

## **Traditional and Online Media: How the Internet Has Changed the Reporting of Medical News**

Keiko Kandachi  
M.A. University of Maryland, College Park  
Associate Editor, Newsweek Japan

### **Abstract:**

This thesis attempted to investigate how the Internet had changed the reporting of medical news. Since the late 20th century, there have been growing concerns about emerging global health issues. Consequently, the media have an important role to play to better serve the needs of people seeking medical news and information. My presumption was that the Internet held the key for news organizations to accomplish this task: the population online has been exploding since the mid-1990's. Further, it seemed that the Internet could overcome the limitations of the traditional media because of its virtually unlimited space and interactivity.

To examine this assumption, I supplemented the traditional literature review with interviews with primary reporters, editors, producers, and others involved in both traditional and online journalism. To provide a context for the study, I also examined some of the major online sources of medical information. Finally, to better illustrate how news organizations have made use of the Internet in reporting medical issues, I conducted a case study about mad cow disease. In the case study, I compared how online and traditional versions differed during 2000 in three news organizations: CNN, CBS, and *The New York Times*.

In conclusion, I found that the availability of the Internet did not automatically improve the reporting of medical news. Whether the media are online or offline, it is the people, organization, and/or social forces, or a combination of these factors, that make the difference, not the technologies *per se*.

### **I. Introduction**

Since the mid 1990s, the Internet has been disseminated in many advanced countries. It has the potential to better serve the needs of the public seeking credible and accessible medical news and information. My question for this paper is how the Internet has changed the reporting of medical news in terms of the news product that results, thereby better satisfying those needs.

To examine this, I have adopted the "news net" theory by Tuchman (1978). She argued that what becomes news (and what does not) depends on the capacity of the news net that each media company possesses to capture information, and thereby present news. Expanding on this argument, published originally in

1978, I supposed the Internet can fill the “holes” of the modern-day “news net,” making it much more complete. Online media can play the role of “niche” media, thus complementing the traditional “mass” media. I examined whether this hypothesis is true, and if so, how. In this context, I discussed the traditional media as mass media targeting the general audience, that is newspapers, magazines and network television.

I base my conclusions on the literature review with interviews with reporters, editors, producers, and others involved in both traditional and online journalism. To provide a context for the study, I also examined some of the major online sources of medical information, including specialized Web sites, as well as sites produced by traditional news organizations. Finally, to better illustrate how news organizations have made use of the Internet in reporting medical issues, I conducted a case study about an emerging health issue — bovine spongiform encephalopathy (BSE), commonly known as “mad cow disease”. In the case study, I compared how online and traditional versions differed during 2000 in three news organizations: CNN, CBS, and *The New York Times*.

## **II. What Medical Information is Available on the Internet?**

One of the most popular uses of the Internet is searching for medical information. There are a number of statistics showing this trend. According to the Pew Internet & American Life Project (2002), 56 % of Americans with Internet access seek medical information online. They are more numerous than those that shop or look up stock quotes online. To serve the needs of those medical information seekers, there are approximately 17,000 medical Internet sites. In fact, if one typed in the keyword “cancer” at the Google search engine, about 12,700,000 hits appeared as of October 28, 2002. It is a daunting task to distinguish necessary information among the flood of materials. I have categorized Internet health sites according to the providers: government institutions, medical and science journal publishers, traditional news companies.

### Government Institutions:

Given that the background that the Internet was started by the initiatives of the U.S. federal government and academia, one could find that those government institutions have played a leadership role in disseminating medical information by utilizing databases traditionally available only for public officials or academic scholars. Among the key players are MEDLINE<sup>plus</sup>, the U.S. Food and Drug Administration and the Centers for Disease Control and Prevention.

### Medical and Science Journals:

Medical and science journals have also been among the most frequently quoted health news sources. Wehrwein (1998) argued that “according to *The New England Journal of Medicine*” has become one of the great totem phrases in American medicine and newsrooms. Other renowned journals in medicine and science such as *The Journal of the American Medical Association (JAMA)*, *The Lancet*, *Science*, and *Nature* have also played the same role as most authoritative and credible sources because of their strict standards in selecting articles based on their peer review system.

