

ONLINE DIALOGIC FEATURES OF HOSPITAL WEB SITES:
A QUANTITATIVE CONTENT ANALYSIS

By

JENNIFER L. HAHN

A THESIS PRESENTED TO THE GRADUATE SCHOOL
OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS IN MASS COMMUNICATION

UNIVERSITY OF FLORIDA

2010

© 2010 Jennifer L. Hahn

To my family

ACKNOWLEDGMENTS

I would first like to thank my thesis advisor, Dr. Mary Ann Ferguson, for her attention, insight, and support during the research and preparation of this thesis. I would also like to extend a special thanks to my committee members, Dr. Linda Hon and Dr. Moon Lee for their constructive comments and suggestions. My deepest gratitude also goes out to Jody Hedge who always has the right answers to any problem. Lastly, I offer my regards to all those who supported me in any respect during the completion of this thesis, including my family and friends who have been with me throughout It all.

TABLE OF CONTENTS

	<u>page</u>
ACKNOWLEDGMENTS.....	4
LIST OF TABLES.....	8
LIST OF FIGURES.....	10
ABSTRACT	11
CHAPTER	
1 INTRODUCTION	13
1 LITERATURE REVIEW	19
Online Health Communication	19
Quality of Information	20
Hospital Web Sites	21
Organizational-Public Relationships	22
Relationship Building Strategies.....	23
Organizational-Public Relationship Outcomes	24
Implications of Relationship Building on Corporate Reputation.....	26
Two-Way Symmetrical Communication	28
Dialogic Communication	29
Dialogic Features	30
Dialogic Principles	30
Dialogic loop	30
Usefulness of information.....	31
Generation of return visits.....	32
Ease of interface.....	33
Conservation of visitors.....	33
Web 2.0	33
Prior Research.....	35
Research Questions	36
3 METHODOLOGY	39
Sample.....	40
Framework.....	42
Intercoder Reliability	44
Data Analysis.....	47
4 RESULTS	48
Sample Profile	48

Frequencies	49
Dialogic Factors	52
Dialogic Loop.....	53
Usefulness of Information for Patients.....	53
Usefulness of Information for the General Public	54
Generation of Return Visits	54
Ease of Interface	55
Conservation of Visitors.....	55
Web 2.0	56
Correlations	56
Regressions.....	58
Overall Hospital Ratings	58
Communication Scores	59
Doctor communication	60
Nurse communication	62
Discharge information	65
Attentiveness of hospital staff	66
Communication about medications	70
5 DISCUSSION	82
Dialogic Features	82
Ease of Interface	82
Usefulness of Information for the General Public	83
Usefulness of Information for Patients.....	84
Conservation of Visitors.....	87
Generation of Return Visits	88
Dialogic Loop.....	91
Web 2.0	92
Hospital Size	93
Organizational Success	94
Overall Patient Ratings.....	94
Communication Scores	95
Doctor communication	95
Nurse communication	96
Discharge information	97
Attentiveness of hospital staff	97
Communication about medications	98
General Discussion.....	99
Usefulness of Information.....	99
Generation of Return Visits	100
Web 2.0	100
Dialogic Loop.....	101
6 BENCHMARK ANALYSIS	102
Cleveland Clinic Foundation	102

Dialogic Loop.....	102
Usefulness of Information for Patients.....	103
Usefulness of Information for the General Public.....	105
Generation of Return Visits.....	105
Ease of Interface.....	106
Conservation of Visitors.....	106
Web 2.0.....	107
Mayo Clinic.....	107
Dialogic Loop.....	107
Usefulness of Information for Patients.....	108
Usefulness of Information for the General Public.....	109
Generation of Return Visits.....	110
Ease of Interface.....	111
Conservation of Visitors.....	111
Web 2.0.....	112
Johns Hopkins Hospital.....	113
Dialogic Loop.....	113
Usefulness of Information for Patients.....	113
Usefulness of Information for the General Public.....	114
Generation of Return Visits.....	115
Ease of Interface.....	116
Conservation of Visitors.....	116
Web 2.0.....	116
New England Baptist Hospital.....	117
Dialogic Loop.....	117
Usefulness of Information for Patients.....	117
Usefulness of Information for the General Public.....	118
Generation of Return Visits.....	119
Ease of Interface.....	119
Conservation of Visitors.....	119
Web 2.0.....	120
7 CONCLUSION.....	121
Closing Remarks.....	121
Limitations.....	123
Opportunities for Future Research.....	124
APPENDIX	
A SAMPLE.....	126
B CODE BOOK.....	129
LIST OF REFERENCES.....	152
BIOGRAPHICAL SKETCH.....	159

LIST OF TABLES

<u>Table</u>	<u>page</u>
4-1 Frequencies of dialogic features on hospital Web sites	74
4-1 Continued.....	75
4-2 Factor loadings based on exploratory factor analysis with oblimin rotation for 4 items from dialogic loop dimension.....	75
4-3 Factor loadings based on exploratory factor analysis with oblimin rotation for 8 items from usefulness of information for patients dimension	76
4-4 Factor loadings based on exploratory factor analysis with oblimin rotation for 9 items from usefulness of information for the general public dimension	76
4-5 Factor loadings based on exploratory factor analysis with oblimin rotation for 6 items from generation of return visits dimension	76
4-6 Factor loadings based on exploratory factor analysis with oblimin rotation for 2 items from ease of interface dimension	77
4-7 Factor loadings based on exploratory factor analysis with oblimin rotation for 3 items from conservation of visitors dimension	77
4-8 Factor loadings based on exploratory factor analysis with oblimin rotation for 7 items from Web 2.0 dimension	77
4-9 Correlation between dialogic factor groups to test for multicollinearity.....	78
4-10 Beta coefficients of predictor variables based on 12 individual hierarchical regression analyses for predicting overall patient rating of hospital.....	79
4-11 Beta coefficients of predictor variables based on 12 individual hierarchical regression analyses for predicting doctor communication scores.....	79
4-12 Beta coefficients of predictor variables based on 12 individual hierarchical regression analyses for predicting nurse communication scores.....	80
4-13 Beta coefficients of predictor variables based on 12 individual hierarchical regression analyses for predicting discharge information scores	80
4-14 Beta coefficients of predictor variables based on 12 individual hierarchical regression analyses for predicting attentiveness of hospital staff scores	81
4-15 Beta coefficients of predictor variables based on 12 individual hierarchical regression analyses for predicting communication about medications scores ...	81

A-1 Sample of 105 hospitals from *Consumer Reports'* Hospital Patient Rating list.... 126

LIST OF FIGURES

<u>Figure</u>	<u>page</u>
1-1 Graphic representation of basic assumptions underlying relationship between dialogic communication, organizational-public relationships, and reputation.....	18

Abstract of Thesis Presented to the Graduate School
of the University of Florida in Partial Fulfillment of the
Requirements for the Degree of Master of Arts in Mass Communication

ONLINE DIALOGIC FEATURES OF HOSPITAL WEB SITES:
A QUANTITATIVE CONTENT ANALYSIS

By

Jennifer L. Hahn

May 2010

Chair: Mary Ann Ferguson
Major: Mass Communication

Some theorists have suggested that the relational potential of Web-based communication in public relations can be observed in the design features of Web pages. Specifically, dialogic communication created by the strategic use of the Internet is one way for organizations to build relationships with publics.

This study builds upon previous research on dialogic communication and extends it to the healthcare sector. Specifically, this study sought to examine what types of dialogic tools were being used on hospitals' Web sites to potentially create, foster and maintain dialogue with target publics. Moreover, this study sought to explore the relationship between dialogic tool use and hospital size, as well as the relationship between dialogic tool use and organizational success. In order to address these questions, 105 hospital Web sites from *Consumer Reports'* Hospital Patient Rating list were content analyzed for 53 features adapted from Kent and Taylor's dialogic principles.

This study found that hospitals still have room for improvement when it comes to developing dialogic communication online, for while ease of interface, usefulness of information, and conservation of visitors features were frequently present on hospital

Web sites, generation of return visits, dialogic loop and Web 2.0 features were lacking. This study also found that hospital size was an indicator of dialogic tools use, with larger hospitals tending to have more dialogic features present on their Web sites. This shows that while the Internet allows both large and small hospitals to communicate with various publics, larger organizations tend to provide more dialogic communication opportunities.

Dialogic tools were also found to be an indicator of organizational success for hospitals, namely in terms of predicting overall patient ratings, doctor communication scores, nurse communication scores, and discharge information scores. Specifically dialogic tools associated with the usefulness of information, generation of return visits, Web 2.0 and dialogic loop dimensions were found to contribute significantly to these correlations. These findings imply that online dialogic communication strategies can play an important role in organizational success. Hospitals should therefore strive to use their Web sites as a means of establishing two-way communication and ultimately organizational-public relationships.

A post-hoc study was conducted to explore effective dialogic communication practices on hospital Web sites. Four hospitals, with high dialogic tool use and high organizational success, were identified as ideal candidates for benchmarking. A narrative description of the dialogic tool use on these four hospitals' Web sites is provided. These descriptions may serve as benchmarks for effective dialogic communication practices on hospital Web sites.

CHAPTER 1 INTRODUCTION

A growing number of modern consumers want to be knowledgeable about their healthcare and want to be more aware of health problems and treatment alternatives (Sanchez & Fuentes, 2002). As a result, these consumers are turning to the Internet where access to health-related information has increased significantly over the past decade (Hanif et al., 2007). In 2008 alone, more than 154 million Americans went online to search for health information (Harris Interactive, 2009) on over 11 million health-related Web sites (Hanif et al., 2007).

These high-tech consumers not only have access to a plethora of online healthcare information, they also expect to receive adequate information, demand to participate in healthcare decisions that directly affect them, and insist that the healthcare they receive be of the highest possible quality (Thomas, 2005). If these elements are not met, today's consumers are willing, if necessary, to pay extra for the best (Zuckerman & Coile, 2004). This means that in today's healthcare world, it is about the customer's experience, the kind of service they receive, the type of interaction they have with the provider, the way they feel, and ultimately what their outcome is. Scholars consequently contend that the use of computer-based systems, such as the Internet, represent a logical first step in the transition from "out-bound driven communication" to the more "interactive, consumer-oriented, and behavior-oriented approaches of the 21st century" (Holm, 2006, p.27).

Because the Internet surpasses other media in its ability to be "consumer centric" (Anderson, Rainey, & Eysenbach, 2003), emphasis has been placed on the need for healthcare providers to turn towards the Internet as a way in which healthcare services

may be delivered to fulfill citizen's demands (Sanchez & Fuentes, 2002). Consequently, healthcare providers that maintain Web sites furnish their patients with "useful virtual spaces where [they] can gain health and medical knowledge as well as locate healthcare professionals" (Gallant, Irizarry, & Kreps, 2007, p.8). Providing these health resources online can be seen not only as a "natural extension" of services to patients and consumers (Fulda & Kwasik, 2004, p. 374), but as an opportunity to enhance the relationship between the patient and the healthcare provider (Harris Interactive, 2009). As it were, building and enhancing relationships with key constituencies has come to be viewed by many scholars as the fundamental goal of public relations (Hon & Grunig, 1999). One way healthcare providers can build long-term relationships with their key publics is to develop dialogic communication through their Web sites (Kent & Taylor, 1998).

Dialogic communication emerged as an aspect of relationship management whereby both organizations and publics have the opportunity to create and share messages through two-way communication (Bailey, 2007). Engaging in a dialogic approach requires organizations to actively solicit information from key stakeholders and listen to, process, and respond to those messages in order to determine the common interests and shared goals that exist between both parties (Bruning, Castle, & Schrepfer, 2004). By using Web sites as a means of establishing two-way, dialogic communication, an organization (such as a hospital) is "likely to increase trust that it is acting in the interests of others and thereby foster their [consumers] willingness to act in the interest of the organization" (Heath & Bryant, 1992, p. 263). In that sense, Web sites that embrace these principles can have significant effects on relationship building

between organizations and publics. However, as Kent and Taylor (1998) are quick to point out, simply using the Internet does not ensure that good relationships will be developed between organizations and their publics; rather, it is how the technology is used that influences organization-public relationships (p. 324).

Some theorists have suggested that the relational potential of Web-based communication in public relations can be observed in the design features of Web pages (Kelleher, 2009). Kent and Taylor (1998) proposed five dialogic principles (i.e. features), which guide organizations interested in creating, two-way dialogic relationships with publics through the Web. These principles include: Dialogic Loops, which “allow publics to query organizations and offer organizations the opportunity to respond to questions”; Useful Information, which “suggests that organizations provide information of general value to all publics”; Generation of Return Visits, which “explores ways to create the foundation for long-lasting relationships by offering features that generate return visits”; Ease of the Interface, which “involves the intuitiveness and/or ease of the site’s interface”; and Conservation of Visitors, which “maintains that Web sites should offer features and links that value and conserve visit time” (McAllister-Spooner, 2009, para 4). These principles, if used effectively it is argued, can help practitioners create and maintain sites that “enhance interest in their organization, contribute to public dialogue, and increase public knowledge and awareness” (Kent & Taylor, 1998, p. 326) .

With increasing interest in the concept of dialogue as an online organization-public relationship building tool, it is important to investigate its theoretical foundations and significance in various organization types. Previous studies have considered the use of the aforementioned dialogic principles in a number of different organizations, including:

activist organizations (Kent, Taylor, & White, 2003; Taylor, Kent, & White, 2001); colleges and universities (Gordon & Berhow, 2009); congressional Web sites (Taylor & Kent, 2004); and Fortune 500 companies (Park & Reber, 2008). However, little to no research has been conducted on the dialogic principles as applied to hospital Web sites.

Given that today's healthcare consumers are looking for personalized information that fits their expectations and needs, it is critical that healthcare providers – such as hospitals – begin to establish a dialogue with their stakeholders. By communicating with various stakeholders, hospitals are more likely to develop strong organizational-public relationships and are more likely to achieve their goals because they tend to choose goals that are “valued both by management and by strategic constituencies” (Hon & Grunig, 1999, p. 8). Thus, it is important to know how hospitals are currently using online dialogic tools as a means of establishing two-way communication and ultimately organizational-public relationships. Figure 1-1 highlights, in graphic form, the basic assumptions made in this study underlying the relationship between dialogic communication, organizational-public relationship, and reputation.

In order to address this gap in academic research, a quantitative content analysis of 105 hospital Web sites, collected from *Consumer Reports'* Hospital Patient Ratings database, was conducted to examine what dialogic tools are being used by hospitals to potentially create, foster and maintain dialogue with their target publics. Specifically, this study asks what types of dialogic features are being used on hospital Web sites to foster two-way dialogue with key stakeholders, what relationship there is between

dialogic tool use and hospital size, and what relationship there is between dialogic tool use and organizational success.

To achieve this purpose, this study adapted the framework posited by Taylor et al. (2001), which analyzes Kent and Taylor's (1998) five principles of building public relationships in terms of activist organizations. Specifically, the framework was modified to study hospital Web sites. Moreover, this study expanded Kent and Taylor's (1998) framework to include Web 2.0 services, such as blogs and social media. Thus this study is justifiable, since it seeks to discover how hospitals are using the Web as a communication tool.

The remainder of this thesis will be designed as follows. To begin, a review of literature will include the following sections: online health communication and its impact on healthcare providers, organizational-public relationships as the fundamental goal of public relations, two-way symmetrical communication as key factors in the relational process, and dialogic communication. A description of the study's methodological procedures, including research design, sample, framework and intercoder reliability, will be incorporated, along with a presentation of results. Finally, the thesis will present a benchmark analysis and discuss conclusions, limitations and implications for future research.

