

# Buried Alive

## The Presence of Nursing on Hospital Web Sites

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### Editor's Note

Materials documenting the review process for this article are posted at <http://www.nursing-research-editor.com>.

- ▶ **Background:** Increasingly, hospitals are using sites on the World Wide Web (Web) to market their services and products and to advertise employment opportunities. These Web sites are a potential resource for information on the hospitals' nursing care and nurses' impact on patient outcomes.
- ▶ **Objective:** The aim of this study was to explore the presence of nursing—accessible and visible data on nurses, nursing practice, or nursing care—on hospital Web sites.
- ▶ **Methods:** A random sample of 50 hospital Web sites from the *U.S. News and World Report's* 2003 list of America's best hospitals was examined. A tool developed to capture the characteristics that denote a presence of nursing was used to examine hospital Web sites.
- ▶ **Results:** All 50 sites had at least two occurrences of visible data in the form of pictures, graphics, or text that related to nurses, nursing care, or nursing practice. However, nurse-related content on these hospital Web sites was minimally to somewhat present and was frequently located on pages deep within the site.
- ▶ **Discussion:** The presence of nursing on hospital Web sites could represent the importance of nursing, nursing practice, or nursing care for patients entering hospital systems. Instead, nursing content on hospital Web sites primarily focuses on nursing employment.
- ▶ **Key Words:** communications media • hospital marketing • nursing service hospital • World Wide Web

The portrayal of nurses in traditional forms of media has been well-documented. Historically, the importance of nurses and their contributions have been underplayed in the entertainment media (Kalisch & Kalisch, 1982, 1986). References to nurses and their roles in healthcare delivery have been virtually omitted in the print media (Sigma Theta Tau International, 1997). Following

the healthcare quality initiative launched in 1996 by the Institute of Medicine, the nursing shortage and the impact on the quality of care have been emphasized through the mass communications media; consumers have been reminded that decreased levels of nurse staffing can have a negative impact on the quality of care and patient safety (Aiken, Clarke, Cheung, Sloane, & Silber, 2003; Kovner, Jones, Zhan, Gergen, & Basu, 2002; Needleman, Buerhaus, Mattke, Stewart, & Zelevinsky, 2002; Page, 2004). Although the public has been informed through the media about the problems or failures of the nursing profession, often, the many accomplishments of nurses are not shown (Gordon, 2005).

A newer type of communications media, the World Wide Web (Web) on the Internet, is popular in the United States and is used throughout the healthcare industry. For instance, Johnson & Johnson developed a Web site ([www.discovernursing.com](http://www.discovernursing.com)) as part of its advertising program, "The Campaign for Nursing's Future." The site contains in-depth information on nursing education and careers and targets the recruitment of potential candidates into the profession. Countless Web sites offer health and medical information, and healthcare consumers increasingly visit those sites (Fox & Fallows, 2003).

The popularity of the Web among healthcare consumers has not gone unnoticed by hospital marketing professionals. More and more hospitals are using the Web as a marketing tool to promote their healthcare products, services, and employment opportunities (Fell & Shepherd, 2001; Sanchez, 2000; Sanchez & Maier-Donati, 1999). Hospital Web sites have been analyzed with respect to content and purpose. For example, Sanchez and Maier-Donati (1999) derived descriptive categories of hospital Web site characteristics

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from reviews of the literature and Web sites to guide site evaluation and recommendations for site content. Zingmond, Lim, Etter, and Carlisle (2001) reported that hospitals were using the Web for marketing care that emphasized wellness, health information, and quality of services and that promoted their affiliated physicians. Other researchers included indicators of quality of care in their evaluation of Web sites (Kind, Wheeler, Robinson, & Cabana, 2004). Fell and Shepherd (2001) reported on specific online marketing activities such as employee recruitment. Although it is unknown whether a nursing product was marketed on any of the hospital Web sites in the above studies, the published reports have not mentioned nurses or nursing care.