Before the advent of the Internet, those journals were only available in specialized medical and science libraries and bookstores and by membership or subscription. However, now that they operate their own Web site, they can be reached not only by medical specialists and journalists but also by lay audiences.

#### Traditional Media:

Even so, most of these science/medical journals are written in highly technical terms that are difficult to understand even for educated people, if their specialties are not in medical science. Given this fact, traditional media companies have expanded their business to online health information services as well. CNN.com, The New York Times on the Web and other sites opened a section dedicated to health in recent years.

The organizations operating these Web sites take advantage of their experience in traditional media, in that they convey news to audiences in readable and understandable ways, while utilizing the availability of the Internet to reach wider audiences, thereby serving their specific needs. These sites are often called “e-health.” As Davis and Owen (1998) put it, “speed in news delivery, reach in newsgathering, and credibility still offer the traditional media organizations advantages in the competition with alternative sources.”

### **III. Traditional Media:**

#### **How They Can Improve the Reporting of Medical News**

In this section, I focus on the traditional media and their characteristics and look at how media organizations can (and cannot) possibly improve the reporting of medical news in their traditional and online versions.

#### Characteristics of the Traditional Media:

##### (1) Limited Time and Space

Obviously, newspapers have limited space and television programs have

limited time. Each newspaper has a fixed number of pages and specific dimensions. Every television program is broadcast in a fixed time frame. In particular, nightly news shows on network television are quite condensed packages.

Newspapers have relatively more room in terms of word count than a 30-minute television news show, but their space is still limited. In addition, Glenda Chui (2001), science writer for *The San Jose Mercury News*, emphasized that readers had time limitations when reading newspapers: she stated that on average, they only have 17 minutes to peruse the newspaper, according to the marketing staff at *The San Jose Mercury News*.

These time and space limitations mean that journalists have to present the news clearly, directly, and concisely. This is essential to make the general audience understand the news, although this task can be difficult when the story is on complicated medical and scientific subjects.

Chui (2001) said that when she was out of journalism school, she was told that they would have to write and communicate to basically an eighth grade level of reading understanding. John Roberts (2001), anchor for the CBS News with John Roberts and chief White House correspondent at CBS News, who was on the medical beat, made the same point by stating that the news story has to be so clear and direct that people can get enough information for their particular life.

While the time and space constraints can work well to encourage media workers to present news in concise and understandable ways for the lay audience, these constraints sometimes may not produce such a good outcome. First, they can lead to the criticism of media coverage of scientific subjects as cursory. Davis and Owen (1998) suggested stories that are compressed to conform to the time and space requirements of a standard news broadcast may be perceived as superficial and uninformative. Freimuth et al. (1984) made the same point by arguing that news media coverage of scientific subjects has often been criticized for oversimplification and the omission of important facts.

Second, these constraints can lead to less specific information. For instance, if the story is about a certain disease, the reader may want to know how to choose a good doctor and hospital in the neighborhood. It does not seem, however, the mass media can be turned to for this kind of advice. This would be partly because mass media, especially those targeting a national audience, such as network television and national newspapers, target a large audience and cannot run stories only relevant to a particular local area.

(2) Newness

As the term itself indicates, news is supposed to be something new. Many journalists working in the traditional media tend to constantly keep this in mind. Geoff Carr (2001), science editor at *The Economist*, stated, “Things in journalism are focused on now.” The idea to provide fresh information is vital, particularly in medical reporting because the latest findings can save lives. For example, in July 1997, many newspapers and television news shows reported on the side effects of the diet drugs, namely fenfluramine and phentermine, collectively known as “fen-phen.” This was when the Mayo Clinic announced that they had identified 24 women who, after taking these drugs, developed heart-valve problems. It is assumed that many people should have been saved because they learned of the side effects through the media coverage.