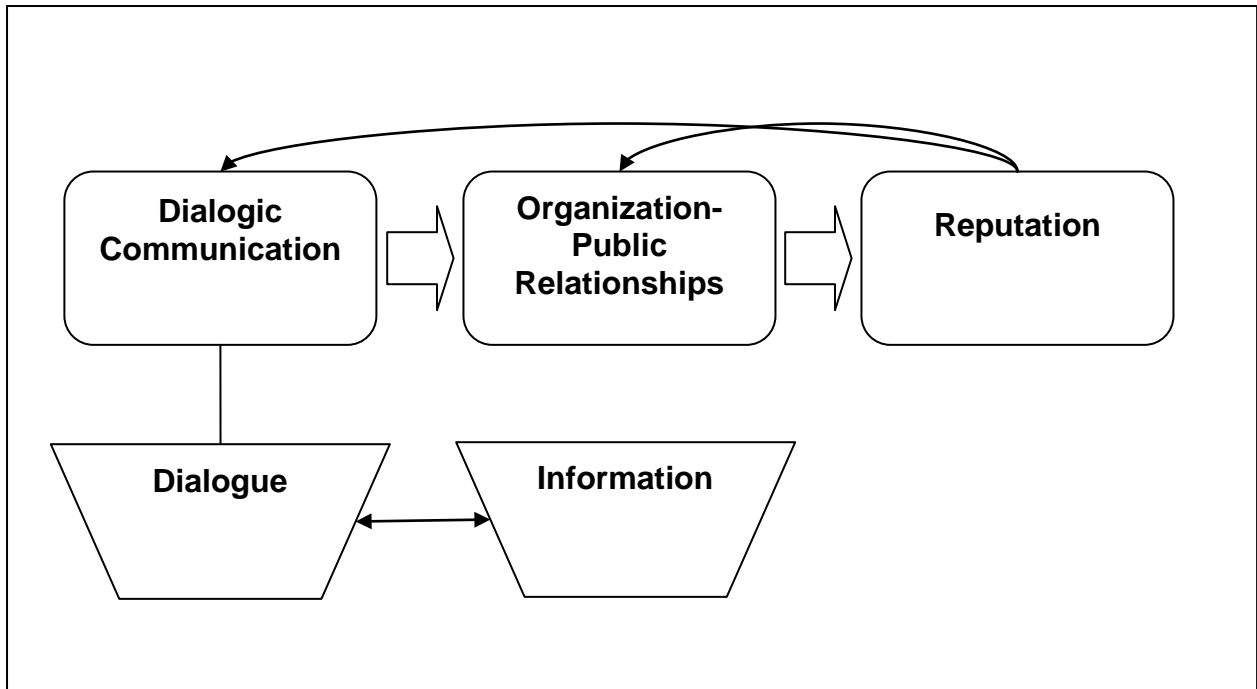


Figure 1-1. Graphic representation of basic assumptions underlying relationship between dialogic communication, organizational-public relationships, and reputation.

CHAPTER 2 LITERATURE REVIEW

Online Health Communication

The World Wide Web, also known as the Internet, is a communication tool that enables cheap, fast, and effective communication between a firm and its various publics (Holm, 2006). The Internet is also an information tool that has the ability to act as a global medium which “transcends geography and operates across multiple cultures and languages” (Hanif et al., 2007, p. 374). In this manner, the Internet has become a medium which has the capability to integrate various modes of communication and different forms of content (Anderson et al., 2003).

With more than 154 million Americans going online to search for health information (Harris Interactive, 2009), the Internet is reshaping the way in which health care providers are organizing and delivering information (Anderson et al., 2003). The Internet is being used by health care providers in a number of ways: to provide information about health and illness, health education, chats and debates – among patients, professionals, or both – and to spread medical news. Health care centers are also using Web sites to provide information about the services they offer, how to access them, working hours, etc. (Mira, Llinás, Tomás, & Pérez-Jover, 2006). Accordingly, Silberg (1997) contends that the Internet offers health care providers “seemingly endless opportunities to inform, teach, and connect professionals and patients alike” (as cited in Cline & Haynes, 2001, p. 675).

Concurrently, by giving patients the opportunity to access information which was once limited to experts and private institutions (Hanif et al., 2007), the Internet is revolutionizing the way patients manage their health. In particular, patients have become

active participants in the decisions affecting their health status (Anderson et al., 2003). With a growing number of modern consumers wanting to be knowledgeable about their health care and more aware of health problems and treatment alternatives (Sanchez & Fuentes, 2002), the focus of medical issues online has moved from simply curing diseases to preventing them (Anderson et al., 2003).

Quality of Information

As more patients use the internet to keep up-to-date on health-related topics and treatment alternatives (von Knoop, Lovich, Silverstein, & Tutty, 2003), health professionals worry about the quality of information posted online (Anderson et al., 2003). Research suggests that there may be reason to worry since inaccurate, misleading, or fringe medical advice is prevalent (Cline & Haynes, 2001). A systematic review of 79 studies on the accuracy of online health information found that 70% of articles concluded that quality is a problem on the Web, while only 22% and 9% came to neutral or positive conclusions, respectively (Eysenbach, Powell, Kuss, & Sa, 2002).

At the same time, consumers are also anxious about the quality of the health information they find online. According to a 1999 survey conducted by Health on the Net Foundations, 71% of respondents indicated that the quality of medical/health information on the Internet needs to improve (Health on the Net Foundation, 2009; Health on the Net Foundation, 2009). Nevertheless, a recent survey found that 42% of all adults state that they or someone they know has been helped by following medical advice or health information located online (Pew Internet and American Life Project, 2009). This figure is significantly higher than the 25% of adults who concurred with this statement in 2006 (Pew Internet and American Life Project, 2009).

So while it appears that “a large and growing majority . . .of Internet users are concerned about the quality of online health information” (Cline & Haynes, 2001, p. 679), this has not prevented them from using the “facts” they find on the Web to self-diagnose, treat, and decide whether they will seek medical attention for at least some health issues. It has been suggested that health care providers must now turn to the Internet, to meet the public’s growing demand for quality health-related information and services (Sanchez & Fuentes, 2002).

Hospital Web Sites

Like many other industries, health care began developing its first Web sites in the mid-1990s. The majority of hospital sites were fairly basic, typically including lots of static information, simple interactive tools, a list of hospital services and a physician directory (Romano, 2003). More recently, basic online “brochure-ware” has become obsolete as some hospitals are transforming their Web sites into “brand-extending, loyalty-building online health destinations” (Bishop, Holmes, & McEnroe, 2006, p. 3).

This rapid succession of Web site development can be attributed, in part, to the individualization of consumption patterns, which scholars say have revolutionized communications (Holm, 2006). Moreover, because consumer interest and demand has increased, competition among health care providers has increased as well (Vitberg, 1996). Now small organizations and large organizations alike can use the internet to promote their mission, products, and services (Taylor & Kent, 2004). Subsequently, hospitals must be aware that they are no longer just in the business of providing information on the Web, “they’re in the business of acquiring patients on the Web” (Romano, 2003, p.25).

Therefore, to directly affect hospital admission rates, market share, and create competitive advantage, a hospital's Web site should address customer needs in a special or unique way so as to enhance the overall health care experience of the consumer (Petromilli & Michalczyk, 1999). According to Petromilli and Michalczyk (1999), these tactics will not only serve to separate a hospital from other providers, but they will enhance the value of medical services as perceived by consumers (p. 7).

Consequently, hospitals that maintain Web sites furnish their patients with "useful virtual spaces where [they] can gain health and medical knowledge as well as locate healthcare professionals" (Gallant et al., 2007, p.8). Providing these health resources can be viewed not only as a "natural extension" of services to patients and consumers (Fulda & Kwasik, 2004, p. 374) but as an opportunity to enhance the relationship between the patient and the health care provider as well (Harris Interactive, 2009).

Organizational-Public Relationships

With the rise of Internet use, relationship building has become a mainstream subject in public relations research. Specifically, scholars have argued that public relations should be conceptualized as a process of relationship management in which mutual interests, values and benefits between a client-organization and its publics are identified (Hutton, 1999). From this perspective, the fundamental goal of public relations is to "build and then enhance on-going and long-term relationships with an organization's key constituencies" (Hon & Grunig, 1999, p.2). As a result, literature abounds on the subject of relationship management and provides a good basis for understanding the relationship-building tactics of organizations (see Bruning & Ledingham, 1999; Ferguson, 1984; Hon & Grunig, 1999; Huang, 2001; Ledingham, 2003).

Relationship Building Strategies

While most relationship management research deals with how to communicate with publics in order to maintain positive relationships, it has been found that some strategies are more effective than others in producing positive relational outcomes (Hon & Grunig, 1999, p. 13). Hon and Grunig (1999) systematically analyzed the various strategies proposed by researchers and determined the most effective strategies organizations might utilize to build relationships with key publics. These strategies include access, positivity, openness, assurances, networking and sharing of tasks.

Access involves both parties (i.e., members of publics and public relations representatives) being open about organizational decision-making processes. This includes “answer[ing] calls or read[ing] letters or email messages” from each other and being willing to go to the other party when there are complaints or queries, “rather than taking negative action through a third party” (Hon & Grunig, 1999, p. 14). Positivity, on the other hand, involves “anything the organization or public does to make the relationship more enjoyable for both parties involved,” be it building a Web site, writing a newsletter, etc. (Hon & Grunig, 1999, p. 14).

Openness is described by Hon and Grunig (1999) as the sharing of “thoughts and feelings among parties involved” (p. 14). In other words, openness requires that both members of publics and public relations representatives disclose information about what is being done. At the same time, assurances involve letting the other party know “their concerns are legitimate”; this is done by demonstrating that both parties are committed to maintaining the relationship (Hon & Grunig, 1999, p. 15).

Networking and sharing of tasks are the final two strategies Hon and Grunig (1999) suggested organizations utilize to build relationships with key publics.

Networking entails an organization “building networks or coalitions with the same groups their publics do, such as environmentalists, unions or community groups,” whereas sharing of tasks involves “organizations’ and publics’ sharing in solving joint or separate problems” (Hon & Grunig, 1999, p. 15)

While identifying communication strategies, such as the ones mentioned above, is an important part of building organizational-public relationships, the most meaningful evaluation of relationships involves measuring the outcomes of relationships (Hon & Grunig, 1999). Several scholars have developed scales to define and measure the outcomes of organizations’ relationship building tactics (see Bruning & Galloway, 2003; Hon & Grunig, 1999; Huang, 1997; Huang, 2001; Yang, 2007). However, for the purpose of this study we will look at the PR Relationship Measurement Scale proposed by Hon and Grunig (1999).

Organizational-Public Relationship Outcomes

Building on the works of Huang (1997) and Canary and Stafford (1992), Hon and Grunig (1999) developed the PR Relationship Measurement Scale, which identified four distinct relational outcomes. These relational outcomes were control mutuality, satisfaction, commitment, and trust. In this typology, control mutuality focuses on the power balance of relationships by looking at the “degree to which parties agree on who has rightful power to influence one another” (Hon & Grunig, 1999, p. 19). While imbalance is natural in organization-public relationships, Hon and Grunig (1999) contend that the most stable and positive relationships occur when organizations and publics have at least some degree of control over each other (p. 19).

Defined as “the extent to which one party feels favorable toward the other,” satisfaction occurs when positive expectations about the relationship are reinforced

(Hon & Grunig, 1999, p. 20). As a result, satisfaction is largely based on the degree to which the benefits received from a relationship seem “right relative to the costs” (Kelleher, 2009, p. 178). In other words, “when one party believes that the other party’s relationship maintenance behaviors are positive,” satisfaction can occur (Hon & Grunig, 1999, p. 20).

Similar to satisfaction, commitment is described as “the extent to which one party believes and feels that the relationship is worth spending energy to maintain and promote” (Hon & Grunig, 1999, p. 20). Two dimensions of commitment were identified: continuance commitment and affective commitment. Continuance commitment refers to a certain line of action, while affective commitment is more of an emotional orientation (Hon & Grunig, 1999, p. 20).

When it comes to Hon and Grunig’s (1999) final outcome dimension of relationships, some scholars dispute whether people can actually develop trust in an organization. However, following Morgan and Hunt’s (1994) research, trust from an organizational perspective can be viewed as the collective judgment of one group that another group will be “honest, meet commitments, and will not take advantage of others” (as cited in Rawlins, 2007, p.427). Expanding this definition, Hon and Grunig (1999) went on to identify three dimensions of trust. These dimensions include, integrity, or the “belief that an organization is fair and just”; dependability, or the “belief an organization will do what it says it will do”; and competence, the “belief that the organization has the ability to do what it says it will do” (p. 19). It is believed that the presence of these factors in an organizations’ public relations strategy will increase the likelihood of building a positive reputation (Hon & Grunig, 1999).

Implications of Relationship Building on Corporate Reputation

Several researchers suggested the effect of organization-public relational outcomes, particularly trust (Hon & Grunig, 1999), on organizational reputation (see C. J. Fombrun, 1996; Yang, 2007). Fombrun (1996), in particular, emphasized the impact and importance of organization-public relationships on corporate reputations: “To acquire a reputation that is positive, enduring, and resilient requires managers to invest heavily in building and maintaining good relationships with their company’s constituents” (p. 57).

As it were, corporate reputation develops from a company’s uniqueness and from identity-shaping practices maintained over time that lead constituents to perceive a company as credible, reliable, and responsible (Fombrun, 1996). Specifically, Fombrun defines corporate reputation as “the net perceptions of an organization’s ability to meet the expectations of all its stake holders” (as cited in Omar & Williams, 2006, p. 268). As such, an exceptional reputation will not only distinguish a company from its competitors, it will lead customers to assume that the products or services offered are of a higher quality, it will attract better applicants to capital markets, it will generate word-of-mouth endorsements which will act as a barrier against imitation, and it will ultimately help build consumer trust (Omar & Williams, 2006).

The importance of reputation is evidenced by the large number of prominent surveys and ranks which seek to identify the best and the worst aspects of organizations. Indeed, these surveys and ranks, which include Fortune’s “Most Admired” list and *BusinessWeek* and *Interbrand’s* “Best Global Brand” ranking, show that there is a relationship between the efforts put into company relationship building activities and rankings of organizations (Yang, 2007).

In particular, an empirical study lead by Fombrun and Rindova (1998) found that those companies with a more positive reputation appeared to project their core mission and identity in a more systematic and consistent fashion – across all forms of marketing communication – than companies with lower reputational rankings. Furthermore, these companies tried to impart significantly more information, not only about their products or services, but also about a range of issues relating to their operations, identity, and history (Omar & Williams, 2006). Additionally, a recent study conducted by Yang (2007), found that positive organization-public relational outcomes are associated with a favorable organizational reputation. The bottom line, says Fombrun and Shanley (1990), “is that good reputations are valuable strategic assets that help strengthen corporate profitability” (p. 233). A good reputation can therefore be a decisive source of competitive advantage in markets if used in line with organizational-public relationship building strategies.

While many scholars and practitioners have come to adopt these strategies in order to establish positive relationships and reputations, the advancement of Web-based technology has brought new and revolutionary ways in which these relationships can be developed and maintained (Wright & Hinson, 2009). Namely, the two-way, interactive nature of the Web has become a key factor in the relational process and ultimately leads to relational outcomes online (as cited in Kelleher, 2009). As such, the two-way symmetrical model of communication is thought to be a useful framework in which to study public relations in an interactive, new media context (Naude, Froneman, & Atwood, 2004).

Two-Way Symmetrical Communication

In the past, traditional public relations focused mainly on one-way asymmetrical communication in which an organization would set an agenda and received little to no direct feedback from stakeholders (Schultz, 2000). Because this process was designed to measure the effects of communication on publics, only the organizations benefited (Hon & Grunig, 1999). In the long-term, this one-way asymmetrical model of communication did little to facilitate relationships between organizations and their publics because it failed to take into consideration that both the organization and its stakeholders may have to compromise and collaborate with each other in order to achieve certain goals (Grunig, 1997).

The Internet as an interactive medium gave practitioners the ability to design relationship tactics which benefited both the organization and its stakeholders (Hon & Grunig, 1999). This occurred mainly through the adoption of two-way symmetrical communication, which not only gave stakeholders the ability to “speak back” (Naude et al., 2004, p.89), but allowed practitioners to “find out what’s going on out there” with their publics (Grunig, 1997, p. 292). Two-way symmetrical communication is therefore characterized by a “willingness of an organization to listen and respond to the concerns and interest of its key stakeholders” (Roper, 2005, p. 65).

By maintaining the two-way symmetrical model, organizations are more likely to achieve their goals because they can use the information they gather from exchanges to manage conflict, negotiate with publics, and improve understanding about an issue or topic (Grunig, 1997, p. 292). Therefore, given the Internet’s potential to establish two-way communication, it is no longer acceptable for corporate entities to simply talk to constituents; now organizations must talk with constituents in order to establish long-

term relationships (Edelman, 2004). Especially promising in this regard is the capacity that interactive, two-way electronic media and database technologies have for creating unique and personalized "conversations" or "dialogues" with individual consumers (Schultz, 2000).