The lack of nurse-related findings in the above reports support the observations of Gordon (2005) and Carty, Coughlin, Kasoff, and Sullivan (2000) that nurses (but not physicians) are invisible on hospital Web sites. Medicine is the focus of advertising that highlights descriptions of physician accomplishments and pictures of physicians providing care to patients. A lack of a presence of nursing on hospital Web sites may be one of the standard industry practices that undervalue nurses' knowledge and skills and that underestimate contributions by nurses to hospitals and to patient care (Weinberg, 2003).

Although the low visibility of nurses and nursing care on hospital Web sites is apparent from casual observation, quantitative data to document this invisibility and promote changes in the current focus on medical care and physicians are not found. The absence of messages about the contributions, qualifications, and accomplishments of nurses on hospital Web sites may subtly but negatively influence the public's perception of care that they can expect to receive in hospitals. Omission of positive messages about nurses and their work on hospital Web sites also hinders efforts to attract people available and qualified to work in hospitals and individuals who might want to enter the nursing profession. The most damaging effect of this omission is the subliminal message that misleads the public by failing to recognize nurses as important members of the healthcare team who are responsible for overseeing most of the care patients will receive.

The purpose of the study was to determine (a) whether there is a presence of nursing, (b) the accessibility (based on site depth of the nurse-related content) of the presence of nursing, and (c) the characteristics of the presence of nursing on U.S. hospital Web sites. Literature from healthcare marketing (Fell & Shepherd, 2001; Sanchez, 2000; Sanchez & Maier-Donati, 1999), information science (Atzeni, Merialdo, & Sindoni, 2002; Morkes & Nielsen, 1997; Pirouz, 1997), and nursing science (Kalisch & Kalisch, 1982, 1986; Sigma Theta Tau International, 1997) were used to guide the study.

## Methods

### Sample

A descriptive design was used to explore Web sites for hospitals and medical centers<sup>1</sup> ranked in 2003 by the *U.S.*

*News and World Report*. This ranking of "America's Best Hospitals" is reported annually in their print and Web media so that hospitals can use that ranking to market services. This ranking is more likely to be used by health-care consumers than, for example, the lesser known "HCIA-Sachs Institute 100 Top Hospitals" or "Solucient's 100 Top Hospitals."

The 2003 online publication of the rankings (*U.S. News and World Report*, 2003) included Web site addresses for all 203 of the ranked hospitals in 17 specialties. Seventeen of the 203 hospitals appeared on an "Honor Roll" that denoted leadership and high-quality care in six or more medical specialties. The sample ( $N = 50$ ) for this study included all 17 hospitals on the "Honor Roll" and an additional 33 selected from the remaining 186 hospitals using an electronic random number generator. A statistician was consulted to verify the number of hospitals needed and the selection process; the sample represented 25% of the total population of hospitals on the list and was deemed sufficient for the study. Each of the hospital Web sites in the sample was accessed via the link provided on the *U.S. News and World Report* Web site.

### Development and Use of the Study Checklist

The development of the Presence of Nursing: Hospital Web Site Checklist included in-depth preliminary work to identify and categorize nurse-related content on hospital Web sites. Forty hospitals ranked on the *U.S. News and World Report* Web site in 2002 were reviewed, and a list of characteristics relevant to the nursing profession was compiled. The research team, composed of members with expertise in current nursing practice, healthcare systems, healthcare informatics, and the communications media, reviewed this initial list of characteristics.

As a pilot test, the research team used the checklist to examine four hospital Web sites selected from hospitals in the 2002 list. Items to capture the geographical location and type of each hospital were added to the checklist because of this pilot session. The final list of 75 characteristics was organized into five major categories (Table 1), facilitating the flow of the review of hospital Web sites: (a) hospital Web site home page (13 characteristics); (b) nursing organization (17 characteristics); (c) nursing employment, recruitment, and retention (19 characteristics); (d) nursing education and research (18 characteristics); and (e) nursing news (8 characteristics). Each category included an *other* item to capture nurse-related characteristics not on the checklist. This categorical list was formatted in tabular form for purposes of data collection; one column was designated for placement of a checkmark to indicate that the characteristic was present on the Web site.