Since it is often the case that the latest medical findings are first published in medical journals such as *The New England Journal of Medicine* and *The JAMA*, most medical journalists turn to those journals to seek something new, thereby obtaining story ideas. While these medical journals are regarded as authoritative materials, it may be dangerous to rely on these limited sources too heavily: there are statistics that show even those peer-reviewed journals may be distorted because of private funds.

Robert Lee Hotz (2001), science writer at *The Los Angeles Times*, quoted a study by Tufts University that surveyed over 1,000 scientists who wrote research papers in 14 major scientific and medical journals in 1992, pointing out they discovered a third of them had a direct financial stake in the research and many technical journals still decline to ask scientists about such connections or disclose them when publishing new research. Even the few journals that do require such disclosures rarely publish them. As a result, Hotz (2001) maintained that the contents may have been distorted because of these financial entanglements.

In addition to this problem, there are other reasons why depending too much on so-called “breakthroughs” can be dangerous. John Roberts (2001) suggested that it is very easy to see every little incremental development as the big breakthrough. He further pointed out that it was a huge leap from laboratory animals to human studies and to success in human trials. Reporters want to amaze and excite viewers, but they should stand back and contemplate whether it is really a “breakthrough,” he argued. He maintained that this was because 99 % of what happened in science, which looked terrific in the laboratory or on the bench or in early research techniques, turned out not to succeed in the application of medical care for humans.

Another problem arising from seeking newness is that this tends to lead to shortsighted stories. Nelkin (1995) made this point when she stated, “Emphasis on breaking news is often detrimental to good coverage of science, for important

issues such as AIDS may not be associated with striking single events, and significance usually lies in long-term consequences.”

As such, seeking breakthroughs by primarily relying on medical journals can lead journalists to trap “bad fish” with the news net. So, how can this problem be fixed? John Roberts (2001) discussed his reporting methods that helped him to develop more unique and quality stories from a longer-term perspective than he would have developed simply by depending on the medical journal. That is, his crew used to visit a researcher every few weeks who would soon publish a paper in a medical journal, and “take another little piece of the puzzle” every time they saw the researcher so that on the day the embargo of the journal was lifted, they were prepared for an in-depth piece that followed the entire progress of the research.

### (3) Graphic Presentation

To attract the attention of a large and diverse group of readers and audiences, mass media attempt to present stories in vivid and graphic ways, which applies to both print and television. Sometimes these vivid and graphic ways involve the use of actual visuals. For example, John Roberts (2001) stated that he made use of television as a visual medium in medical reporting. He would even go into operating rooms, watch ground breaking procedures, and televise them in the news show.

At the same time, often vivid and graphic presentations rely on the use of words to evoke images. This can be especially important in print. Eugene Roberts (2001), professor at the University of Maryland College of Journalism and former managing editor of *The New York Times*, stated during his writing class that when you write a story, you have to make the reader “see” the story vividly. To accomplish this objective, print journalists often use an anecdote that is supposed to represent the whole story. While this often helps the audience to understand the story better, it can sometimes lead to somewhat inaccurate presentation of the news. Friedman (1986) argued that although anecdotal experience can be colorful, it is sometimes a poor predictor of the way things generally are.

Placing higher priorities on pictures or dramatized anecdotes often means emphasis on prominent people that appear in the story. When characters appearing in news stories are celebrities, those stories tend to be more conspicuous and thus attract the attention of the public. Therefore, prominent people are often quoted even in fields other than their specialties. This applies to medical journalism as well.

### Characteristics of Online Versions:

An increasing number of traditional media outlets now provide their regular news services via the Internet. They have the potential to fill the holes of the news net because of its unique capabilities: unlimited space and interactivity.

#### (1) Unlimited Space

In contrast with the limited space and time in the traditional media, there is virtually unlimited time and space on the Internet. Newspapers run out of space and broadcasts run out of time, but cyberspace runs forever, allowing for both depth and breadth (Stepp, 2000).

In addition to the virtually unlimited space, hyperlink functions of the Internet have enabled online news outlets to cooperate with many other sources so that they can present their stories in a broader context than a single medium can do. A typical news story in a news site run by a traditional media company has a link to the news sources and related stories in the site, or even stories from other news sites.