Dialogic Communication

Dialogic communication has emerged as an aspect of relationship management whereby both organizations and publics have the opportunity to create and share messages through two-way communication (Bailey, 2007). The relationship between two-way symmetrical communication and dialogic communication can therefore be seen as one of "process and product," where dialogue is a product of the two-way symmetrical communication process (Kent & Taylor, 1998, p.323). Ergo, a dialogic relationship can exist only if both parties view communicating with each other as a goal of the relationship (Kent & Taylor, 1998). From this perspective, the dialogic approach can "change the nature of the organization-public relationship by placing emphasis [specifically] on the relationship" (Kent & Taylor, 2002, p. 24).

While it is beyond the scope of this study to determine relationship measurements and whether both parties view communicating with each other as a goal, this study is able to look at how organizations, such as hospitals, communicate with stakeholders' thorough online dialogic communication tools. In particular, Kent and Taylor (1998) argue that, "dialogic communication created by the strategic use of the [World Wide Web] is one way for organizations to build relationships with publics" (p. 331). As such, practitioners must strive to create Web sites that are "constructed with an understanding of how the Web functions" if they want to maintain sites that "enhance interest in their

organization, contribute to public dialogue, and increase public knowledge and awareness” (Kent & Taylor, 1998, p. 326).

Dialogic Features

While rooted in relational communication theory, Kent and Taylor (2002) extended dialogic theory as a way to guide practitioners and scholars in the creation and maintenance of effective organization-public relationships through “honest and ethical ways” (Kent et al., 2003, p.67). To do this, Kent and Taylor began by describing five overarching features that embody the “implicit and explicit assumptions that underlie the concept of dialogue” (McAllister-Spooner, 2009, para 3). These features include: mutuality, or “the recognition of organization-public relations”; propinquity, or “the temporality and spontaneity of interactions with publics”; empathy, or “the supportiveness and confirmation of public goals and interests”; risk, or “the willingness to interact with individuals and publics on their own terms; and commitment, or “the extent to which an organization gives itself over to dialogue, interpretation, and understanding in its interactions with publics” (Kent & Taylor, 2002, p. 24-25).

Dialogic Principles

With the main features of dialogue in mind, Kent and Taylor (1998) went on to propose five dialogic principles which further serve as guidelines for the successful integration of dialogic public relations through the World Wide Web. These principles include offering: dialogic loops, useful information, generation of return visits, ease of the interface/intuitiveness, and finally, the conservation of visitors.

Dialogic loop

Because the Internet is capable of establishing interactive, two-way symmetrical communication, it is important that practitioners develop dialogic feedback loops

(Kelleher, 2009). These dialogic loops not only allow publics to query and talk to organizations, they offer organizations the opportunity to respond to questions, concerns and problems posed by various stakeholders as well (McAllister-Spooner, 2009). It should be noted that for the dialogic loop to be effective, practitioners need to be committed to responding to publics: “[It] is not helpful to have published electronic mail addresses for organizational members if these individuals do not respond to their messages and are not committed to or capable of negotiating relationships with publics” (Kent & Taylor, 1998, p. 326). For a feedback loop to function properly, a commitment of resources on the part of the organization is required. If this commitment does not occur, it will be difficult for organizations to provide the information publics need or desire (Kent & Taylor, 1998)

Usefulness of information

Stakeholders expect organizations to provide useful and trustworthy information on their Web sites (Kent & Taylor, 1998). This means it is not enough for practitioners to simply provide static information online anymore, now organizations must provide information that their various stakeholders want, desire and value (Kent & Taylor, 1998). This includes providing Web site visitors with “contact addresses, telephone numbers, and electronic-mail addresses of organizational members, external experts, shareholders, and those holding valid competing/contradictory positions” (Kent & Taylor, 1998, p. 328). Other types of audience-specific information that can be offered include explanations of how products are produced or services delivered (Kent & Taylor, 1998).

Although audience-specific information is important, Kent and Taylor (1998) argue that sites should still make an effort to include some information “of general value to all publics,” such as background, or historical, information about the organization (p. 327).

While providing both particular and generic information, organizations must keep in mind hierarchic and structural issues, to wit, they should organize information in such a way that it can be easily found by interested publics (Kent & Taylor, 1998). By providing these publics easy access to “useful” information, positive attitudes are more likely develop (Kent & Taylor, 1998, p. 328).

Generation of return visits

Under the generation of return visits principle, practitioners must find ways to create the foundation for long-lasting relationships with publics online (McAllister-Spooner, 2009). This means developing Web sites that contain attractive features which repeatedly bring visitors back (Kent & Taylor, 1998). A long list of features exist which may attract repeat visits. These features include: updated information, changing issues, special forums, news commentaries, on-line question and answer sessions, and on-line “experts” to answer questions for interested visitors. Updating information is a particularly easy way for public relations practitioners to create strong dialogic relationships because sites that contain constantly updated material appear to be more credible (Kent & Taylor, 1998).

Other tools that may encourage repeat visits include frequently asked questions (FAQs) sections, easily downloadable or mailed information, technical or specialized information that can be requested by regular mail or electronic mail, and referral services or links to local agencies or information providers (Kent & Taylor, 1998, p. 329). Sites that contain these features will be more likely to generate return visits from publics; however, in order to be effective all of these features must be accompanied by access to public relations professionals who can “guide publics through the site and tailor information to specific public needs” (Kent & Taylor, 1998, p. 329).

Ease of interface

More than using attractive features to draw-in repeat visitors, sites must be easy for visitors to use and understand (Kent & Taylor, 1998). Visitors should not have to follow seemingly “random” paths and links to find information, instead, sites should be structured to be intuitively navigable (Kent & Taylor, 1998). Tables of contents are thought to be a useful tool for navigating Web site interfaces; this is particularly true if the tables are well organized and hierarchical (Kent & Taylor, 1998, p. 329).

Furthermore, avoiding technology that is available only to specific users with the “latest and greatest” software can also ease certain interface issues. Alternatively, those organizations wishing to add the latest software to their sites should consider allowing visitors to choose between what Kent and Taylor (1998) called “basic text based site[s]” and “supercharged site[s] with graphics and/or sounds” (p. 330).

Conservation of visitors

The conservation of visitors principle maintains that Web sites should offer features and links that “value and conserve visit time” (McAllister-Spooner, 2009, para 4). As such, practitioners should be careful about including links that can lead visitors away from the organization’s Web site because “once a visitor leaves your site on a ‘link’ s/he may never get back” thus defeating the goal of creating and fostering relationships online (Kent & Taylor, 1998, p. 330). Therefore, if practitioners do decide to include links, they should only be “essential links” that have “clearly marked paths for visitors to return to your site” (Kent & Taylor, 1998, p. 330).

Web 2.0

The advancement of web-based technology has brought new and revolutionary development to the field of public relations. In particular, social media, often referred to

as Web 2.0 (Sweetser & Lariscy, 2008, p. 179), has become increasingly popular since its inception six years ago (Wright & Hinson, 2009). Social media, according to Sweetser and Lariscy (2008), describes a set of technology tools that provide “mediated opportunities for bringing people together and encouraging social networking and dialogic communication” (p. 180). These tools include, but are not limited to, email, blogs, RSS feeds, podcasts, wikis, microblogs such as Twitter, and social networking sites such as Facebook, MySpace, and YouTube (Croft, 2008; Eyrich, Padman, & Sweetser, 2008).

With the growing number of Web 2.0 tools, public relations practitioners can now interact with key publics and allow users to engage with one another on topics of mutual interest. This, according to Bortree and Seltzer (2009), should provide the “ideal conditions necessary for stimulating dialogic communication” (p. 317). Thus, while Web 2.0 was not a principle of online dialogic communication developed by Kent and Taylor, its addition was considered essential to this study, given its potential to stimulate dialogic communication and develop relationships with members of various publics (Bortree & Seltzer, 2009; Wright & Hinson, 2009).

In the end, if practitioners are to create and maintain sites that enhance interest in their organization, contribute to public dialogue, and increase public knowledge and awareness, then practitioners must strive for sites that are constructed with an understanding of the principles mentioned above (Kent & Taylor, 1998). However, as Kent & Taylor (1998) are quick to point out, simply using technology does not ensure that good relationships will be developed between organizations and their publics (p.

324). Rather, how the technology is used will have the greatest impact on organization-public relationships (Park & Reber, 2008).

Prior Research

To date, several studies in public relations have examined how dialogic principles have been used to build organization-public relationships on the Web (see Gordon & Berhow, 2009; Kent et al., 2003; Park & Reber, 2008; Taylor et al., 2001; Taylor & Kent, 2004). Kent et al., (2001), for instance, examined online relationship building efforts of activist organizations by identifying the dialogic communication features embedded on the organizations' Web sites. Gordon and Berhow (2009) also looked for the presence of dialogic features, this time in university Web sites. What these and other studies found, was that while the organizations had some technical and design aspects necessary for dialogic relationship building on the Web, most were not yet fully engaging their publics in two-way communication (Taylor et al., 2001).

However, a recent study, conducted by Park and Reber (2008) found that there are some industries beginning to engage in two-way communication as a means of building dialogic relationships online. In particular, this study examined the dialogic features of Fortune 500 companies' Web sites and found that the corporations' Web sites were designed to serve important publics and foster dialogic communication. Despite the apparent presence of two-way communication features, the authors still acknowledged that the corporations had room to improve the way they engaged publics in dialogue online (Park & Reber, 2008, p. 411)

While there has been no study, to-date, examining the way hospitals develop dialogic relationships through their online Web sites, a growing number of scholars have begun to investigate the best ways hospitals can use the Internet to communicate

effective messages (see Bishop et al., 2006; Boehm, Daley, & Hanson, 2006; Gallant et al., 2007; Mira et al., 2006; Sanchez & Fuentes, 2002; Sillence, Briggs, Harris, & Fishwick, 2007).

Most of these studies have focused on user perspectives and preferences of hospital Web sites. Gallant et al., (2007) for instance, examined how hospital Web sites could best meet the needs of Internet users. In particular, the study investigated what content and functionality patient-consumers desired on a hospital Web site. Mira et al. (2006) and Boehm et al. (2006), on the other hand, looked at the ease of use and overall quality of hospital Web sites from the user perspective by focusing on readability, accessibility, and usability.

Overall these studies show that modern consumers want to be knowledgeable concerning their healthcare and as such consumers seek aspects such as trust and usefulness through hospital Web sites. Additionally, hospital Web site users are seeking more patient-oriented and transactional Web sites that would help foster stronger patient-hospital relationships.

Research Questions

With such studies shedding light on user preferences, hospitals should be inclined to focus on the design features of their Web sites in order to fulfill consumer's demands and build strong organization-public relationships and reputations (Sanchez & Fuentes, 2002). Nevertheless, little is known about how hospitals actually establish organization-public relationships through dialogic principles via their Web sites. This area of inquiry is critical though, given that relationships between publics and organizations can now be "created, adapted and changed" through the World Wide Web (Kent & Taylor, 1998, p. 326). Also, because Internet tactics continue to evolve and mature, it is important that

public relations scholars examine and re-examine those evolving tactics for applied and theoretical insights (Park & Reber, 2008, p. 410).

Therefore, the objective of this study is to identify the way hospitals use the Web to create, foster, and maintain dialogue with their target publics. Additionally, the relationships between dialogic tools, hospital size, and organizational success will be considered. In order to achieve these objectives, the following research questions were used to guide this study:

- **RQ1.** What types of dialogic tools are present on hospital Web sites?

The first research question aims, first and foremost, to examine the presence or absence of dialogic tools on hospital Web sites. This question is important because it will provide a snapshot in time of how the Web is being used by hospitals as a communications tool.

In order to answer this question, the framework posited by Taylor et al., (2001) was adapted and utilized. This framework offers a strong theoretical foundation for the development of coding categories, since it analyzes Kent and Taylor's (1998) five features of dialogue: dialogic loop, usefulness of information, generation of return visits, ease of interface, and conservation of visitors (Jose & Lee, 2007).

- **RQ2a.** What is the relationship between the total number of dialogic tools present on hospital Web sites and hospital size?
- **RQ2b.** What is the relationship between the dialogic factor groups and hospital size?

As mentioned previously, small organizations and large organizations alike can now use the Internet to promote their mission, product, and services (Taylor & Kent, 2004). Thus the second research question sought to find if there was a relationship between hospital size and the total number of dialogic tools present on a hospital's Web

site. Additionally, this study looked at the relationships between the dialogic factor groups and hospital size.

As addressed in the literature review, a close link between organization-public relationships and organizational reputation has been noted by public relations scholars (Hon & Grunig, 1999) and business scholars (Fombrun, 1996). Since dialogic communication is considered one aspect of relationship management (Bailey, 2007), there was believed to be a close link between dialogic communication efforts and reputation. With this information in mind, the following research questions were examined:

- **RQ3a.** What is the relationship between the total number of dialogic tools present on hospital Web sites and the overall patient ratings of hospitals?
- **RQ3b.** What is the relationship between the dialogic factor groups and overall patient ratings of hospitals?
- **RQ4a.** What is the relationship between the total number of dialogic tools present on hospital Web sites and reputational scores regarding doctor communication, nurse communication, discharge information, attentiveness of hospital staff, and communication about medications?
- **RQ4b.** What is the relationship between the dialogic factor groups and reputational scores regarding doctor communication, nurse communication, discharge information, attentiveness of hospital staff, and communication about medications?

The methods, design, and procedures used to gather and analyze the data necessary to test the research questions mentioned above is explained in more depth in the next section.

CHAPTER 3 METHODOLOGY

To analyze the content of hospital Web sites, specifically, to explore the presence or absence of online dialogic features relevant to the practice of public relations, this study employed a quantitative content analysis. Content analysis is defined by Krippendorff (2004) as “a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use” (p. 18). While content analysis provides an effective way to investigate the content and messages of media, it cannot serve as the basis for making statements about the effects of content on an audience (Wimmer & Dominick, 2006, p. 153). Therefore, the content analysis method used in this research was conceptual analysis, which involves “choosing certain concepts for examination and analysis and then quantifying and tallying their presence in the chosen texts” (Jose & Lee, 2007, p. 311).

Hospital Web sites were designated as the unit of analysis for this study, and each were examined to determine how individual hospitals employ dialogic tools. Specifically, the analysis focused on the home page and pages up to three-clicks away from the home page.

The home page was considered for many reasons. To begin, the home page is considered to be central to Web-based communication because it provides a kind of “front door” to all messages contained in the site and as a result many visitors decide whether they will continue to browse a site based on their first impression of the home page (Ha & James, 1998). Moreover, Web sites vary substantially in size, from one page to 50,000 pages, so coding an entire Web site could be extremely time-consuming and could introduce biases based on size (Ha & James, 1998).

At the same time, organizations do not provided all of their information on the home page. As Park and Reber (2008) note, sites are usually designed to emphasize some information and place other information in the background based on their relative importance. However, research has also shown that users will usually leave a site if they have not found what they are looking for after three clicks – this is known as the “Three Click Rule” which was coined by Jeffrey Zeldman in the 1990s (Porter, 2003, para 4). Therefore, considering the way people use the Web, and in order to have a more thorough analysis of the Web site while still monitoring both time limitations and biases based on size, pages linked up to three-clicks away from the home page were also analyzed.

Sample

A stratified random sample of 105 hospital Web sites collected from *Consumer Reports'* Hospital Patient Ratings list was used in order to explore the use of online dialogic features of hospitals. Stratified random sampling, according to Wimmer and Dominick (2006), helps researchers reduce sampling error by ensuring that a sample is “drawn from a homogenous subset of the population” (p. 96). Babbie (2005) further notes that stratified sampling enhances the representation of other variables related to the research objectives by ensuring “the proper representation of the stratification variables” (as cited in Wimmer & Dominick, 2006, p. 96). Thus, the sampling for this study was conducted using the size of hospitals as strata – with hospital size being derived from the number of beds a hospital maintains. Specifically, the hospitals were stratified into three groups (small, 1-100 beds; medium, 101-300 beds; and large, <300 beds) (Halpern, Pastores, Thaler, & Greenstien, 2006). From each category, 35

hospitals were randomly chosen with the use of a random number generator, making a total sample of 105 hospitals (see Appendix A for complete sample).