During the checklist development phase of the study, the research team created a scale to rate the total number of characteristics (range = 0–75) found on hospital Web sites: (a) absent = *no characteristics*, (b) minimally present = *1–15 characteristics*, (c) somewhat present = *16–37 characteristics*, (d) moderately present = *38–59 characteristics*, and (e) very present = *60–75 characteristics*.

A second scale was developed to measure the accessibility of the presence of nursing on the hospital Web sites. Accessibility was defined according to the site depth of the

<sup>1</sup>The term "hospitals" will denote both hospitals and medical centers.

**TABLE 1. Categories and Examples of Characteristics From Presence of Nursing Hospital Web Site Checklist**

Category	Characteristic
Hospital Web site home page	Direct link to nursing Web site on home page
	Nursing link under health professions
	Recognition of nursing care on hospital Web site
Nursing organization	Identification of nursing leaders or administrators
	Mission or vision of nursing department
	Nurse-to-patient ratios or nurse-staffing
Nursing employment, recruitment, and retention	List of positions
	Job descriptions
	Programs for new graduate nurses (preceptorship, nurse internship, or residency)
Nursing education and research	Descriptions of continuing education programs
	Nursing research center or department or program
	Emphasis on importance of nursing research
Nursing news	Online nursing newsletter
	Professional awards or recognition
	Educational achievements

Note. For more information about the checklist, please contact the authors.

nurse-related content and was based on the number of pages the user had to click through to get to that content (Pirouz, 1997). Because Web content placed deep within a site is considered to be invisible (Gil, n.d.), this definition of accessibility was used to determine the visibility of nurse-related content on hospital Web sites. The categories to denote accessibility and visibility of nurse-related content were the following: (a) absent = *having to click through six or more pages*, (b) minimally accessible = *having to click through five pages*, (c) somewhat accessible = *having to click through four pages*, (d) moderately accessible = *having to click through three pages*, and (e) very accessible = *having to click through one or two pages*.

Items in the investigator-developed checklist were selected based on the review of literature in healthcare marketing, information science, and nursing science. An iterative process was used in the development and pilot testing of the checklist to categorize nurse-related content

on hospital Web sites. Although no reliability and validity tests were conducted, the varied expertise of the research team members was used to verify the face validity of the checklist.

### Data Collection

Three members of the research team used the study checklist to evaluate the first five Web sites in the selected sample ( $N = 50$ ), and findings were compared to promote a consistent evaluation of sites. All discrepancies in data collection were discussed to reach 100% consensus and to establish a plan for consistently reviewing the study Web sites. The remaining 45 hospital Web sites were accessed and evaluated. The time period for the data collection was kept to a minimum to decrease the influence of any site changes and updates. The checklist data were entered into a Microsoft Excel database.

### Analysis

Data were analyzed using descriptive statistics to determine whether there was a presence of nursing on the hospital Web sites. Frequencies and other descriptive statistics were used to describe the demographic characteristics of the hospitals, the proportion of hospital Web sites with a presence of nursing, the accessibility of nursing information on the hospital Web sites, and the distribution of the individual characteristics reflecting the presence of nursing.

### Findings

All hospital Web sites in the sample ( $N = 50$ ) were available using the links on the Web version of the "America's Best Hospitals 2003" (*U.S. News and World Report*, 2003). The hospitals with these Web sites were located throughout the United States: 12 hospitals (24%) were in the North Atlantic region, 6 (12%) were in the South Atlantic region, 14 (28%) were in the North Central region, 7 (14%) were in the South Central region, and 11 (22%) were in the Pacific and Mountain region. Of 50 hospitals, 47 (94%) were academic institutions, 2 (4%) were nonacademic, and 1 was unidentifiable.

All 50 Web sites had at least two occurrences of visible data in the form of pictures, graphics, or text that related to nurses, nursing care, or nursing practice. From the possible 75 characteristics on the checklist, the number identified for the 50 sites ranged from 2 to 42 ( $M = 18.2$ ;  $SD = 10.56$ ). Twenty-three (46%) sites had minimal nursing presence (1–15 characteristics), 23 (46%) had somewhat of a presence (16–37 characteristics), 4 (8%) had a moderate presence (38–59 characteristics), and no site achieved a rating of very present (60–75 characteristics).

