Beware of any 'information' which can only be found on one site, or on obviously related sites! This is not rocket science, just common sense!<sup>59</sup>

Any adult stupid enough to believe unsubstantiated claims from any source really deserves what they get. This is another good reason parents should monitor children's use of the internet. If you have children, you should locate these sites and show your

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<sup>57</sup> Graeme Wearden. "Study Exposes Shaky Web 'Facts.'" ZDNet, 5 Nov. 2002 and Gilbert, Alorie "Study Finds Fault with Advice Sites." CNET News.com, 5 Nov. 2002.

<sup>58</sup> Fubill Ckgates, Message Board Posting: "Stupid people beware," *Talk Back* on ZDNet, 23:11 GMT 5 Nov. 2002.

<sup>59</sup> Donald W. Shantz, Message Board Posting: "Use your head!," *Talk Back* on ZDNet, 03:18 GMT 6 Nov. 2002.

children how they can expect strangers to take advantage of them. This is really a good teaching/learning opportunity. I vote 'no' on legislative intervention. If people want to devote their own resources to educating consumers, I say go ahead, that's a good cause, but I have higher priorities.<sup>60</sup>

All of the 10 postings were critical of the naïve consumer. It is worth questioning how representative these postings are of people in the internet industry. Perhaps those readers who disagreed with these ardent messages did not feel comfortable posting their views. The postings did contrast to the articles and consumer organizations represented in them. Beyond this one story and the postings on ZDNet, however, during the six-month study period we found no other critical discussion of the quality, accuracy or reliability of information on health Web sites.

### **Conclusion**

Overall, the discourse on CNet and ZDNet did not reveal an ongoing concern for the credibility of health Web sites. The readers' responses to one story explicitly discussing the issue reveal an unsympathetic reaction from presumed internet professionals. Readers do not suggest that the content on the Web needs to be changed or improved, but instead that consumers need to develop a critical approach to health information online. It is taken for granted that information online may be misleading. Readers suggest that consumers just need to use some common sense and are "dumb" if they believe everything they read on the internet. This contrasts sharply with the consumer organizations that are represented in the articles.

While clearly a limited sample, this difference — and the low attention paid to Web health issues by these technology e-periodicals — may represent a philosophical split between Web experts and health activists regarding locus of responsibility for good information. It is a topic worth exploring further.

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<sup>60</sup> Paul Snyder, Message Board Posting: "Call It 'Naivete,'" *Talk Back* on ZDNet, 11:38 GMT 6 Nov. 2002.



## Discussions of Health Web sites in Television News

Lee Humphreys<sup>♦</sup>

We explored the treatment of health Web sites in a wide range of television network news programs on ABC, CBS, CNN, Fox, and NBC from August 2002 through January 2003. We found that health Web sites show up in TV news but not in ways that attempt to help viewers approach such sites critically.

- **One major way that TV news programs bring up health Web sites is when referring to a person who represents a health organization.**
- **The other major way are site references by journalists and others as sources of their information.**
- **In either case, television news does not explicitly discuss the quality, credibility or accuracy of health Web sites.** The only recurrent concern during the period studied were e-commerce scams and the selling of potentially harmful products over the Web.
- **Moreover, across all five networks, over six months, 80 stories mentioned health Web sites while only eight stories centered on them.**

### Method

Five major news networks were sampled for this project (ABC, CBS, CNN, Fox and NBC). We examined transcripts of news programming on these networks from August 2002 until January 2003. News programming included nightly news broadcasts, morning news shows, such as *The Today Show* and *Good Morning America*, as well as news magazine shows such as *Dateline* and *60 Minutes*. In the case of CNN, all broadcasting was included in the search. Using LexisNexis, we searched news transcripts using the following terms: health! and (Web or Web site). It should be noted that the word “health” did not need to appear explicitly in the article text; it also could have been located in the electronic indexing terms that LexisNexis uses. LexisNexis tags articles about diseases, medicine, and other “health” topics with that “keyword” even if the word doesn’t show up in the article. That allowed us potentially to search for articles about diabetes Web sites that didn’t have the word “health” in them but, of course, are about health. Results of these searches were analyzed qualitatively

This approach initially identified 727 transcripts. We then read through these transcripts to identify those that specifically mentioned health Web sites. This brought us down to 58 transcripts. Data collection and analysis focused on six broad categories of information: the

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Web sites referenced, the audience, the audience’s knowledge of the Web, the Web sites’ effects on the audience, the health industry’s use of the Web, and the effects of Web sites on the medical community.

**The Web sites**

The five networks differed in their discussion of health Web sites. Overall CBS, CNN, and NBC emerge as the most internet conscious. These networks reference and explicitly discussed health Web sites more than did ABC and Fox. Of all of the networks, Fox discussed the Web the least by far. In six months of news transcripts there were fewer than five mentions of health Web sites. It should be noted that Fox News does not have a national morning news show unlike the other networks. Perhaps because of this lack of programming, Fox did not have as many opportunities to reference and discuss health Web sites.