The Web sites of each hospital was directly accessed by linking from the Hospital Patient Ratings list loaded on the *Consumer Reports* Web site (<http://www.consumerreports.org/health/home.htm>). Hospital sites which were under construction or did not load during the coding period were excluded from the sample and other Web sites were chosen. An examination of these Web sites occurred between January 12, 2010 and February 2, 2010.

As mentioned earlier, the sample for this study was drawn from the *Consumer Reports'* Hospital Patient Ratings list, which rates over 3,000 hospitals in the United States based on survey data collected by the Center for Medicare and Medicaid Services (CMC) (Consumer Reports, 2010). The survey, called the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS), is used to measure and report the quality of hospitals from the consumers' perspective based on ten criteria: Communication with doctors and nurses, pain control, how often help was received when needed, cleanliness and quietness of rooms, information about new medications, information about discharge, whether the patient would recommend the hospital to family and friends, and the patients overall rating of their experience (Consumer Reports, 2010).

From the survey results, *Consumer Reports* considers eight of the measures and calculates the percentage of respondents who say "always" or "usually" in response to the survey questions¹. *Consumer Reports* then assigns rating scores to doctor

¹ The percentage of patients who said they received discharge instructions was used to calculate discharge instruction measurements (Consumer Reports, 2010)

communication, nurse communication, room cleanliness and discharge information based on a “better to worse” scale, with 95 to 100 percent considered “better” and 79 percent or below considered “worse.” Additionally, *Consumer Reports* creates an overall score for the hospitals, on a hundred point scale, based on the average of two overall measures: The percentage of respondents who would “definitely” recommend the hospital and the percentage of respondent who gave the hospital an overall rating of 9 or 10 on a scale of 0-10 (Consumer Reports, 2010).

In the end, the *Consumer Reports’* Hospital Patient Ratings database was chosen because it is a large database of hospital Web sites, based on a survey of over 1 million patients, with various measurement category ratings available for comparison. For the purpose of this study, therefore, this database was deemed the most appropriate sampling frame.

Framework

A code book was developed to record information on what dialogic features hospitals were using to communicate on their Web sites. The features were divided into seven categories, or dimensions, corresponding to the five principles revealed by Kent and Taylor (1998), which were adapted to reflect changes relevant to hospital Web sites. The categories included dialogic loop, usefulness of information for patients, usefulness of information for the general public, generation of return visits, ease of interface, and conservation of visitors, as well as the added dimension of Web 2.0. These features served as indicators to evaluate if and how the Web site, and by extension the hospital, applied dialogic communication strategies online.

To analyze these features, Taylor et al.’s (2001), 32-item code sheet, which was used to analyze activist organizations’ Web sites, was supplemented and adapted to

reflected changes relevant to hospital Web sites. In order to verify that the list of items was appropriate to the study, a pilot study was conducted. The sample of this pilot study accounted for 10% of the total sample. All coding disagreements were discussed and the codebook was revised accordingly. In the end, a 53-item code sheet was developed and used to code each of the Web sites in this study (Appendix B).

To begin, the dialogic loop was measured. The seven specific items measured included: the opportunity for user-response; the opportunity for online consultation; online polling; user survey; regular information offered thorough email and/or subscription; general contact information and/or forms; and the opportunity to recognize hospital staff.

Since the design of a Web site should be more audience-specific, focusing on those key publics who are strategically valuable to the organization (Kent & Taylor, 1998), it is believed hospital Web sites will focus on information specifically for patients and the general public. Thus the usefulness of information feature was adapted to focus mainly on patient and general public information. The 10 items measured in regards to patient information included: description of services; patient testimony and stories; award information, prominent logos of organization on the home page; identification of organizational key members; the ability to find a physician; the option to pay a bill, make an appointment and/or refill a prescription online; quality measure; financial and insurance information, and virtual tours. The nine items measured in regards to general public information included: organizational history; statement of philosophy/mission statement; general organizational facts; organizational publications; volunteer

opportunities; donation opportunities; press releases/press room/news room; annual reports; and audio/visual capacity.

The generation of return visits was measured by 11 items meant to facilitate return on a regular basis (Park & Reber, 2008). For this study, features of Web sites that contribute to high return rates included: explicit statements that invite users to return; forums; frequently asked questions/question and answer forums; the option to “bookmark now”; links to other Web sites; a calendar of events; downloadable information; the ability to request information by mail/email; posting of news stories within the last 30 days; the ability to register/sign-up for classes, groups and events; and the ability to register/log-in to personalized networks and Web pages.

The next category, ease of interface, was measured by five items: the presence of site maps; major links to rest of site; a search engine box; a low reliance on graphics; and links to the home page present on other pages. The conservation of visitors category included three items: important information available on the home page; loading times that are less than four seconds; and posting of last updated time and/or date. The final category, Web 2.0, included eight items: Ecards; interactive content; links to social networking sites; RSS feeds; blogs; microblogs; podcasts; and YouTube.

In addition to dialogic features, specific coding topics were considered such as hospital name, location, size, URL, overall rating, and scores of doctor communication, nurse communication, discharge information, attentiveness of hospital staff, and communication about medications.

Intercoder Reliability

Reliability is defined as “the extent to which a measuring procedure yields the same results on repeated trials” (Carmines & Zeller, 1979). In content analysis, this

translates to intercoder reliability, which is level of agreement among independent coders who code the same content using the same coding instrument (Wimmer & Dominick, 1997). Therefore, a study can be reliable when repeated measurement of the same material results in similar decisions. Without achieving intercoder reliability, a measure cannot be considered valid. Thus, intercoder reliability is a critical component of content analysis.

To assess intercoder reliability, two coders were used to obtain a score for intercoder reliability. All coders were asked to input their responses into spreadsheets for data analysis. The first coder coded all 105 Web sites. The second coder coded 21 randomly selected Websites, or 20% of the full sample. Additionally, Scott's pi was used for measurement of intercoder reliability; it is generally considered a strong measurement for reliability as it takes into account coder agreement that occurs strictly by chance (Wimmer & Dominick, 2006, p. 167).

Although an acceptable level of intercoder reliability for each variable is disputable, Ellis (1994) mentions that coefficients exceeding 0.75 to 0.80 indicate high reliability. Frey, Botan, and Kreps (2000) also considered 70% agreement to be reliable. Thus, coefficients of 70% or greater were regarded as acceptable for this content analysis, given the study's exploratory nature (Lombard, Snyder-Duch, & Bracken, 2008).

With an overall percentage agreement score of 93%, this study did meet the minimum acceptable level of reliability. Consequently, the data, and interpretations of the data, can be considered valid (Lombard et al., 2008).

The reliability was also checked on each individual variable to come up with individual Scott's pi coefficients and percent agreements to determine if there were

some variables more reliable than others. All variables were above the acceptable level of 70%. An average of all percent agreement reliability scores is reported below.

The percentage agreement results for the dialogic loops dimension include the opportunity for user-response (86%); the opportunity for online consultation (100%); online polling(100%); user survey(81%); regular information offered thorough email and/or subscription (91%); general contact information and/or forms (100%); and the opportunity to recognize hospital staff (100%).

The percentage agreement results for the usefulness of information for patient dimension include description of services (100%); patient testimony (100%); awards; organizational logo on home page (100%); identification of key organizational members (100%); the ability to find a physician (95%); the option to pay bills, make appointments and/or refill prescriptions online (95%); hospital quality measures (100%); financial and/or insurance information (86%); and virtual tours (95%).

The percentage agreement results for the usefulness of information for the general public dimension include organizational history (95%); philosophy/mission statement (95%); organizational facts (81%); organizational publications (100%); volunteer opportunities (100%); donation opportunities (95%); press release, press room and/or news room (91%); annual report; audio and/or visual capabilities (81%).

The percentage agreement results for the generation of return visits dimension include explicit statements that invite users to return (95%); forums (100%); frequently asked questions and/or question and answer forums (91%); the ability to “bookmark now”(86%); links to external Web sites (95%); calendar of events (86%); downloadable information (81%); the ability to request information by mail and/or email (95%); news

stories posted within the last 30 days (81%); the ability to register/sign-up for classes, support groups and events (91%); the ability to register/log-in to a personalized Web page (100%).

The percentage agreement results for the ease of interface dimension include site maps (91%); major links to the rest of site from home page (100%); search engine box (100%); reliance on graphics (91%); and links to home page from rest of site (100%).

The percentage agreement results for the conservation of visitors dimension include important information on the home page (86%); loading time less than four seconds (95%); and updated time and/or date (95%),

The percentage agreement results for the Web 2.0 dimension include ecards or the ability to email and patient (95%); interactive content (95%); social networking sites (100%); RSS feeds (91%); blogs (100%); microblogs (100%); and links to YouTube channel (100%).

Data Analysis

The Statistical Package for the Social Sciences (SPSS) was used to calculate all data results. Several types of data analyses were conducted. First, frequencies were used to assess the presence or absence of dialogic features. Then factor analyses were used to determine whether there were relationships within features. Finally, correlations and multiple regressions were conducted in order to examine the remaining research questions. The next chapter of this study will present the results of the analyses and answer the stated research questions.

CHAPTER 4 RESULTS

Sample Profile

Descriptive statistics were used to analyze the demographic variables of the 105 hospitals in this study. In particular, the locations of the hospitals were looked at as well as the hospital size (based on number of beds). Furthermore, computations for overall patient ratings, doctor communication scores, nurse communication scores, discharge information scores, attentiveness of hospital staff scores, and communication about medications scores were provided.

The 105 hospitals analyzed in this study were from 44 different states across the United States. The top states, that had the largest number of hospitals from the sample, were New York with 11% (n=11) of the total sample, California with 9% (n=9), Florida with 7% (n=7), Missouri with 6% (n=6), and Ohio and Texas with both 5% (n=5) of the sample hospitals. Seven states had 3% (n=3) each of the total sample, including Illinois, Kansas, Michigan, Minnesota, Mississippi, South Carolina, and Wisconsin. Fifteen states were locations for 2% (n=2) each of the total sample, including Arizona, Connecticut, Georgia, Indiana, Kentucky, Louisiana, Massachusetts, Maryland, North Carolina, Nebraska, New Hampshire, New Jersey, Oklahoma, Virginia, and Wyoming. Additionally, Colorado, Iowa, Idaho, Maine, Montana, New Mexico, Oregon, Pennsylvania, Tennessee, Vermont, and Washington each were locations for 1% (n=1) of the sample hospitals.

Overall patient rating percentages of the 105 hospitals analyzed can be found on the *Consumer Reports* Web site (Consumer Reports, 2010). The median overall patient rating for these hospitals was 67%. The mean rating was 66%, with a standard

deviation of 11.6. In addition, the maximum overall rating was 100%, received by Patient's Hospital of Redding in Redding, California. The minimum overall patient rating was 27%, received by Jackson Park Medical Center in Chicago, Illinois.

Individual communication score percentages for the 105 hospitals analyzed can also be found on the *Consumer Reports* Web site. In terms of doctor communication, the median score was 96%, while the mean score was 95.1% with a standard deviation of 2.9. The maximum doctor score was 100 and the minimum score was 80. Nurse communication had a median score of 95%. The mean score was 93.6% with a standard deviation of 4.8. The minimum score was 68 while the maximum score for nurse communication was 100.

The median score for discharge information was 81% while the mean was 80.3% with a standard deviation of 6.3. The minimum score was 55 while the maximum score for discharge information was 92. The median score was 89% for the attentiveness of hospital staff and the mean score was 87.3% with a standard deviation of 7.9. While the minimum score was 55, the maximum score for discharge information was 92. Finally, the median score for communication about medication was 78%, with a mean score of 76.9% and a standard deviation of 6.5. Moreover, the minimum score for communication about medications was 53 while the maximum score was 91.

Frequencies

Table 4-1 contains the frequencies for dialogic feature presence on hospital Web sites. In regards to dialogic loop feature items, 99% (n=104) of hospitals analyzed contained general contact information, 45.7% (n=48) contained opportunities for user-response, 37.1% (n=39) contained regular information available through email and/or subscriptions, 7.6% (n=8) contained user surveys, 6.7% (n=7) contained the ability to

recognize hospital staff, 4.8% (n=5) contained an opportunity for online consultation, and 1% (n=1) contained online polling.

When it came to items regarding usefulness of information for patients, 99% (n=104) of hospitals contained a description of services, 99% (n=104) contained a prominent logo of the organization on the home page, 94.3% (n=99) contained the ability to find a physician, 76.2% (n=80) contained financial and/or insurance information, 58.1% (n=61) contained identification of organizational key members, 55.2% (n=58) contained award information, 55.2% (n=58) contained option pay bill, make appointment, and/or refill prescription online, 52.4% (n=55) contained quality measures, 34.3% (n=36) contained patient testimony or stories, and 26.7% (n=28) contained virtual tours.

Of the hospitals analyzed for usefulness of information for the general public items, 86.7% (n=91) contained a statement of philosophy and/or mission statement, 86.7% (n=91) contained press releases, press rooms, and/or news rooms, 76.2% (n=80) contained donation opportunities and/or information, 73.3% (n=77) contained volunteer opportunities and/or information, 68.6% (n=72) contained organizational history, 62.9% (n=66) contained organizational publications, 61.9% (n=65) contained general organizational facts, 53.3% (n=56) contained audio and/or visual capabilities, and 34.3% (n=36) contained annual reports.

In terms of generation of return visits items, 97.1% (n=102) of hospitals analyzed contained links to external Web sites, 72.4% (n=76) contained downloadable information, 69.5% (n=73) contained calendar of events, 49.5% (n=52) contained frequently asked questions and/or question and answer forums, 47.6% (n=50)

contained posting of news stories with the last 30 days, 41.9% (n=44) contained the ability to request information by mail and/or email , 41.9% (n=44) contained the ability to register/log-in to a personalized network and/or Web page, 19% (n=20) contained the ability to register/sign-up for classes, groups, and/or events online, 10.5% (n=11) contained the option to “bookmark now”, 10.5% (n=11) contained explicit statements that invite users to return, and 0% (n=0) contained forums.

Ease of interface items frequencies were as follows: 98.1% (n=103) of hospital analyzed contained links to home page, 98.1% (n=103) contained major links on the front page to the rest of the Web site, 74.3% (n=78) contained a search engine box, 61.9% (n=65) contained low reliance on graphics, and 47.6% (n=50) contained site maps.

Regarding conservation of visitors items, 98.5% (n=94) of hospitals contained important information available on the home page, 70.5% (n=74) contained loading time that were less than four seconds, and 18.1% (n=19) contained posting of last updated time and/or date.

Finally, in terms of Web 2.0 feature items, 47.6% (n=50) of hospitals analyzed contained the ability to send ecards and/or email a patient, 47.6% (n=50) contained interactive content, 21.9% (n=23) contained links to social networking sites, 19% (n=20) contained RSS feeds, 17.1% (n=18) contained links to microblogs, 10.5% (n=11) contained podcasts, 9.5% (n=10) contained links to YouTube channels, and 6.7% (n=7) contained blogs.

Of the dialogic feature items analyzed, general contact information, description of services, and logos of the organization prominent on home page were the most frequent

categories on hospital Web sites, with a 99% occurrence rate for each category. This was followed by major links on the front page to the rest of the site, links to the home page, and links to external Web sites, accounting for 98.1%, 98.1%, and 97.1% each. The least frequent categories included forums, with 0% presence, online polling with 1%, opportunity for online consultation with 4.8%, and the ability to recognize hospital staff and blog with 6.7% each.

Dialogic Factors

An exploratory factor analysis of each dialogic feature was used to learn whether the dialogic tool items in each subset were correlated. Each initial exploratory factor analysis had an eigenvalue criterion of one and used principal axis factoring with oblique rotation. The data were first screened for items with frequency proportions greater than 95% and less than 5% and were eliminated due to lack of variance.

In total, eight items were identified through this screening process. Three items were removed from the dialogic loop dimension. These included general contact information, which was present on 99% of the sites, opportunity for online consultation, which was present on 4.8% of the sites, and online polling, which was present on 1% of the sites. Within the usefulness of information for patient dimension, two items were eliminated. These two items included description of services, which were present on 99% of the sites, and a logo of the organization on the home page, which was present on 99% of the sites. With regards to the generation of return visits dimension, one item, forums, was eliminated because it had no presence on the hospital Web sites. Finally, the ease of interface dimension had two items eliminated during the screening process. These items included links to the home page, which was present on 98.1% of the sites,

and links from the front page to the rest of the site, which was also present on 98.1% of the sites.