The rating of accessibility of the presence of nursing reflected the number of pages that the reviewer had to click through to get to a characteristic of the presence of nursing (Table 2). The presence of nursing on 11 (22%) sites was rated as invisible, and only 1 (2%) site displayed a presence that was very accessible.

Descriptive information for the categories of characteristics assessed on the 50 hospital Web sites is presented in Table 3. All but one hospital Web site had some nursing information in the nursing employment, recruitment, and

**TABLE 2. Accessibility of the Presence of Nursing on Hospital Web Sites ( $n = 50$ )**

Accessibility of Nursing Presence	<i>n</i>	%
Absent ( $\geq 6$ clicks)	11	22
Minimally accessible (5 clicks)	16	32
Somewhat accessible (4 clicks)	11	22
Moderately accessible (3 clicks)	11	22
Very accessible (1–2 clicks)	1	2

Note. The accessibility of the presence of nursing on these hospital Web sites was measured by the number of pages the user had to click through to find the nurse-related content.

retention category. The category with the fewest nurse-related characteristics present on hospital Web sites was nursing news, invisible on most 68% of sites. No themes or additions to the checklist were revealed in the items listed as *other*. Details of the characteristics within the five categories follow.

#### Hospital Web Site Home Page

A hospital home page was considered to be the Web page that served as an entry to the remaining pages on the site. Most Web sites ( $n = 44$ , 88%) had an internal search engine on the hospital home page. The search engine allowed a site visitor to look for specific information on pages throughout the site. Using *nurse* and *nursing* as key search words disclosed nurse-related content on 24 (48%) sites, but on many sites, several links had to be followed to locate nurse-related content. Magnet status, the highest level of recognition awarded by the American Nurses Credentialing Center to nursing services in the United States and international healthcare communities, was acknowledged with a Magnet symbol on only five (10%) home pages, although 15 of the 50 (30%) hospitals had been granted this prestigious award, as was noted on pages deeper in the site. Six hospital Web site home pages (12%) included testimonials from patients regarding the quality of nursing care as they perceived it. On five (10%) of the home pages, quality nursing care was identified as an important aspect of services provided.

#### Nursing Organization

Nurse leaders or administrators in the organization were identified on 10 (20%) hospital Web sites. A nursing philosophy was stated on 11 (22%) hospital Web sites, information on the missions or visions of their nursing departments was provided on 9 (18%), and a nursing slogan or phrase was displayed on 7 (14%). Although nursing departments are typically organized by specialty areas, and job vacancies may be organized and advertised accordingly, a description of specialty areas was shown on only 15 (30%) sites. At least one message from a staff nurse describing nursing practice within the organization was found on 19 (38%) sites.

#### Nursing Employment, Recruitment, and Retention

Information on how to apply for vacant positions in nursing was given on 44 (88%) sites, job vacancies with a direct link to employment opportunities for nurses were listed on 43 (86%), and a prospective nurse could complete

**TABLE 3. Descriptive Information on Nursing Presence on 50 Hospital Web Sites**

Number of Characteristics Per category	Hospital Web Sites <i>n</i> (%)	Characteristics Observed Per Category <i>M</i> ( <i>SD</i> )
Hospital Web site home page		3.34 (2.18)
0	4 (8)	
1–3	26 (52)	
4–6	15 (30)	
7–9	5 (10)	
10–12	0	
13	0	
Nursing organization		2.24 (2.44)
0	17 (34)	
1–3	17 (34)	
4–6	14 (28)	
7–9	2 (4)	
10–12	0	
13–15	0	
16–17	0	
Nursing employment, recruitment, and retention		8.22 (3.35)
0	1 (2)	
1–3	4 (8)	
4–6	10 (20)	
7–9	18 (36)	
10–12	12 (24)	
13–15	5 (10)	
16–18	0	
19	0	
Nursing education and research		3.08 (3.37)
0	14 (28)	
1–3	18 (36)	
4–6	9 (18)	
7–9	5 (10)	
10–12	4 (8)	
13–15	0	
16–18	0	
Nursing news		1.22 (2.34)
0	34 (68)	
1–3	9 (18)	
4–6	2 (4)	
7–8	5 (10)	



an online employment application on 40 (80%). Employee benefits were listed on 42 (84%) sites. Innovative scheduling options other than the traditional 8- and 12-hr shifts were described on 11 (22%) sites. Recognition of clinical expertise, such as a clinical ladders program, was present on 11 (22%) sites, and some form of nurse retention program was identified on 6 (12%) sites.