John McConnell (2000), multimedia editor at *The Lancet*, said that much of the audience of the BBC Web site accessed *The Lancet* because many news stories in the BBC site have hyperlinks to the medical journal. He emphasized that it was the trend that interesting stories in general news sites or portals like Yahoo! had led people to access specialized sites to get more information. In the past, even if the reader knew what the news source was, there were few who actually went to a library and did research for further information. But now, he further argued that one could do this quite easily on the Web, and that it was as if one had a huge public library in his or her hands.

In portal sites, it is often the case that they cooperate with several other specialized sites and present related stories collectively so that the audience does not have to visit each of these sites. For example, the health section of America Online (AOL) has partnerships with WebMD and several other sites.

#### (2) Interactivity

Another unique aspect of the Internet is interactivity. Harris (1995) succinctly summarized this function by saying, "Computerized and digitized media can be made smart. Once computerized, passive media can turn into interactive media — media that does not only inform their users, but interacts with them. Interactive media can serve as information brokers, matching information resources with information users throughout a network of users."

A myriad of sources that are hyperlinked to each other on the Internet has enabled people to find specific information that they need. According to the 1996 Pew Technology Survey, 67 % of people who go online are looking for specific information, 20 % are browsing, and 12 % engage in both activities.

Peter Aldhous (2001), news/features editor at *Nature*, also stated that the unique quality of the Internet was that it could satisfy a very specific need for each individual. “For example, the most heavily trafficked part of *Nature* online is job searching. If you find a job by reading the advertising, it takes much more time. But you can put the exact conditions you want and then search, which takes much less time,” he said.

Interactivity has made it possible to convert different types of media into one form and illustrate the story idea more graphically than print media does, and in more depth than television does.

Jude Doherty (2000), executive producer of washingtonpost.com, emphasized that this is why they cooperate with MSNBC and run video clips with *The Washington Post’s* articles when necessary. Eve-Marie Lacroix (2000), chief, public services division at the National Library of Science, also stated that MEDLINEplus added an encyclopedia and images because people want to know the nature of diseases and have greater descriptions of them. Hence, MEDLINEplus added pictures of every kind to illustrate different aspects of cancer and other diseases so that people might be better informed. Lacroix (2000) stated that they have attempted to learn what people are searching for and to give them what they want.

#### Challenges for Online Media:

It seems that some of the problems of the traditional media can be solved by utilizing the Internet, but some of the same issues still remain or even worsen, and new problems are created as well.

##### (1) Workload Can Be More

For some journalists, the Internet means more work. John Travis (2001), biology reporter at *Science News*, recounted that he had to use more pictures and graphics in the articles and utilize interactive functions such as putting email addresses and hyperlinks to other materials, which took more time. He succinctly summarized the dilemma for journalists in the digital age: “The Internet has almost unlimited amount of resources for journalists, but the time you can spend is limited, which has not been changed over the years.”



In addition, online media tend to be understaffed, which means media workers have to accomplish their job with less staff and time. Many editors of consumer health sites state they have to do a tremendous amount of work with a very limited number of reporters and editors. For example, when she worked for AOL's health section from 1998 to 1999, Susan Allison (2000), now editorial consultant at Discovery Health, was the only full-time producer, and her working hours were quite intensive: she received 100 emails and attended a number of meetings a day, while communicating with ten partners and editing stories.

On the other hand, the Internet can be used as a tool to reduce the amount of work as well. Some journalists said the upside of the advent of the Internet is that their work has become much easier (Carr, 2001, Travis, 2001, Aldhous, 2001). In particular, Carr (2001) emphasized that the Internet greatly reduced the number of phone calls that he has to make, as well as the amount of time he must spend in the office.

## (2) Credibility

Although cyberspace is virtually unlimited, many news sites face the economic reality that their budget is limited. Since most of the contents online are freely available, online outlets heavily depend on advertisement revenues. Keeping editorial integrity and neutrality appears to be even more difficult than in the traditional media. The relationship between advertisers and those Web sites are not necessarily healthy.