Dialogic Loop

The first exploratory factor analysis looked at the four remaining dialogic loop items. The analysis yielded two factors explaining a total of 65% of the variance. Factor 1 was labeled “Response” due to high loadings by the following items: user response, ability to recognize hospital staff, and regular information offered through email and/or subscription (Table 4-2). This first factor explained 37% of the variance. The three primary items in this factor also showed a moderate level of reliability with a Cronbach’s alpha² of .45. The second factor derived was labeled “Survey.” This factor was labeled as such due to the high loading of the user survey item and moderate loading of the regular information offered through email and/or subscription item (Table 4-2). The variance explained by this factor was 28%. This factor had a low level of reliability between the two items, with a Cronbach’s alpha of .23.

Usefulness of Information for Patients

The next factor analysis looked at the eight remaining items associated with the usefulness of information for patients dimension. The initial factor analysis extracted a three factor solution. However because of the “leveling off” of eigen values on the scree plot after two factors and insufficient number of primary loadings, a two factor solution which explained 43% of the variance was preferred and forced.

² It should be noted that dummy variables (0=“absence”; 1=“presence”) were used in these factor analyses, therefore cronbach’s alpha levels may not accurately measure the reliability of these variables. Nevertheless, for the purpose of this study, Cronbach’s alpha levels were reported.

The first factor was labeled “Quality Awards.” This factor was labeled as such due to the high loadings by the following factors: hospital quality measures, award information, patient testimony or stories, option to pay bills, make appointment, and/or refill prescription online, and financial and/or insurance information (Table 4-3). The variance explained by this factor was 30%. The reliability of these five items was high, with a Cronbach’s alpha of .69. Factor 2 was labeled “Tours” due to the high loading of the virtual tour item. This second factor explained 13% of the variance. Given that only one item had high loading, Cronbach’s alpha was not calculated.

Usefulness of Information for the General Public

Based on a factor analysis of the usefulness of information for the general public dimension, a two factor solution was deemed appropriate. Factor 1 was labeled “Org Info” due to the high loadings from donation opportunities and/or information items and moderate loadings from organizational history, annual reports, and press releases, press room and/or news room items (Table 4-4). This first factor accounted for 27% of the variance. The reliability of these four items was moderate, with a Cronbach’s alpha of .57. The second factor had high loadings from general organizational facts items and audio and/or visual capabilities items. As such, this factor was labeled “Audio Facts” (Table 4-4). This second factor explained 14% of the variance. The two items for this second factor also had a moderate reliability level with a Cronbach’s alpha of .53.

Generation of Return Visits

An initial factor analysis looked at ten items within the generation of return visits dimension. A four factor solution was extracted. However four items were eliminated at this step because they had no correlation to any of the other variables and they did not contribute to a simple factor structure. The eliminated items included frequently asked

questions, the ability to log-in/register to a personalized Web page, explicit statements that invite users to return, and the option to “bookmark now.”

The six remaining items were analyzed and a two factor solution was generated. The first factor was labeled “Downloadable News.” This factor was given this label due to the high loadings of downloadable information and news stories posted within the last 30 days which explained 31% of the variance (Table 4-5). The inter-item reliability between these two items was moderate, with a Cronbach’s alpha of .54. The second factor was labeled “Event Sign-Up” due to the high loadings of calendar of events and ability to register for classes, support groups and/or events online. A moderate loading was also present for news posted within the last 30 days (Table 4-5). This second factor explained 19% of the variance. Additionally, with a Cronbach’s alpha of .45, the reliability between these three items was moderate.

Ease of Interface

An initial factor analysis looked at three items within the ease of interface dimension. A one factor solution was extracted. However, the reliance on graphics item had a negative correlation which did not contribute to a simple factor structure. The reliance on graphic item was eliminated and a factor analysis was conducted using the remaining two items. Again, the analysis yielded a one factor solution. This factor was labeled “Search” because of the high loadings by the site map and search engine box items (Table 4-6). This factor accounted for 67% of the variance. Moreover, the reliability between these two items was moderate, with a Cronbach’s alpha of .51.

Conservation of Visitors

A factor analysis of the conservation of visitors items indicated a one factor solution consisting primarily of two items; indication of last updated time and/or date and

important information available on the home page (Table 4-7). As such this factor was labeled “Update Important Info” and accounted for 40% of the variance. Internal consistency was weak, with a Cronbach’s alpha of .27.

Web 2.0

An initial factor analysis looked at eight items within the Web 2.0 dimension. A three factor solution was extracted. However one item was eliminated at this step because it had no correlation and did not contribute to a simple factor structure. The eliminated item was the ability to send ecards or email a patient.

The seven remaining items were analyzed and a two factor solution was generated. Factor 1 was labeled “Interactive Feeds” due to the high loadings by the following items: podcasts and/or vodcasts, RSS feeds, links to YouTube channel, blogs or links to blogs, and interactive content features (Table 4-8). This first factor explained 42% of the variance. Additionally, the inter-item reliability between these five items was high, with a Cronbach’s alpha of .71.

The second factor³ derived was labeled “Social Media”. This factor was labeled as such due to the high loadings by links to social networking sites and microblogging services (Table 4-8). The variance explained by this factor was 19%. Moreover, the reliability between these two items was high, with a Cronbach’s alpha of .85.

Correlations

In order understand the relationship between the total number of dialogic tools present and hospital size, a Pearson correlation coefficient was calculated. A positive

³ The Social Media factor scores appeared negative in the pattern matrix. However, given that these scores were obtained through oblique rotation, negative relationships were not implied. Therefore, subsequent uses of the Social Media factor scores will be interpreted as having positive relations, despite the negative symbol present.

correlation was found [$r(103)=-.40, p<.001$], indicating a significant linear relationship between the two variables; larger hospitals tend to have more dialogic features present.

A Pearson's correlation analysis was also conducted to evaluate the relationship between hospital size and the dialogic factor groups established in the previous section. There was a positive correlation between hospital size and the following dialogic factor groups: Response [$r(103)=.24, p<.05$], Quality Awards [$r(103)=.30, p<.01$], Organization Information [$r(103)=.38, p<.01$], Audio Facts [$r(103)=.40, p<.01$], Downloadable News [$r(103)=.29, p<.01$], Search [$r(103)=.22, p<.05$], Interactive Feeds [$r(103)=.30, p<.05$], and Social Media [$r(103)=-.36, p<.01$]. Thus, the larger the hospital, the more likely these features are to be present on the Web site. No statistically significant relationships were indicated between hospital size and the following factor groups: Survey [$r(103)=.16, p >.05$], Tour [$r(103)=.08, p >.05$], Events Sign Up [$r(103)=.18, p >.05$], and Update Important Info [$r(103)=-.04, p >.05$].

Concurrently, a Pearson correlation coefficient was also calculated to understand the relationship between overall patient rating of the hospital and total number of dialogic features present. A positive correlation was found [$r(103)=0.40, p<.001$], indicating a significant linear relationship between the two variables. In other words, hospitals with higher overall patient ratings tend to have more dialogic features present on their Web site.

Similarly, a Pearson correlation coefficient was calculated for the relationship between number of dialogic tools present and the communication scores, including doctor communication, nurse communication, discharge information, attentiveness of hospital staff, and communication about medications.

A positive correlation was found [$r(103)=.29, p<.01$] between total number of dialogic tools present and doctor communication, indicating a significant linear relationship between the two variables. Thus, hospitals with more dialogic features tend to have higher doctor communication scores. A positive relationship [$r(103)=.27, p<.01$] was also found between number of dialogic features and nurse communication scores. That is, hospitals with more dialogic features tend to have higher nurse communication scores. At the same time, a significant correlation [$r(103)=.34, p<.01$] was found between number of dialogic features and discharge information scores, namely, hospitals with more dialogic features tend to have higher discharge information scores. No significant correlation was found between number of dialogic tools and the remaining scores dealing with attentiveness of hospital staff and communication about medication.

Regressions

Overall Hospital Ratings

To examine the relationship between the dialogic factor groups and overall ratings of hospital, controlling for size of the hospital, a multiple regression analysis was preformed. Specifically the data was examined in a hierarchical regression analysis to test whether, after controlling for hospital size, there was a relationship between overall patient rating of hospital and dialogic factor groups. The overall patient rating of hospitals served as the dependent variable, while hospital size (based on number of beds) was entered as the first block (Model 1) independent variable and the dialogic factor groups were entered individually as the second block (Model 2) independent variable. Twelve separate regressions were necessary because of the multicollinearity of the predictor variables (Table 4-9).

A regression model performed with the Quality Award factor group as the predictor variable was statistically significant [$F(1, 103)=11.73, p<.01$] with a low R^2 of .01, indicating that 1% of the variance can be explained by the predictor variable. As shown in Table 4-10, the Quality Awards factor was statistically significant ($\beta=.12, p<.01$), indicating it was a predictor of overall patient ratings.

The regression model with the Organization Information factor as the predictor variable was also found to be statistically significant [$F(1, 103)=3.77, p<.05$] with a low R^2 of .07, indicating that 7% of the variance can be explained by the predictor variable. In sum, the Organization Information factor was statistically significant ($\beta=.28, p<.01$), indicating it was also a predictor of overall patient ratings (Table 4-10).

With the Events Sign Up factor as the predictor variable, the regression model was also significant [$F(1, 103)=5.95, p<.01$] with a low R^2 of .11, indicating that 11% of the variance can be explained by the predictor variable. Since the Events Sign Up factor was statistically significant ($\beta=.33, p<.01$), it indicates that it was a predictor of overall patient ratings as well.

The results also indicated that other factor groups, including Response, Survey, Tour, Audio Facts, Downloadable News, Search, Update Important Information, Interactive Feeds, and Social Media, were not significant predictors of overall patient ratings of the hospitals (Table 4-10).

Communication Scores

This study also sought to examine the relationship between dialogic factor groups and communication scores. To test whether, after controlling for hospital size, there was a relationship between communication scores and dialogic factor groups, separate hierarchical regression analyses were performed for each of the five communication

scores. The communication score served as the dependent variable while hospital size (based on number of beds) was entered as the first block (Model 1) independent variable and the dialogic factor groups were entered individually as the second block (Model 2) independent variable. Twelve separate regressions were necessary for each of the five communication scores because of the multicollinearity of the predictor variables (Table 4-9).

Doctor communication

In terms of doctor communication scores, the regression was significant [$F(1, 103)=3.94, p<.05$] when the Response factor served as the predictor variable. There was a low R^2 of .07 indicating that 7% of the variance in doctor communication scores can be explained by the predictor variable. The Response factor was also statistically significant ($\beta=.22, p<.05$), indicating that it was a predictor of doctor communication scores (Table 4-10).

When the Survey factor served as the predictor variable, the regression was significant [$F(1, 103)=3.53, p<.05$]. A low R^2 of .07 indicated that 7% of the variance in doctor communication scores could be explained by the predictor variable. Moreover, the Survey factor was statistically significant ($\beta=.20, p<.05$), indicating that it was a predictor of doctor communication scores (Table 4-10).

The regression was significant [$F(1, 103)=6.76, p<.01$] when the Quality Awards factor served as the predictor variable. There was a low R^2 of .12 indicating that 12% of the variance in doctor communication scores can be explained by the predictor variable. Additionally, the Quality Awards factor was significant ($\beta=.32, p<.01$). This indicates that the Quality Awards factor is a good predictor of doctor communication scores (Table 4-10).

With the Organization Information factor as the predictor variable, the regression model was significant [$F(1, 103)=7.15, p<.01$], with a low R^2 of .12 indicating that 12% of the variance in doctor communication scores can be explained by the predictor variable. The Organization Information factor was also statistically significant ($\beta=.34, p<.01$), indicating that it was the best predictor of doctor communication scores (Table 4-10).

When the Audio Facts factor served as the predictor variable, the regression was significant [$F(1, 103)=3.53, p<.05$]. A low R^2 of .07 indicated that 7% of the variance in doctor communication scores could be explained by the predictor variable. Moreover, the Audio Facts factor was statistically significant ($\beta=.21, p<.05$), indicating that it was a predictor of doctor communication scores (Table 4-10).

The regression was significant [$F(1, 103)=3.66, p<.05$] when the Downloadable News factor served as the predictor variable. There was a low R^2 of .07 indicating that 7% of the variance in doctor communication scores can be explained by the predictor variable. Additionally, the Downloadable News factor was significant ($\beta=.21, p<.05$). This indicates that the Downloadable News factor is a predictor of doctor communication scores (Table 4-10).

With the Events Sign Up factor as the predictor variable, the regression model was significant, [$F(1, 103)=6.69, p<.01$] with a low R^2 of .12 indicating that 12% of the variance in doctor communication scores can be explained by the predictor variable. The Events Sign Up factor was also statistically significant ($\beta=.30, p<.01$), indicating that it was a good predictor of doctor communication scores (Table 4-10).

When the Social Media factor served as the predictor variable, the regression was significant [$F(1, 103)=4.41, p<.05$]. A low R^2 of .08 indicated that 8% of the variance in

doctor communication scores could be explained by the predictor variable. Moreover, the Social Media factor was statistically significant ($\beta=-.25$, $p<.05$), indicating that it was a predictor of doctor communication scores (Table 4-10).

The regression model was significant [$F(1, 103)=3.29$, $p<.05$] when the Search factor served as the predictor variable. There was a low R^2 of .04, indicating that 4% of the variance in doctor communication scores can be explained by the predictor variable. However, the Search factor was not significant ($\beta=.19$, $p>.05$). This indicates that the Search factor is not a good predictor of doctor communication scores (Table 4-10).

The results also indicated that the factors Tour, Update Important Information, and Interactive Feeds, and Social Media, were not significant predictors of doctor communication scores (Table 4-10).

Nurse communication

Regarding nurse communication scores, the regression was significant [$F(1, 103)=10.83$, $p<.01$] when the Quality Awards factor served as the predictor variable. There was a low R^2 of .18 indicating that 18% of the variance in nurse communication scores can be explained by the predictor variable. Specifically, the Quality Awards factor was statistically significant ($\beta=.36$, $p<.01$), indicating that it was a good predictor of nurse communication scores (Table 4-11).

Moreover, when the Organization Information factor served as the predictor variable, the regression was significant [$F(1, 103)=10.37$, $p<.01$]. A low R^2 of .17 indicated that 17% of the variance in nurse communication scores could be explained by the predictor variable. As shown in Table 4-11, the Organization Information factor was statistically significant ($\beta=.37$, $p<.01$). That is, the Organization Information factor

was positively related to nurse communication scores. Thus, the Organization Information factor was a good predictor of nurse communication scores.

When the Audio Facts factor served as the predictor variable, the regression was significant [$F(1, 103)=5.56, p<.01$]. A low R^2 of .10 indicated that 10% of the variance in nurse communication scores could be explained by the predictor variable. Moreover, the Audio Fact factor was statistically significant ($\beta=.23, p<.05$), indicating that it was a predictor of nurse communication scores (Table 4-11).

With the Downloadable News factor as the predictor variable, the regression model was significant, [$F(1, 103)=6.88, p<.01$] with a low R^2 of .12 indicating that 12% of the variance in nurse communication scores can be explained by the predictor variable. The Downloadable News factor was also statistically significant ($\beta=.27, p<.01$) (Table 4-11). This indicates that the Downloadable News factor was positively related to nurse communication scores. Thus, the Downloadable News factor was a predictor of nurse communication scores.

The regression was significant [$F(1, 103)=16.98, p<.01$] when the Events Sign Up factor served as the predictor variable. There was a low R^2 of .25 indicating that 25% of the variance in nurse communication scores can be explained by the predictor variable. Specifically, the Events Sign Up factor was statistically significant ($\beta=.45, p<.01$), indicating that it was the best predictor of nurse communication (Table 4-11).

When the Social Media factor served as the predictor variable, the regression was significant [$F(1, 103)=5.11, p<.01$]. A low R^2 of .09 indicated that 9% of the variance in nurse communication scores could be explained by the predictor variable. As shown in

Table 4-11, the Social Media factor was statistically significant ($\beta=-.20$, $p\leq.05$). That is, the Social Media factor was a predictor of nurse communication scores.

Five regression models were found to be significant; however, the predictor variables within these regressions were not significant. For instance, with the Response factor as the predictor variable, the regression model was significant [$F(1, 103)=3.30$, $p<.05$] with a low R^2 of .06 indicating that 6% of the variance in nurse communication scores can be explained by the predictor variable. The Response factor was not statistically significant ($\beta=.08$, $p>.05$) (Table 4-11). This indicates that the Response factor was not a predictor of nurse communication scores.