Information on a summer internship/externship program for nursing students who are about to enter their senior year of study was given on 23 (46%) sites. Details on the programs indicated that nursing students worked under the supervision of a nurse within the organization, practiced skills learned in their nursing program, learned about the real world of nursing in practice, and began an acculturation into the organization.

A flexible work schedule that allowed nursing students to attend classes and work at the hospital was described on one Web site.

### Nursing Education and Research

A link to a college or school of nursing affiliated with the organization was present on 17 (34%) sites, although a collaboration between nursing services and a college or school of nursing on projects or research that might indicate endeavors to study and improve nursing practice was identified on only 4 (8%). Nursing research endeavors had very little visibility; a nursing research center or department was listed on 10 (20%) sites, but none described research programs or initiatives.

### Nursing News

A way to communicate information on the achievements of nurses, such as an online nursing newsletter or a list of current nurse-related events, was present on only six (12%) of the sites. Professional awards were published on 12 (24%) sites, and educational achievements were noted on 6 (12%) sites.

### Limitations

One limitation is that hospital Web sites not on the list of "America's Best Hospitals 2003" (*U.S. News and World Report*, 2003) or not in the sample used from this list could produce different results. A potential bias in sample selection exists because 94% of the hospitals were academic health centers. The instrument to evaluate the presence of nursing on the hospital Web sites was developed specifically for this project and may not contain an exhaustive list of characteristics. The data also were collected and analyzed primarily by a single investigator and are thus subject to bias. However, attempts were made to overcome this limitation by defining the characteristics clearly, using specific criteria for evaluation and comparing the reviews of three researchers on five randomly selected sites. As with any research, potential bias exists when subjective data are interpreted.

### Discussion

In this study, hospital Web sites varied greatly in content and appearance, as did the presence of nursing on those

sites. Although all Web sites studied had at least two characteristics denoting a presence of nursing, the nurse-related content was not located easily. This result is consistent with the Woodhull study (Sigma Theta Tau, 1997) that reported minimal nurse-related content in print publications. Although perhaps unintentional, the unstated message revealed by findings in this study of hospital Web sites is that the nursing profession is not important, nurses do not play an important role in the delivery of services, and in turn, the nursing profession does not warrant space on hospital Web sites.

Further data analysis of this sample of hospital Web sites revealed that the presence of nursing, often located several pages deep within the site, is somewhat difficult to access and may be invisible to site visitors. Content located deep within a Web site is deemed invisible (Gil, n.d.) and is not indexed in the major external search engines (Spink, Jansen, Wolfram, & Saracevic, 2002). Thus, Web users who desire specific information on nursing services in hospitals may have minimal search yields and have little patience with searching the Web further.

Visitors to hospital Web site home pages, both prospective patients and potential nurse applicants, may have difficulty locating the information they seek. Users of the Web are known to scan pages, pick out individual words, or conduct a keyword search (Morkes & Nielsen, 1997) to fulfill their information need. Users move on to another site if they do not retrieve what they want efficiently. Thus, the empty search results on the terms *nurse* or *nursing* that were evident on more than half of the hospital Web sites in this sample could be a barrier to locating relevant information.