**Table 9:** Most Frequent Mentions of Web sites in Health-Related Network News Stories

Website	# of stories
NBC (MSNBC.com)	77
ABC (abcnews.com)	19
CBS (cbsnews.com)	18
CNN (cnn.com/yourhealth)	18
Centers for Disease Control	11
Breastcancer.org	2
National Cancer Institute	2
Federal Drug Administration	2
Fox (foxnews.com)	0

As Table 9 indicates TV network news programs tended to mention their own sites when leading viewers to health information. NBC explicitly directed people to non-NBC health Web sites three times, while they directed people to the MSNBC Web site 77 times for more information about a health-related story. ABC never explicitly directed viewers to a Web site

other than ABCNews.com, which they did 19 times. CNN even has a specific health Web site, “cnn.com/yourhealth,” to which they referred viewers 18 times, while only directing viewers to non-CNN health sites six times. CBS also directed people to its Web site CBSNews.com for further health related information 18 times, but to non-CBS health sites 12 times. Curiously, Fox News did not direct people to any Web site for health information, even its own.<sup>61</sup>

Of the non-network sites, the Centers for Disease Control’s site was the only one mentioned more than twice. All of the networks but ABC mentioned it. In one story from January, ABC did mention a generic “government Web-site”<sup>62</sup> but did not give a specific organization or URL. The story was in reference to the Centers for Disease Control (CDC), but only additional media use would have disclosed this. CNN, for example, covered the same story and did reference the CDC Web site.

One reason for the CDC mentions had less to do with health information coverage than with the coverage of politics. NBC, CNN and ABC all reported on a debate about the politicization and subsequent alteration of health information on the Web. Information on the CDC Web site regarding birth control and STD prevention was changed to become more conservative after the Bush administration took office.

Through these and other mentions of health Web sites, it became clear that they were important tools. A health organization’s Web site became its official voice. Journalists and experts referred to Web sites as trusted sources of information.

Using a health Web site as a source of information for a story indicated that the Web site is credible. A typical case of such passing references was an ABC story<sup>63</sup> about the potentially harmful side effects of an anti-malaria pill. In the course of his narrative, anchor Charlie Gibson said, “And we went on Hoffman-La Roche's Web site, which says the drug has occasionally, underline occasionally, been linked to anxiety...” Covering a different story, CNN showed the CDC Web site when bubonic plague samples were stolen from a technology firm in Texas. The reporter said, “We're looking at the Web site from the CDC, a pretty graphic picture of what it looks like when you are diagnosed with bubonic plague.”<sup>64</sup>

Implicitly, news organizations’ references – even in passing and without criticism – to Web sites may well imply an endorsement. That particularly seems the case in view of the general lack of discussion across all five networks about quality, accuracy and reliability of information on Web sites. During the six-month study period, we found no careful commentary about sites, no stories about Web health seal-of-approval programs, and no discussion of what Web site best practices should be. Even the stories with Web sites as the

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61 Though referencing the network’s own Web site may indicate a desire to raise traffic and hence advertising revenue for the networks, it may actually benefit viewers. It is much easier for a viewer of the Today Show to remember “today.msnbc.com” if it is repeated throughout the show, than it is to remember a specific Web site of a specific organization mentioned in a story. It is also indicated in the transcripts that NBC, at least, did have links on its Web sites to organizations represented in its stories. Most of the time, experts interviewed on NBC referred people to the NBC site rather than their own organizations’ sites.

62 *World News Tonight with Peter Jennings*, ABC News, 3 Jan. 2003.

63 *Good Morning America*, ABC News, aired 23 Aug. 2002.

64 Kyra Phillips, CNN, aired 15 Jan. 2003, Transcript # 011503CN.V00.

dominant theme were not aimed at critiquing them. A majority were basically puff pieces by an AOL spokesperson who identified “good” health sites and encouraged readers where to go online.

Along the same lines, TV news made little mention of the health industry’s use of the Web for business purposes. Implicitly, stories portrayed the Web as a place to disseminate information to the public. Web tools that helped people evaluate hospitals and doctors were portrayed as simply places to disseminate information to the public without attempts to discuss their ramifications for the health business. TV news discussed the Web transparently, without an eye on understanding the organizations that shape it and their aims.

### **The Audience and Web Knowledge**

TV news also discussed the Web without an eye on differential access. When it came to health, the digital divide did not exist in television news. TV news assumed the audience has knowledge of the internet. News programs also took for granted that viewers have access to the Web and use it.