The same holds true when the Survey factor is used as the predictor variable; the regression model is significant [$F(1, 103)=4.65$, $p\leq.01$] with a low R^2 of .08 indicating that 8% of the variance in nurse communication scores can be explained by the predictor variable. However, the Survey factor was not statistically significant ($\beta=.17$, $p>.05$), indicating that the Survey factor was not a predictor of nurse communication (Table 4-11).

When the Update Important Information factor was used as the predictor variable, the regression model was significant [$F(1, 103)=3.86$, $p<.05$] with a low R^2 of .07, indicating that 7% of the variance in nurse communication scores can be explained by the predictor variable. Likewise, when the Interactive Feeds factor was used as the predictor variable, the regression model was also significant [$F(1, 103)=4.16$, $p<.05$] with a low R^2 of .08, indicating that 8% of the variance in nurse communication scores can be explained by the predictor variable. However, neither the Update Important Information factor ($\beta=.13$, $p>.05$) nor the Interactive Feeds factor ($\beta=.15$, $p>.05$) were

significant. This indicates that neither of these factors serves as good predictors of nurse communication scores. The results also indicated that the Tour factor was not a significant predictor of nurse communication scores (Table 4-11).

Discharge information

Regarding discharge information scores, the regression was significant [$F(1, 103)=9.24, p<.01$] when the Quality Awards factor served as the predictor variable. There was a low R^2 of .15 indicating that 15% of the variance in discharge information scores can be explained by the predictor variable. Specifically, the Quality Awards factor was statistically significant ($\beta=.39, p<.01$), indicating that it was the best predictor of discharge information scores (Table 4-12).

Moreover, when the Organization Information factor served as the predictor variable, the regression was significant [$F(1, 103)=8.27, p<.01$]. A low R^2 of .14 indicated that 14% of the variance in discharge information scores could be explained by the predictor variable. As shown in Table 4-12, the Organization Information factor was statistically significant ($\beta=.38, p<.01$). That is, the Organization Information factor was positively related to discharge information scores. Thus, the Organization Information factor was a good predictor of discharge information scores.

When the Audio Facts factor served as the predictor variable, the regression was significant [$F(1, 103)=4.12, p<.05$]. A low R^2 of .08 indicated that 8% of the variance in discharge information scores could be explained by the predictor variable. Moreover, the Audio Fact factor was statistically significant ($\beta=.27, p<.01$), indicating that it was a predictor of discharge information scores (Table 4-12).

With the Downloadable News factor as the predictor variable, the regression model was significant, [$F(1, 103)=6.88, p<.01$] with a low R^2 of .12 indicating that 12% of

the variance in discharge information scores can be explained by the predictor variable. The Downloadable News factor was also statistically significant ($\beta=.27$, $p<.01$) (Table 4-12). This indicates that the Downloadable News factor was positively related to discharge information scores. Thus, the Downloadable News factor was a predictor of discharge information scores.

The regression was significant [$F(1, 103)=5.34$, $p<.01$] when the Events Sign Up factor served as the predictor variable. There was a low R^2 of .10 indicating that 10% of the variance in discharge information scores can be explained by the predictor variable. Specifically, the Events Sign Up factor was statistically significant ($\beta=.29$, $p<.01$), indicating that it was a predictor of discharge information (Table 4-12).

When the Interactive Feeds factor served as the predictor variable, the regression was significant [$F(1, 103)=3.35$, $p<.05$]. A low R^2 of .06 indicated that 6% of the variance in discharge information scores could be explained by the predictor variable. As shown in Table 4-12, the Interactive Feeds factor was statistically significant ($\beta=.22$, $p<.05$). That is, the Interactive Feeds factor was a predictor of discharge information scores.

The results also indicated that the factors Response, Survey, Tour, Search, Update Important Information, and Social Media, were not significant predictors of discharge information scores (Table 4-12).

Attentiveness of hospital staff

Regarding attentiveness of hospital staff scores, when the Survey factor served as the predictor variable, the regression was significant [$F(1, 103)=12.29$, $p<.01$]. A low R^2 of .19 indicated that 19% of the variance in attentiveness of hospital staff scores could be explained by the predictor variable. Moreover, the Survey factor was statistically

significant ($\beta=.21$, $p<.05$), indicating that it was a predictor of attentiveness of hospital staff scores (Table 4-13).

The regression was significant [$F(1, 103)=16.45$, $p<.01$] when the Quality Awards factor served as the predictor variable. There was a low R^2 of .24 indicating that 24% of the variance in attentiveness of hospital staff scores can be explained by the predictor variable. Specifically, the Quality Awards factor was statistically significant ($\beta=.32$, $p<.01$), indicating that it was a good predictor of attentiveness of hospital staff scores (Table 4-13).

Moreover, when the Organization Information factor served as the predictor variable, the regression was significant [$F(1, 103)=16.54$, $p<.01$]. A low R^2 of .25 indicated that 25% of the variance in attentiveness of hospital staff scores could be explained by the predictor variable. As shown in Table 4-13, the Organization Information factor was statistically significant ($\beta=.33$, $p<.01$). That is, the Organization Information factor was positively related to attentiveness of hospital staff scores. Thus, the Organization Information factor was a good predictor of attentiveness of hospital staff scores.

With the Downloadable News factor as the predictor variable, the regression model was significant, [$F(1, 103)=14.68$, $p<.01$] with a low R^2 of .22 indicating that 22% of the variance in attentiveness of hospital staff scores can be explained by the predictor variable. The Downloadable News factor was also statistically significant ($\beta=.28$, $p<.01$) (Table 4-13). This indicates that the Downloadable News factor was positively related to attentiveness of hospital staff scores. Thus, the Downloadable New factor was a predictor of attentiveness of hospital staff scores.

The regression was significant [$F(1, 103)=20.50, p<.01$] when the Events Sign Up factor served as the predictor variable. There was a moderate R^2 of .29 indicating that 29% of the variance in attentiveness of hospital staff scores can be explained by the predictor variable. Specifically, the Events Sign Up factor was statistically significant ($\beta=.38, p<.01$), indicating that it was the best predictor of attentiveness of hospital staff scores (Table 4-13).

When the Social Media factor served as the predictor variable, the regression was significant [$F(1, 103)=11.56, p<.01$]. A low R^2 of .19 indicated that 19% of the variance in attentiveness of hospital staff scores could be explained by the predictor variable. As shown in Table 4-13, the Social media factor was statistically significant ($\beta=-.20, p<.05$). That is, the Social Media factor was a predictor of attentiveness of hospital staff scores.

Six regression models were found to be significant; however, the predictor variables within these regressions were not significant. For instance, with the Response factor as the predictor variable, the regression model was significant [$F(1, 103)=9.20, p<.01$] with a low R^2 of .15 indicating that 15% of the variance in attentiveness of hospital staff scores can be explained by the predictor variable. The Response factor was not statistically significant ($\beta=.04, p>.05$) (Table 4-13). This indicates that the Response factor was not a predictor of attentiveness of hospital staff scores.

The same holds true when the Tour factor is used as the predictor variable; the regression model is significant [$F(1, 103)=9.13, p<.01$] with a low R^2 of .15 indicating that 15% of the variance in attentiveness of hospital staff scores can be explained by the predictor variable. However, the Tour factor was not statistically significant ($\beta=.03,$

p>.05), indicating that the Tour factor was not a predictor of attentiveness of hospital staff scores (Table 4-13).

The regression was significant [$F(1, 103)=10.85, p<.01$] when the Audio Facts factor served as the predictor variable. There was a low R^2 of .18 indicating that 18% of the variance in attentiveness of hospital staff scores can be explained by the predictor variable. Nonetheless, the Audio Facts factor was not statistically significant ($\beta=.17, p>.05$), indicating that it was not a predictor of attentiveness of hospital staff scores (Table 4-13).

The regression was also significant [$F(1, 103)=9.20, p<.01$] when the Search factor served as the predictor variable. There was a low R^2 of .15 indicating that 15% of the variance in attentiveness of hospital staff scores can be explained by the predictor variable. Nonetheless, the Search factor was not statistically significant ($\beta=.04, p>.05$), indicating that it was not a predictor of attentiveness of hospital staff scores (Table 4-13).

When the Update Important Information factor was used as the predictor variable, the regression model was significant [$F(1, 103)=9.98, p<.01$] with a low R^2 of .16 indicating that 16% of the variance in attentiveness of hospital staff scores can be explained by the predictor variable. Likewise, when the Interactive Feeds factor was used as the predictor variable, the regression model was also significant [$F(1, 103)=9.88, p<.01$] with a low R^2 of .16, indicating that 16% of the variance in attentiveness of hospital staff scores can be explained by the predictor variable. However, neither the Update Important Information factor ($\beta=.11, p>.05$) nor the Interactive Feeds factor ($\beta=.11, p>.05$) were significant. This indicates that neither of

these factors serves as good predictors of attentiveness of hospital staff scores (Table 4-13).

Communication about medications

In terms of communication about medications scores, the regression was significant [$F(1, 103)=12.34, p<.01$] when the Quality Awards factor served as the predictor variable. There was a low R^2 of .20 indicating that 20% of the variance in communication about medications scores can be explained by the predictor variable. The Quality Awards factor was also statistically significant ($\beta=.31, p<.01$), indicating that it was a good predictor of communication about medications scores (Table 4-14).

When the Organization Information factor served as the predictor variable, the regression was significant [$F(1, 103)=11.10, p<.01$]. A low R^2 of .18 indicated that 18% of the variance in communication about medications scores could be explained by the predictor variable. Moreover, the Organization Information factor was statistically significant ($\beta=.29, p<.01$), indicating that it was a predictor of communication about medications scores (Table 4-14).

The regression was significant [$F(1, 103)=13.86, p<.01$] when the Events Sign Up factor served as the predictor variable. There was a low R^2 of .21 indicating that 21% of the variance in communication about medications scores can be explained by the predictor variable. Additionally, the Events Sign Up factor was significant ($\beta=.34, p<.01$). This indicates that the Events Sign Up factor is the best predictor of communication about medications scores (Table 4-14).

Nine regression models were found to be significant; however, the predictor variables within these regressions were not significant. For instance, with the Response factor as the predictor variable, the regression model was significant [$F(1, 103)=6.12,$

$p < .01$] with a low R^2 of .11 indicating that 11% of the variance in communication about medications scores can be explained by the predictor variable. The Response factor was not statistically significant ($\beta = .04$, $p > .05$) (Table 4-14). This indicates that the Response factor was not a predictor of communication about medications scores.

Furthermore, when the Survey factor is used as the predictor variable; the regression model is significant $F(1, 103) = 7.89$, $p < .01$] with a low R^2 of .13 indicating that 13% of the variance in communication about medications scores can be explained by the predictor variable. However, the Survey factor was not statistically significant ($\beta = .17$, $p > .05$), indicating that the Survey factor was not a predictor of communication about medications scores (Table 4-14).

The same holds true when the Tour factor is used as the predictor variable; the regression model is significant $F(1, 103) = 6.14$, $p < .01$] with a low R^2 of .11 indicating that 11% of the variance in communication about medications scores can be explained by the predictor variable. However, the Tour factor was not statistically significant ($\beta = .05$, $p > .05$), indicating that the Tour factor was not a predictor of communication about medications scores (Table 4-14).

The regression was significant [$F(1, 103) = 8.11$, $p < .01$] when the Audio Facts factor served as the predictor variable. There was a low R^2 of .14 indicating that 14% of the variance in communication about medications scores can be explained by the predictor variable. Nonetheless, the Audio Facts factor was not statistically significant ($\beta = .20$, $p > .05$), indicating that it was not a predictor of communication about medications scores (Table 4-14).

When the Downloadable News factor was used as the predictor variable, the regression model was significant [$F(1, 103)=7.68, p<.01$] with a low R^2 of .13, indicating that 13% of the variance in communication about medications scores can be explained by the predictor variable. Still, the Downloadable News factor was not statistically significant ($\beta=.17, p>.05$), indicating that the Downloadable News factor was not a predictor of communication about medications scores (Table 4-14).

The regression was also significant [$F(1, 103)=7.32, p<.01$] when the Search factor served as the predictor variable. There was a low R^2 of .13 indicating that 13% of the variance in communication about medications scores can be explained by the predictor variable. Nonetheless, the Search factor was not statistically significant ($\beta=.15, p>.05$), indicating that it was not a predictor of communication about medications scores (Table 4-14).

When the Update Important Information factor was used as the predictor variable, the regression model was significant [$F(1, 103)=6.78, p<.01$] with a low R^2 of .12 indicating that 12% of the variance in communication about medications scores can be explained by the predictor variable. The Update Important Information factor was not significant ($\beta=.11, p>.05$). This indicates that the Update Important Information factor is not a good predictor of communication about medications scores (Table 4-14).

Finally, when the Interactive Feeds factor was used as the predictor variable, the regression model was significant [$F(1, 103)=7.22, p<.01$] with a low R^2 of .12, indicating that 12% of the variance in communication about medications scores can be explained by the predictor variable. Likewise, when the Social Media factor was used as the predictor variable, the regression model was also significant [$F(1, 103)=7.66, p<.01$]

with a low R^2 of .13, indicating that 13% of the variance in communication about medications scores can be explained by the predictor variable. However, neither the Interactive Feeds factor ($\beta=.14$, $p>.05$) nor the Social Media factor ($\beta=.13$, $p>.05$) were significant. This indicates that neither of these factors serves as good predictors of communication about medications scores (Table 4-14).

Table 4-1. Frequencies of dialogic features on hospital Web sites

Dialogic features	Percentage (%) of organizations (n=105)
<i>Dialogic Loop</i>	
General contact information	99.0
Opportunity for user-response	45.7
Regular information email/subscribe	37.1
User survey	7.6
Recognize hospital staff	6.7
Opportunity for online consultation	4.8
Online polling	1.0
<i>Usefulness of Information for Patients</i>	
Description of services	99.0
Logo of organization on home page	99.0
Ability to find a physician	94.3
Identification of organizational key members	76.2
Awards	58.1
Option to pay bill/make appointment/refill prescriptions	55.2
Quality measures	52.4
Patient testimony/stories	34.3
Virtual tour	26.7
<i>Usefulness of Information for the General Public</i>	
Statement of philosophy/mission	86.7
Press release/press room/news room	86.7
Donation opportunities	76.2
Volunteer opportunities	73.3
Organizational history	68.6
Organizational publications	62.9
General organizational facts	61.9
Audio/visual capabilities	53.3
Annual report	34.3
<i>Generation of Return Visits</i>	
Links to external Web sites	91.1
Downloadable information	72.4
Calendar of events	69.5
FAQs/Q&As	49.5
Posting of news stories within last 30 days	47.6
Ability to request information by mail/email	41.9
Ability to register/log-in to personalized Web page	41.9
Ability to register/sign-up for classes/groups/events	19.0
Option to "bookmark now"	10.5
Explicit statements that invite users to return	10.5
Forums	0

Table 4-1. Continued

Dialogic features	Percentage (%) of organizations (n=105)
<i>Ease of Interface</i>	
Links to home page	98.1
Major links on front page to rest of site	98.1
Search engine box	74.3
Low reliance on graphics	61.9
Site maps	47.6
<i>Conservation of Visitors</i>	
Important information available on the home page	89.5
Loading times are less than four seconds	70.5
Posting of last updated time and/or date	18.1
<i>Web 2.0</i>	
Ecards	47.6
Interactive content	47.6
Links to social networking sites	21.9
RSS feeds	19.0
Microblog	17.1
Podcasts/Vodcasts/Webcast	10.5
YouTube	9.5
Blogs	6.7

Table 4-2. Factor loadings based on exploratory factor analysis with oblimin rotation for 4 items from dialogic loop dimension

Item	Response factor	Survey factor
User response feature	.62	
Ability to recognize a hospital staff member	.46	
Regular information offered through email/subscription	.46	.40
User survey		.51

Table 4-3. Factor loadings based on exploratory factor analysis with oblimin rotation for 8 items from usefulness of information for patients dimension

Item	Quality awards factor	Tours factor
Hospital quality measures	.69	
Award information	.58	
Patient testimony or stories	.57	
Option to pay bills, make appointment, and/or refill prescriptions online	.55	
Financial and/or insurance information	.39	
Identification of organizational key members		
Virtual tours	.38	.54
Ability to find a physician		

Table 4-4. Factor loadings based on exploratory factor analysis with oblimin rotation for 9 items from usefulness of information for the general public dimension

Item	Organization information factor	Audio facts factor
Donation opportunities and/or information	.84	
Organizational history	.52	
Annual reports	.35	
Press releases, press room, and/or news room	.31	
General organizational facts		.69
Audio and/or visual capabilities		.52
Volunteer opportunities and/or information		
Organizational publication		
Statement of philosophy and/or mission statement		

Table 4-5. Factor loadings based on exploratory factor analysis with oblimin rotation for 6 items from generation of return visits dimension

Item	Downloadable news factor	Events sign up factor
Downloadable information	.94	
News stories posted within last 30 days	.36	.35
Links to external Web sites		
Calendar of events		.68
Ability to register for classes/support groups/events online		.35
Ability to request information by mail and/or email		

Table 4-6. Factor loadings based on exploratory factor analysis with oblimin rotation for 2 items from ease of interface dimension

Item	Search factor
Site maps	.59
Search engine box	.59

Table 4-7. Factor loadings based on exploratory factor analysis with oblimin rotation for 3 items from conservation of visitors dimension

Item	Update important information factor
Indication of last updated time and/or date	.50
Important information available on home page	.32
Load times that are less than four seconds	

Table 4-8. Factor loadings based on exploratory factor analysis with oblimin rotation for 7 items from Web 2.0 dimension

Item	Interactive feeds factor	Social media factor
Podcast/Vodcast/Webcast	.81	
RSS feeds	.67	
Blogs or links to blogs	.56	
Links to YouTube channel	.53	
Interactive content	.43	
Links to social networking sites		-.93
Microblogs		-.78

Note: The Social Media factor scores appeared negative in the pattern matrix. However, given that these scores were obtained through oblique rotation, negative relationships were not implied. Therefore, subsequent uses of the Social Media factor scores will be interpreted as having positive relations, despite the negative symbol present.