In September 1999, *The New York Times* broke a front page story about drkoop.com, pointing out that the company failed to disclose to site visitors that its eponymous chairman was paid commissions on medical products and services sold through drkoop.com, and that hospitals paid for placement on the site's list of health care resources.

Allison (2000) stated that she was often pressured by the advertisers to write stories that would lead to increases in the sales of their products. She said that she had to fight with them to maintain impartial reporting because she had to protect the brand name of Discovery Health. She also had to edit and write stories with very limited time and budget to maximize the profits. She argued that consumers' standpoints and business standpoints were different. "Consumers need high quality information, which takes time and effort in reporting and therefore tend to be expensive. On the other hand, management wants to minimize expenditure and requires short cuts in the editorial process," Allison (2000) said.

## (3) Profitability

Although the business model for online outlets used to depend on advertisement revenues, this is now coming to a dead end: it is very difficult to attract enough advertisers to make ends meet. McChesney (1999) reported that Time Warner was exultant that it had sold enough online advertising to cover even only 50 % of its online unit's budget for 1998. He further reported that some two-thirds of Americans do not want to have advertising on the Internet.

Doherty (2000) said that only one percent of Internet viewers click on banner advertisements. This means that news companies will not be able to rely on advertisements any more in running Web sites, and new business models are needed.

#### (4) Privacy

Privacy is also a concern. Medical records are among the most sensitive documents for individuals, yet health Web sites want to store them centrally, protected often only by passwords. In February 2000, the U.S. Federal Trade Commission launched an inquiry after a California foundation accused some online healthcare companies of not following their own privacy guidelines in handling user information.

Given these circumstances, the American Medical Association stated that medical information Web sites should post a privacy policy on the home page, make it easily accessible to users, and give users the opportunity to decide whether they would allow their personal information to be tracked (Chin, 2000).

#### (5) Digital Divide

The growing gap between rich and poor, evidenced in many statistics in the U.S., has posed serious social problems as well. This has led to the so-called "digital divide." Consequently, even if invaluable information were available on the Internet, one cannot benefit from it without a computer and Internet connection. Norris (1999) argued that the Internet will serve to reinforce, and perhaps even widen, the participation gap between the have and have-nots, merely reproducing or even exacerbating the gap between the information-rich and information-poor. Emery et al. (1996) also suggested that the new information machines would not benefit those in the lower segment of society who badly needed help in surviving the severity of everyday life.

### **IV. Case Study: CNN, CBS, and *The New York Times* Media Coverage of Bovine Spongiform Encephalopathy (BSE) in 2000**

In this section, I will conduct a case study on the media's coverage of

bovine spongiform encephalopathy (BSE), commonly known as “mad cow disease”, during the year 2000 as an illustration of the medical journalism scene described thus far.

I chose mad BSE as the topic for this case study because it is an emerging serious disease on the international scene. The number of human victims from this disease is reportedly 98 in the European Union as of February 2001 (The U.S. Food and Drug Administration, 2001), which is much smaller than other rampant epidemics such as AIDS, however, there are growing concerns for a number of reasons. First, scientists have argued that BSE might have infected humans, but they have not elucidated how it occurred. Second, the incubation period of BSE, both in cows and humans, takes several years. Third, BSE has been found even in the countries where the governments claimed that their beef was safe, including Japan as its first case of BSE was confirmed in September 2001. This has raised doubts about the credibility of the governments and food safety issues.

In particular, the year 2000 was a milestone in history for this fatal disease: it was identified in countries other than the U.K., including Spain, Portugal, Italy, and Germany. These governments had claimed that their beef was safe. In addition, it was also in 2000 when three supermarkets in France announced that meat from a dozen cows in a herd known to harbor an infected animal was on their shelves (*The Economist*, 2000). Consequently, there have been sharply increasing concerns about BSE since then among citizens internationally.