The primary reason patients are admitted to healthcare facilities is to receive care that they cannot receive elsewhere. Given that nurses are generally the largest group of healthcare professionals within most hospitals and they provide hands-on care to patients during most hospital admissions (Jones & Lusk, 2002), it follows that prospective patients may seek specific information on nursing care to better inform decisions on care delivery. The small number of hospital Web sites in the current study that described characteristics of the nursing organization reveals that prospective patients cannot obtain information on nurse leaders, areas with specialty nurses, nurse-to-patient ratios, staff skill mix, or advanced practice nurses. This lack of information perpetuates the view of Gordon (2005) that the public has a poor understanding of the complexity of nursing care and its influence on patient outcomes and further supports that information that would enlighten the public on the crucial service it receives from nurses is basically absent from information on hospital Web sites (Gordon).

Interestingly, today's healthcare consumers are becoming more selective in choosing a hospital and are seeking information on the quality of agencies and care providers. Yet, only one third of the 15 hospitals in this sample that had achieved the Magnet status for excellence in nursing elected to place the Magnet symbol on the hospital home page. If information such as Magnet status is buried within a Web site, site visitors may not be aware of this recognition of nursing excellence.

All sites had some nurse recruitment content, and by far, the one category where hospitals excelled was by providing information on nurse employment opportunities. Surprisingly, only 27 (54%) sites provided job descriptions with information on requirements for education, experience, and skills, which may communicate that nurses are interchangeable at the agency. Less information was provided on innovative retention strategies. The omission of detailed employment information is a missed opportunity for hospitals to display information that would attract nurses to the agency and perhaps attract individuals into the profession.

Exploration of characteristics of nursing education and research revealed that very few hospital Web sites contained any information on collaborative activities between nursing services in the agencies and schools or colleges of nursing. Such relationships may attract nurses who wish to advance their formal education.

Also, very few sites showcased the organization's nurses. For example, in very few instances were nurses recognized for professional awards or educational achievements. Inclusion of this information would inform nurses about the successes of others, make them feel valuable when their achievements are acknowledged publicly, and communicate to others outside the organization that nurses are supported and valued.

The overall finding that hospital Web sites lack a strong presence of nursing is consistent with the literature (Gordon, 2005; Sigma Theta Tau, 1997). Hospital marketers have not focused on nurses or nursing care on Web sites but have focused on medicine and employee recruitment (Fell & Shepherd, 2001; Sanchez, 2000; Zingmond et al., 2001). Hospital marketers could collaborate with nurses to ensure the presence of nursing on the Web sites.

Thus, implications for practice center on the involvement of nurses on hospital committees charged with Web site development. Similarly, nurse leaders should collaborate with hospital marketers and Web site developers to ensure that sites promote the nursing profession. Examples of information on nursing on hospital Web sites that should be included are the role of nurses in quality improvement initiatives, specialty areas of care and nurse-patient ratios in these areas, achievements of nursing staff, results of nursing research, and collaborations between nurses and professionals from other disciplines as team members in care delivery. Putting this information on the Web will communicate the important role that nurses play in care delivery, that nurses are valued, and that they are essential members of the healthcare team.

Although nurse-related characteristics were used to denote the presence of nursing in this study, the characteristics that are appropriate and beneficial on hospital Web sites are largely unknown. Further study is needed to determine the important characteristics that should be present on hospital Web sites, including those that are relevant to nursing. This might involve an examination of the checklist developed for this study to verify validity, ensuring that all relevant characteristics and information are captured. In addition, research could show whether the five categories of characteristics and individual characteristics of presence should be weighted in terms of the

importance or quality. Lastly, studies with larger and more current samples would contribute to advancing our knowledge of the evolving presence of nursing found in this newer form of communication medium by U.S. hospitals.

In keeping with previous research, the lack of visible data in the form of pictures, graphics, or text related to nurses, nursing care, or nursing practice in all communications media must be recognized as a serious concern (Sigma Theta Tau International, 1997). The professional standards upon which nurses base their practice, instead of being advertised, remain unstated, which contributes to the public's lack of comprehension of nurses. This omission sends a message to the public that nurses are not valued as critical members of the healthcare team or as major contributors to hospital services. Hospital Web sites can be used to inform the public of the important role that nurses play in patient outcomes and the role that their collaboration with other disciplines plays to make comprehensive care possible. Because of publicizing the roles and contributions of nurses on hospital Web sites, the nursing profession could attain a visible presence. ▀

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