Table 4-9. Correlation between dialogic factor groups to test for multicollinearity

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Response	-											
2. Survey	.05	-										
3. Quality awards	.45**	.30**	-									
4. Tour	.12	.02	.21*	-								
5. Organization information	.05	.15	.46**	.05	-							
6. Audio facts	.31**	.17	.59**	.06	.57**	-						
7. Downloadable news	.11	.20*	.41**	.04	.54**	.38**	-					
8. Events sign up	.33**	.14	.35**	-.02	.35**	.25*	.42**	-				
9. Search	.38**	.14	.44**	.14	.27**	.53**	.10	.23*	-			
10. Update important information	.06	.16	.21*	.02	.20*	.14	.23*	.23*	.08	-		
11. Interactive feeds	.25**	.08	.42**	.22*	.27**	.35**	.14	.25*	.31**	.04	-	
12. Social media	-.25*	-.25*	-.40**	-.05	-.22*	-.34**	-.15	-.27**	-.27**	-.13	-.45**	-

Note: The Social Media factor scores appeared negative in the pattern matrix. However, given that these scores were obtained through oblique rotation, negative relationships were not implied. Therefore, subsequent uses of the Social Media factor scores will be interpreted as having positive relations, despite the negative symbol present. *p<.05. **p<.01.

Table 4-10. Beta coefficients of predictor variables based on 12 individual hierarchical regression analyses for predicting overall patient rating of hospital

Regression	Predictor variable	Beta	t	Sig.
1	Response	.12	1.16	.25
2	Survey	.18	1.80	.08
3	Quality awards	.25	4.83	.01**
4	Tour	.06	.56	.58
5	Organization information	.28	2.73	.01**
6	Audio facts	.22	2.10	.04*
7	Downloadable news	.24	.24	.02*
8	Events sign up	.33	3.44	.01**
9	Search	.17	1.68	.10
10	Update important information	.16	1.62	.12
11	Interactive feeds	.24	2.35	.02*
12	Social media	-.13	-1.27	.21

Dependent variables: Overall patient rating of hospital. The Social Media factor scores appeared negative in the pattern matrix. However, given that these scores were obtained through oblique rotation, negative relationships were not implied. Therefore, subsequent uses of the Social Media factor scores will be interpreted as having positive relations, despite the negative symbol present. * $p < .05$. ** $p < .01$.

Table 4-11. Beta coefficients of predictor variables based on 12 individual hierarchical regression analyses for predicting doctor communication scores.

Regression	Predictor variable	Beta	t	Sig.
1	Response	.22	2.23	.03*
2	Survey	.20	2.04	.04*
3	Quality awards	.32	3.23	.01**
4	Tour	-.02	-.20	.85
5	Organization information	.34	3.35	.01**
6	Audio facts	.21	2.04	.04*
7	Downloadable news	.21	2.10	.04*
8	Events sign up	.30	3.21	.01**
9	Search	.19	1.92	.06
10	Update important information	.11	1.14	.26
11	Interactive feeds	.14	1.38	.17
12	Social media	-.25	-2.43	.02*

Dependent variables: Doctor communication score. The Social Media factor scores appeared negative in the pattern matrix. However, given that these scores were obtained through oblique rotation, negative relationships were not implied. Therefore, subsequent uses of the Social Media factor scores will be interpreted as having positive relations, despite the negative symbol present. * $p < .05$. ** $p < .01$.

Table 4-12. Beta coefficients of predictor variables based on 12 individual hierarchical regression analyses for predicting nurse communication scores

Regression	Predictor variable	Beta	t	Sig.
1	Response	.08	.83	.41
2	Survey	.17	1.80	.08
3	Quality awards	.36	3.86	.01**
4	Tour	.01	.10	.92
5	Organization information	.37	3.75	.01**
6	Audio facts	.23	2.23	.03*
7	Downloadable news	.27	2.73	.01**
8	Events sign up	.45	5.15	.01**
9	Search	.06	.63	.53
10	Update important information	.13	1.32	.19
11	Interactive feeds	.15	1.52	.13
12	Social media	-.20	-2.03	.05*

Dependent variables: Nurse communication score. The Social Media factor scores appeared negative in the pattern matrix. However, given that these scores were obtained through oblique rotation, negative relationships were not implied. Therefore, subsequent uses of the Social Media factor scores will be interpreted as having positive relations, despite the negative symbol present. * $p < .05$. ** $p < .01$.

Table 4-13. Beta coefficients of predictor variables based on 12 individual hierarchical regression analyses for predicting discharge information scores

Regression	Predictor variable	Beta	t	Sig.
1	Response	.15	1.46	.15
2	Survey	.18	1.80	.07
3	Quality awards	.39	4.07	.01**
4	Tour	.13	1.32	.19
5	Organization information	.38	3.83	.01**
6	Audio facts	.27	2.54	.01**
7	Downloadable news	.26	2.62	.01**
8	Events sign up	.29	2.98	.01**
9	Search	.07	.73	.47
10	Update important information	.20	2.02	.05*
11	Interactive feeds	.22	2.22	.03*
12	Social media	-.13	-1.24	.22

Dependent variables: Discharge information score. The Social Media factor scores appeared negative in the pattern matrix. However, given that these scores were obtained through oblique rotation, negative relationships were not implied. Therefore, subsequent uses of the Social Media factor scores will be interpreted as having positive relations, despite the negative symbol present. * $p < .05$. ** $p < .01$.

Table 4-14. Beta coefficients of predictor variables based on 12 individual hierarchical regression analyses for predicting attentiveness of hospital staff scores

Regression	Predictor variable	Beta	t	Sig.
1	Response	.04	.46	.65
2	Survey	.21	2.34	.02*
3	Quality awards	.32	3.54	.01**
4	Tour	.03	.30	.76
5	Organization information	.33	3.56	.01**
6	Audio facts	.17	1.74	.09
7	Downloadable news	.28	3.09	.01**
8	Events sign up	.38	4.41	.01**
9	Search	.04	.47	.64
10	Update important information	.11	1.24	.22
11	Interactive feeds	.11	1.17	.24
12	Social media	-.20	-2.05	.04*

Dependent variables: Attentiveness of hospital staff score. The Social Media factor scores appeared negative in the pattern matrix. However, given that these scores were obtained through oblique rotation, negative relationships were not implied. Therefore, subsequent uses of the Social Media factor scores will be interpreted as having positive relations, despite the negative symbol present. * $p < .05$. ** $p < .01$.

Table 4-15. Beta coefficients of predictor variables based on 12 individual hierarchical regression analyses for predicting communication about medications scores

Regression	Predictor variable	Beta	t	Sig.
1	Response	.04	.46	.65
2	Survey	.17	1.84	.07
3	Quality awards	.31	3.37	.01**
4	Tour	.05	.49	.62
5	Organization information	.29	.29	.01**
6	Audio facts	.20	1.94	.06
7	Downloadable news	.17	1.73	.09
8	Events sign up	.34	3.75	.01**
9	Search	.15	1.53	.13
10	Update important information	.11	1.78	.24
11	Interactive feeds	.14	1.48	.14
12	Social media	-.17	-1.72	.09

Dependent variables: Communication about medications score. The Social Media factor scores appeared negative in the pattern matrix. However, given that these scores were obtained through oblique rotation, negative relationships were not implied. Therefore, subsequent uses of the Social Media factor scores will be interpreted as having positive relations, despite the negative symbol present. * $p < .05$. ** $p < .01$.

CHAPTER 5 DISCUSSION

This study sought to examine what types of dialogic tools are being used on hospital Web sites to potentially create, foster and maintain dialogue with target publics. Moreover, this study sought to explore the relationship between dialogic features and hospital size, as well as the relationship between dialogic features and organizational success, namely overall patient ratings and communication scores. A discussion of the results and implications of this study follows.

Dialogic Features

The first research question asked what types of dialogic tools are present on hospital Web sites. This study found that hospital Web sites incorporated dialogic features to varying degrees. While ease of interface, usefulness of information, and conservation of visitors features were frequently present on hospital Web sites, generation of return visits, dialogic loop and Web 2.0 features were lacking. These features are explored individually below.

Ease of Interface

Among all the dialogic dimensions, ease of interface had the highest presence on hospital Web sites. Almost all, 98.1%, of the sites contained links to the home page and major links on the front page to the rest of the site, while 74.3% and 61.9% of the sites contained search engine boxes and low reliance on graphics, respectively. The presence of these features indicates that hospital Web sites are intuitively navigable and easy for visitors to use and understand (Kent & Taylor, 1998). Furthermore, these features are good predictors of dialogic potential because the more navigable, or “user-friendly,” a Web site is, the more likely a visitor is to return (Taylor et al., 2001, p.269).

Despite the presence of ease of interface features on hospital Web sites, there is still room for improvement, especially when it comes to the use of site maps, which were present on only 47.6% of the sites. Site maps allow visitors to navigate the entire Web site from one location, making it so visitors can find information quickly while avoiding seemingly random paths and links. If a visitor is unable to find the information they want quickly and easily, they may not be encouraged to return. Thus, the presence of this feature is important since it can help establish “Webbed” dialogue (Taylor et al., 2001, p.269).

Usefulness of Information for the General Public

Usefulness of information for the general public has the second highest presence on hospital Web sites. One of the major items associated with this feature was philosophy and/or mission statements, which were present on 86.7% of the sites. Hospitals can gain trust with their patients thorough their philosophy and/or mission statements, by both creating and projecting a set of skills that their constituents recognize as unique and valuable (Petromilli & Michalczyk, 1999, p.6) Ideally, these skills would be highly valued by patients, unique from competitors, credible, and aligned with the hospital’s strengths and capabilities (Petromilli & Michalczyk, 1999, p.6).

In addition to philosophy and/or mission statements, press releases, press rooms and/or news rooms were also prominently featured on 86.7% of the sites, along with donation and volunteer opportunities and/or information, which were available on 76.2% and 73.3% of the sites. These features, particularly volunteer and donation opportunities, allow visitors to become not only knowledgeable, but empowered. By giving visitors the option to volunteer and/or donate, hospitals are allowing visitors to

become invested in the organization. This can help strengthen organizational-public relationships and encourage return visits to the site.

When it comes to usefulness of information, Kent and Taylor (1998) argue that organizations should make an effort to include information “of general value to all publics,” including organizational background information (Kent & Taylor, 1998, p. 327). Only slightly less than two thirds of the hospitals in this study attempted to provide background information, with features such as organizational history, organizational publications, and general organizational facts being present on only 68.6%, 62.9%, and 61.9% of the sites, respectively. This suggests that hospitals are not considering all publics –both generic and particular – as well as they could in terms of providing useful information.

Other usefulness of information items for the general public that need improvement include audio and/or visual capabilities, which was present on 53.3% of the sites, and annual reports, which were present on only 34.3% of the sites. These features can provide valuable information to visitors and can make a hospital appear more open and transparent with their communication. Without these features, hospital Web sites are not living up to their fullest potential of becoming a “well organized information extension” of the organization (Kent & Taylor, 1998, p. 328).

Usefulness of Information for Patients

The usefulness of information for patients dimension was slightly less prevalent than the usefulness of information for the general public dimension, which is interesting since patients tend to be hospitals’ target public. The most prevalent items associated with this feature, which were present on 99% of the sites, included descriptions of services and prominent logos of the organization on the home page. This indicates that

the majority of hospitals are attempting to give basic information about what they can provide patients. Additionally, logos on the home page help create a “sense of identification for members and visitors,” which, in turn, helps build organizational-public relationships (Taylor et al., 2001, p.270).

The ability to find a physician was another prominent feature, with a presence on 94.3% of the Web sites. This feature was another way to gain trust through the release of physician and administration background information. This information, listed in a profile, typically focused on such things as education, accreditations, specialties, interests, and contacts. Listing this type of information showed the hospital’s objective to be open and honest. Most hospitals require customers to provide personal information but by offering personal information on its physicians and administrators as well, a company is able to improve the rate of informational transparency and mutual trust. In addition, the placement of an employee’s photo on the profile further enhances customer confidence since consumers can literally visualize (i.e. connect with) that individual. Likewise, the inclusion of financial and/or insurance information, which was present on 76.2% of the sites, helps to improve the rate of informational transparency and mutual trust through the disclosure of medical costs and billing procedures.

Several items were lacking in terms of the usefulness of information for patients feature. For instance, background information was only present in 58.1% of the sites identifying key organizational members and 55.2% providing award information. More hospitals need to promote these features, particularly in regards to award information. Typically, if a hospital met with the correct regulations and standards of specific stakeholders, a token or seal will be granted. The purpose of such token or seal affects

customer's trust rate dramatically, because it is a verification that the hospital meets or exceeds expectations in one way or another. Thus information about hospital awards should be more prominent in order to highlight the organizations ability to meet various stakeholders' demands.

Another feature that should have more prominence on hospital Web sites is the option to pay bills, make appointments and/or refill prescriptions online. Only half of the sites, approximately 55.2%, gave patients this option. This is a relatively new feature implemented by hospitals which allows for transactions to take place between patients and hospitals online. However, one of the benefits of these online transactions is that they are fairly simple to handle. Additionally, response times on such items are relatively quick and efficient. In this manner, consumers are not only getting the attention they think they need, they are freeing up extra time to do other things. Therefore, this feature has great potential as a dialogic tool; however, hospitals have yet to fully implement it into their sites.

Taking into account that customers are predisposed to turn to hospitals for information, the opportunity is there for hospitals to take a lead role in defining what quality is and promoting their quality (Cross, 2003, p.7). However, only 52.4% of the sites in this study linked to or talked about quality measures. This is a low percentage considering the government-mandate requiring hospitals to make public their cost, quality, and performance data (as cited in Burdette, 2007). What's more, by releasing quality data, hospitals are giving customers the ability to make informed decisions about the organization. Therefore, hospitals need to make more of an effort to incorporate

quality measures into their Web sites in order to create positive attitudes about the organization (Kent & Taylor, 1998).

The least prominent features associated with usefulness of information for patients were patient testimony or stories and virtual tours, which were present on 34.3% and 26.7% of the sites. A possible interpretation for this result is that hospitals want to personalize patient information; therefore they do not include stories about other patients. At the same time, virtual tours are usually composed of panoramic images which give viewers the sense of actually walking through the space; however, some hospitals may not have the technology to incorporate these images into their Web site. Nevertheless, these features allow patients to see what the hospital is like, both from another person's perspective and structurally. Therefore they offer new and unique insight into the hospital.