The news programs did, however, recognize that people have different levels of online competency and that some might need help on finding health sites. Both CBS and CNN used Regina Lewis from AOL as their regular internet expert. In her segments, Lewis discussed features of the Web and specific Web sites. She identified “good” health Web sites, like the CDC or WebMD sites, but did not explain what is specifically good about them. When recommending these sites, Lewis did not always give the URL. She seemed to assume a moderate level of competency among her viewers. She told viewers, for example, about “a terrific site created by the Boston University Public Health School”<sup>65</sup> or the “CDC Web site.”<sup>66</sup>

Apart from the implicit suggestion that people go to health Web sites such as the ones mentioned on TV, there was little discussion about how people use the Web. Health Web sites are seen as a way to supplement users’ health care from their doctor. An exception to this generalization was AOL’s Lewis. She did present information from reports about what people are doing online. On CNN, she discussed the sites with the highest traffic for the week.<sup>67</sup> Amongst these were two Web sites about health: a UCLA Web site describing their successful separation of Siamese twins and the CDC Web site offering information about the West Nile virus. In a CBS story about Breast Cancer Awareness Week, Lewis stated that “On any given day, typically about six million people seek health information online. One in four go on to find online support.”<sup>68</sup>

Another story on CBS during Breast Cancer Awareness Week that described user behavior online as noteworthy for its unusualness. In it, breast cancer survivors and patients discussed how they were using the Web to find emotion support in chat rooms.<sup>69</sup> In a moving, emotional

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<sup>65</sup> *CNN Saturday Morning News*, CNN, 4 Jan. 2003, Transcript # 010423CN.V28.

<sup>66</sup> *The Early Show*, CBS News, 27 Aug. 2002.

<sup>67</sup> *CNN Saturday Morning News*, CNN, 10 Aug. 2002, Transcript # 081009CN.V28.

<sup>68</sup> *The Saturday Early Show*, CBS News, 25 Jan. 2003.

<sup>69</sup> *The Early Show*, CBS News, 24 Jan. 2003.

scene, four women meet face-to-face for the first time on television after having met online on the BreastCancer.org “Community and Support” site. They talked about the Web site and how helpful it is to be able to connect with people going through or having gone through similar challenges. The breast cancer survivors also discussed how helpful it is for them still to go online and help those women who have recently developed breast cancer.

This was the only story on all five networks to discuss people going online for emotional support from other internet users to help deal with illness. The fact that this story is so positive indicates there is no public fear of disclosure online.

Generally, the effects of health Web sites are seen as positive. The assumption is that Web sites were a resource for people to get health information and a more informed health consumer would therefore be a better health consumer. Though there was some discussion about using health Web sites in conjunction with doctor consultation, the Web was mostly seen as empowering viewers to be active consumers of health care rather than passive patients. A few stories discussed sites on which to compare hospitals or doctors to ensure consumers get the best medical care possible.

In one case this approach did raise journalistic probing. A story about “health calculators”<sup>70</sup> brought conflict between the reporter and AOL’s Regina Lewis. The reporter, Russ Mitchell, questioned the reliability of these internet tools. Lewis promptly discounted his concerns by suggesting without evidence that these Web sites can offer the same information as a doctor and that doctors encourage patients to use them.

LEWIS: But a lot of doctors really encourage this because it gives you a snapshot. It lets you know where you stand, and that’s important.

MITCHELL: How accurate are we talking about here? These – these are all fun, but should we take these very seriously?

LEWIS: Well, I think that the – the indexes, they give you a good snapshot. And again, these are formulas that are widely used in the medical field.<sup>71</sup>

The most recurring concern about the effects of “health” Web sites involved e-commerce scams. Networks covered stories about harmful products sold online including diet pills, hair growth treatments, and non-prescription cosmetic contact lenses. There was also a story about a Web site selling a product that supposedly protects against West Nile virus; the story was eventually removed from the site because of false advertising. Interestingly enough, none of the stories explicitly recommends ways to avoid becoming victims of such scams. Perhaps it is believed that overall awareness of scams will help decrease victimization.

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<sup>70</sup> *The Early Show*, CBS News, 25 Sept. 2002.

<sup>71</sup> *ibid.*

## Discussion

In analyzing the public discourse about health Web sites on TV news, one must explore what is covered as well as what is *not* covered in the news. Importantly, none of the networks did a story on the credibility or accuracy of health Web sites. There was hardly any critical discussion about the quality of health information online. Additionally, there was no discussion of how to improve the quality of health information online or mention of any seals of approval for health Web sites. Moreover, there was little discussion of how people who use the Web search carefully and successfully.

It should be noted that we only analyzed the transcripts of the news programs. There may have been incidents where a Web site was shown in text on the screen but was not discussed in the audio. In such cases, we would not have caught it in our analyses. There were two occasions where a Web site was referenced on the screen, but the reporter or guest also commented on it and therefore it came up in the transcripts.

In the future, TV news networks ought to be more self-reflexive about how their coverage of health Web sites reflects an uncritical discussion of health information online. If the press is to truly be a watchdog for the public, a more critical approach to the credibility and quality of e-health is needed. The press' recognition that referencing sites implicitly lends credibility to these sites is an important step in understanding TV news' impact on the public.