For this case study I selected three news organizations from daily news outlets that target the general public and not professional scientists or physicians. My objective in this case study was to analyze how mass media companies utilize the capabilities of the Internet in medical reporting. Also, I chose those news outlets because they are regarded as credible. Their reports reach decision makers and intellectuals from a wide variety of fields, and have an impact on what shapes society. Along the same line, I excluded tabloids and other news outlets mainly designed for lowbrow curiosities.

#### Methodologies:

In this case study, I conducted a content analysis by comparing how these three news organizations covered BSE in their online and offline versions in 2000. I adopted both quantitative and qualitative methods so that I could examine the material more deeply. As for quantitative techniques, Shoemaker and Reese (1991) suggested that analyzing how frequently things, people and places appear in media content allowed us to compare media content with a more valid benchmark, thereby being able to adopt a basis for news selection and

organizational logic. So I adopted this idea and I compared the following data to analyze quantitatively:

- \* The number of stories about BSE and when they were reported;
- \* Average, maximum and minimum length of the stories;
- \* The number of stories that are contributed by wire services or through cooperative arrangements; and
- \* The number of pictures, video clips, and other visual devices and what they describe.

In addition to this quantitative research, I conducted qualitative research by making observations about how these news stories are presented and what was portrayed in pictures.

### Results:

I found that CNN had the biggest difference between its traditional and online versions. The CNN Evening News, a nightly 30-minute news show, ran only two stories on mad cow disease in the year 2000. By contrast, CNN.com carried 87 stories, plus the “In-Depth Coverage” section that allows the audience to understand that issue in much greater depth. Once you access CNN.com, you can obtain quite comprehensive news and information by using hyperlinks to related sites run by government institutions and other organizations. If one did this simply by visiting each site individually, it would be a daunting task and yet one might miss some quite informative and useful sites. In other words, at CNN, the Internet served as the news “trawl net.”

By contrast, at CBS and *The New York Times*, there was no significant difference between their online and offline versions in terms of the number of stories about mad cow disease and when they were reported. It seems that CBS’s news net is designed for trapping big fish like the campaign 2000. *The New York Times* uses the same type of news net in both its traditional and online versions, at least as reflected in its coverage of BSE.

I assumed this may be partly because CNN targets an international audience and so it makes use of the capability of the Internet that can be reached from anywhere on the globe. In other words, CNN seems to use its online version of the “news net” across the seven seas. On the other hand, CBS and *The New York Times* are still basically domestic news organizations, and therefore it appears that they use the Internet simply as a showcase to draw more of an audience to their offline versions. For example, CBS’s Web site shows what they are working on for that day’s CBS Evening News, 60 Minutes, etc.

On the other hand, I was pleasantly surprised to find that the traditional media were still a gold mine of original reporting. For example, *The New York Times* ran 97 stories in its print version, which were mostly written by its own staff, whereas CNN.com heavily relied on wire services such as the Associated Press and Reuters in writing stories.

## **V. Conclusion**

I found that how the Internet changed the reporting of medical news is determined by many factors, and thus paints a complicated picture. When I prepared my research question, “How Has the Internet Changed the Reporting of Medical News?,” my hypothesis was that more news was caught by the news net of the Internet, which is more complete than that of the traditional media because of the virtually unlimited space and interactivity. In other words, if my research question were “How *Can* the Internet Change the Reporting of Medical News?,” my hypothesis would be correct, but that is not always the case for a variety of reasons, including the number of journalists, the amount of time, and organizational resources. As a result, both traditional and online media have their strengths and weaknesses even in the digital age.

As traditional and online media coexist, it seems that they can supplement each other: even if the news net of the traditional media may be old-fashioned, it sometimes traps both big and small fish of great quality if the fishing boat has an array of skilled fishermen. Also, even though the news net of online media is brand-new and equipped with the latest technologies, it does not automatically mean that they can trap fish.

I believe that the Internet holds the key to better inform people about medical information in a more effective manner, and it is still in its infancy. It is hoped that traditional and online media will supplement each other, thereby better serving the growing needs of people seeking accurate medical news and information.

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