Conservation of Visitors

The conservation of visitors dimension was present on hospital Web sites. In particular, 98.5% of hospital Web sites made important information available on their home page. Important information, in this case, is information that would inform and aid a visitor in making a healthcare decision. This may include a list of services, a staff directory, links to specific departments, etc. The placement of this information on the home page is important because the home page is considered to be central to Web-based communication. Specifically, the home page provides a kind of "front door" to all messages contained in the site and as a result many visitors decide whether they will continue to browse a site based on their first impression of the home page (Ha & James, 1998). Therefore, if important information is available, visitors are more likely to stay on the Web site and build a relationship with the organization.

Another aspect of the conservation of visitors feature deals with loading times of Web sites. Specifically, long load times tend to deter visitors from remaining on the site. Therefore, Kent and Taylor argue that load times should be less than four seconds in order to conserve visitors on the Web site. Of the hospitals analyzed in this study, 70.5% had initial load time of less than four seconds. This indicates that the majority of hospitals are maintaining the functionality of their site as well as their bandwidth.

A major feature that needs improvement involves the posting of last updated time and/or date on the Web site. Only 18.1% of hospitals disclosed when they last updated a site or Web page. Sites that contain limited or unchanging information are considered no longer useful after one visit and they typically do not encourage return visits; however, sites that do contain updated information suggest that an organization is responsible because they are providing publics with “valuable” and timely information (Kent & Taylor, 1998. p. 329). Consequently, as Kent and Taylor (1998) point out, updating information is “an easy way for public relations practitioners to create the condition for dialogic relationships” (p. 329).

Generation of Return Visits

Under the generation of return visits principle, practitioners must find ways to create the foundation for long-lasting relationships with publics online (McAllister-Spooner, 2009). This means developing Web sites that contain attractive features which repeatedly bring visitors back (Kent & Taylor, 1998). Unfortunately, the generation of returns dimension was not very prevalent on hospital Web sites.

The most prominent feature within this dimension was links to external Web sites, which were present on 97.1% of the sites. While research suggests that corporations and profit-seeking organizations should try to keep visitors on their own Web site by

limiting the amount of external links (Taylor et al., 2001, p.270), healthcare is a unique business that fluctuates somewhere between competitive and charitable. Because hospitals can also be seen as a social organization, the presence of external links can be viewed as a way of establishing credibility and identifying with other reputable and “like-minded” organizations, such as the American Heart Association (Taylor et al., 2001, p.270). Thus, by linking to other “reputable” sites, hospitals are furnishing their patients with much-needed resources for facts and data about health topics. Providing these resources may enhance the relationship between the patient and the hospital.

The presence of downloadable information and calendars of events were major aspects of the generation of return visits dimension, with 72.4% and 69.5% of sites containing these items. These features allow visitors to have up-to-date information that they can look-up, print-out, and frequently check. What’s more, 49.5% of sites contained frequently asked questions and/or question and answer forums, 47.6% of sites contained news stories that were posted in the last 30 days, and 41.9% contained the ability to request information by mail and/or email. These features also encourage visitors to return to the site to check for updates and new information.

Several features are lacking when it comes to the generation of return visits dimension. To begin, hospital Web sites could improve interactivity by implementing more personalized Web pages that have the ability to collect information at the individual level and use that data to create information intensive customer management strategies (Glazer, 1999). As it were, only 41.9% of hospitals offered this feature. At the same time, only 19% of the sites had the ability to register/sign-up for classes, groups, and/or events online. Much like the option to pay bills, make appointments and/or refill

prescriptions online, this feature is fairly simple to handle and gives both visitors and the organization extra time to do other things.

Several items within the generation of return visitors dimension have a low presence online. These features include the option to “bookmark now” and explicit statements that invite users to return, which were both present on 10.5% of the sites. The option to bookmark is essential because it facilitates easy returns to the site for visitors. Moreover, the option to bookmark a Web site or Web page helps promote the hospital, since many visitors bookmark to their personal blogs or social networks. Thus, bookmarks can help develop new organizational-public relationships, as well as maintain existing ones. Concurrently, explicit statements that encourage visitors to return are important because they can tell people to come back and check for updates. By letting visitors know that updated information is posted, Web sites become more valuable and credible and people are more likely to visit the site repeatedly.

Out of all the dialogic dimensions and items, the final feature within the generation of return visits dimension has the lowest presence on hospital Web sites. In fact, none of the hospital Web sites had forums on their sites. This may be due to the very nature of forums. Specifically, forums are not conducive environments in which to receive reliable or accurate information because forums are formalized Internet chat rooms where everyone, and anyone, can share experiences, advice and information. It can sometimes be difficult to ascertain the quality of the information one finds online and, in certain instances, following health advice that is not grounded in empirical research or clinical judgment can be harmful or even deadly. Therefore the lack of online forums on hospital Web sites is understandable.

Dialogic Loop

Developing interactive communication strategies is a key component to building stronger organizational-public relationships. With that in mind, the hospitals in this study only marginally incorporated dialogic loop features on their Web sites.

The most frequent item associated with the dialogic loop dimension was general contact information, which was present on 99% of the sites. This feature includes emails, phone numbers, and/or contact forms for administration staff, doctors, nurses, departments, etc. The convenience to contact a hospital and its staff either by phone, email, or embedded mail forms should not be underestimated; a fact which most hospitals seemed to have considered.

However, there was little opportunity for user-response on hospital Web sites. In fact, only 45.7% of the Web sites in this study offered this feature. This type of feedback is a crucial component in the two-way process between an organization and its constituents. It is through the nature and quality of this feedback that a hospital can determine how well a brand message is being received, since feedback is essentially the consumer's response to a brand message (Davenport, Harris, & Kohli, 2001). The danger of ignoring the voice of the customer and the necessity of answering customer's questions expediently and personally are therefore crucial for building organizational-public relationships.

Not much consideration was taken regarding regular information available through mail and/or subscription, which was present on 37.1% of the sites. Still, Kent and Taylor (1998) point out the significance of this feature, citing that "information that can be distributed automatically is more desirable than information that must be solicited;" therefore, Web sites that allow publics to sign-up for mailing lists are ahead

of competing organizations that require their publics to simply “request” information (p. 328). In short, if hospitals want to differentiate themselves, they need to make regular information available through mail and/or subscriptions.

The final items within this dimension have room for improvement. For instance, only 7.6%, 6.7%, 4.8%, and 1% respectively of sites contained user surveys, the ability to recognize hospital staff, an opportunity for online consultation, and online polling. Through these feedback response techniques both consumers and hospitals would be able to communicate directly with each other regardless of distance or time. However, the majority of hospitals in this study are not using these features to their advantage.

In the end, fast and efficient response to a customer’s request assures that the company cares about consumers’ needs personally. However, finding the actual response time of hospital feedback methods was not within the scope of this study.

Web 2.0

The advancement of Web-based technology has brought new and revolutionary development to the field of public relations (Wright & Hinson, 2009). Nevertheless, the greatest room for improvement resides in the Web 2.0 dimension. Less than half of the hospitals analyzed had any of the Web 2.0 features, the most prominent features being the ability to send ecards and/or email a patient and interactive content, which were present on 47.6% of the sites.

Social media tools had an even lower presence, with 21.9% of sites containing links to social networking sites such as Facebook, 19% of sites containing RSS feeds, 17.1% of sites containing links to microblogs such as Twitter, 10.5% of sites containing podcasts, 9.5% of sites containing links to YouTube channels, and 6.7% of sites containing blogs. This indicates that despite the fact that the health industry is becoming

more enlightened and aware of the potential benefits offered through Web technology (Sanchez, 2000), the number of hospitals utilizing Web 2.0 tools such as social media is still rather low.

Nevertheless, to keep up with the growing demand from visitors, newer dialogic tools, such as social media, need to be offered more readily by hospitals. It is imperative to do so in order to not be left behind by other industries and organizations and to expand the field of health communication into the twenty-first century.

Hospital Size

According to Taylor and Kent (2004), both small organizations and large organizations alike can now use the Internet to promote their mission, products, and services. Hence, the second research question in this study sought to find whether a relationship exists between hospital size and dialogic tool use.

The results indicated that a positive correlation exists between hospital size and total number of dialogic tools present on the Web site. In other words, larger hospitals tend to have more dialogic features present whereas smaller hospitals tend to have less dialogic features present on their Web sites.

A number of factors are contributing to this correlation. For instance, there was a positive correlation between hospital size and the Organization Information and Audio Facts factors. This indicates that larger hospitals are more likely to feature items associated with the usefulness of information for general public dimension than smaller hospitals. At the same time, there was a positive correlation found between hospital size and the following factors: Interactive Feeds and Social Media. This indicates that larger hospitals are more likely than smaller hospitals to feature these items, which are associated with the principles of Web 2.0. A correlation was also found between

hospital size and four of the factor groups: Response, Quality Awards, Search, and Downloadable News. This also means that the larger the hospital, the more likely these features, which are associated with the dialogic loop, usefulness of information for patients, ease of interface, and generation of return visits principles, will be present on the Web site.

While these correlations do not imply a causal relationship, these correlations suggest that smaller hospitals are not utilizing online dialogic communication tools. This may be due to several reasons. Firstly, larger hospitals may have larger staff capacities, which may mean more people are able to develop, monitor and maintain the Web site. At the same time, larger hospitals may have larger revenues than smaller hospitals, which can be used in marketing and public relations efforts, such as on expansive Web design. Therefore it is not surprising that larger hospitals tend to have higher numbers of dialogic tools present on their Web sites.

Organizational Success

Overall Patient Ratings

Many scholars argue that for corporate reputation to be maintained properly, corporations should manage good long term-relationships with their strategic constituents (Yang, 2007, p. 95). As it were, dialogic communication created by the strategic use of the Internet is one way healthcare providers can build long-term relationships with their key publics (Kent & Taylor, 1998). With this in mind, the third research question in this study sought to explore the relationship between dialogic tool use and overall patient ratings of the hospitals.

A positive correlation was found indicating a linear relationship between overall patient ratings and total number of dialogic tools present on hospital Web sites. This

suggests that hospitals with higher overall patient ratings tend to have more dialogic features present on their Web site.

Specifically, the availability of features within the usefulness of information for patients dimension contributes significantly to this correlation. While this correlation does not imply causality, this correlation demonstrates that those hospitals providing more useful information tools to patients online tend to receive higher overall patient ratings in *Consumer Reports*.

Additionally, the availability of features within the generation of return visits dimension contributes significantly to this correlation, as do features within the usefulness of information for the general public dimension. Thus these correlations demonstrate that, when holding size constant, those hospitals generating more return visits and providing more useful information tools to the general public tend to receive higher overall patient ratings in *Consumer Reports*.

Communication Scores

The fourth research question in this study sought to examine the relationship between communication scores and dialogic tools use on hospital Web sites. The results of each communication score follows.

Doctor communication

A positive correlation was found between total number of dialogic tools present and doctor communication, indicating that hospitals with more dialogic features tend to have higher doctor communication scores. Specifically, the Organization Information factor significantly contributed to doctor communication scores. The Audio Fact factor also contributed, but to a lesser degree. Nevertheless, this suggests that usefulness of

information for the general public features on hospital Web sites are the best predictors of doctor communication scores when holding size constant.

At the same time, the Quality Awards factor was found to significantly contribute to doctor communication scores, as did both the Downloadable News factor and Events Sign Up factor. This suggests that features within the usefulness of information for patients dimension and the generation of return visits dimension are good predictors of doctor communication. To a lesser degree, Response and Survey factors contributed to doctor communication scores, as did the Social Media factor. This suggests that features within the dialogic loop dimension and Web-based services dimension also serve as predictors of doctor communication.

Nurse communication

The relationship between total number of dialogic tools and nurse communication scores was also significant. That is, hospitals with more dialogic tools tend to have higher nurse communication scores. The availability of features within the Downloadable News factor and Events Sign Up factor significantly contributed to nurse communication scores. This suggests that generation of return visits features on hospital Web sites are the best predictors of nurse communication scores when holding size constant.

Both the Organization Information factor and Audio Facts factor significantly contributed to nurse communication scores. Likewise, the Quality Awards factor also significantly contributed to nurse communication scores. This suggests that usefulness of information for the general public features and usefulness of information for patients features on hospital Web sites are good predictors of nurse communication scores. Similarly, the Social Media factor was found to contribute to nurse communication

scores, thus suggesting that features within the Web 2.0 dimension are also predictors of nurse communication scores.

Discharge information

A positive relationship was also found between total number of dialogic tools and discharge information scores, indicating that hospitals with more dialogic tools tend to have higher discharge information scores. The availability of features within the Quality Awards factor significantly contributed to discharge information scores. This suggests that, when holding size constant, usefulness of information for patients features on hospital Web sites are the best predictors of discharge information scores.

The availability of features within the Organization Information factor and Audio Facts factor significantly contributed to discharge information scores. This suggests that usefulness of information for the general public features on hospital Web sites are good predictors of nurse communication scores. At the same time, both the Downloadable News factor and Events Sign Up factor significantly contributed to discharge communication scores. Likewise, the Interactive Feeds factor also significantly contributed to discharge information scores. This suggests that generation of return visits features and Web 2.0 features on hospital Web sites are predictors of discharge information scores.

Attentiveness of hospital staff

While a significant relationship was not found between total number of dialogic tools and attentiveness of hospital staff scores, significant relationships were found between attentiveness of hospital staff scores and several of the predictor variables (i.e. factor groups). In particular, the Events Sign Up factor and Downloadable News factor were both positively related to attentiveness of hospital staff scores. This indicates that,

when holding size constant, features within the generation of return visits dimension tend to be the best predictors of attentiveness of hospital staff scores.

Both the Organization Information factor and Quality Awards factor significantly contributed to attentiveness of hospital staff scores. This suggests that features within both the usefulness of information for patients and usefulness of information for the general public dimensions are good predictors of attentiveness of hospital staff scores. Similarly, the Survey factor and Social Media factor were both found to contribute to attentiveness of hospital staff scores, thus suggesting that features within both the dialogic loop dimension and Web 2.0 dimension are predictors of attentiveness of hospital staff scores.

Communication about medications

While a significant relationship was not found between total number of dialogic tools and communication about medication scores, a significant relationship was found between communication about medications scores and several predictor variables. The most significant contributing factor was Events Sign up, which indicates that features within the generation of return visits dimension are the best predictors of communication about medications scores when holding size constant.

The availability of features within the generation of return visits dimension, specifically the Quality Awards factor, also contributes significantly to this correlation. Likewise, the availability of features within the usefulness of information for the general public dimension was found to contribute significantly to this correlation, particularly those features associated with the Organization Information factor. Thus these correlations demonstrate that, when holding size constant, those hospitals providing

more useful information tools to patients, and the general public, tend to receive higher communication about medications scores.

General Discussion

Usefulness of Information

Given that the usefulness of information for patients dimension and the usefulness of information for the general public dimension helps establish relationships by providing valuable information that patients and visitors can trust, it was not surprising to find that these dimensions were predictors of all the reputational scores, including overall patient ratings, doctor communication scores, nurse communication scores, discharge information scores, attentiveness of hospital staff scores, and communication about medications scores. Stakeholders expect organizations to provide useful and trustworthy information on their Web sites, which means organizations must provide information that their various stakeholders want, desire and value (Kent & Taylor, 1998).

While the usefulness of information for patient dimension had a relatively large presence on hospital Web sites, there is still room for improvement. For instance, the opportunity is there for hospitals to take the lead role in defining what quality is and promoting their own personal quality. What's more, in order to promote unique aspects and differentiate them from competitors, hospitals can share patient testimony and give virtual tours of their facilities. Similarly, another factor that needs to be taken into consideration is the usefulness of information for the general public dimension. While being a relatively prevalent dimension on hospital Web sites, improvement can still be made, particularly when it comes to incorporating annual reports and audio/visual capabilities.

Generation of Return Visits

Fombrun (1996) emphasized the impact and importance of organization-public relationships on corporate reputations when he said, "To acquire a reputation that is positive, enduring, and resilient requires managers to invest heavily in building and maintaining good relationships with their company's constituents" (p. 57). It is not surprising then that the generation of return visits dimension also served as a predictor for all the reputational ratings, especially given that it "establishes the conditions upon which relationship building can take place" (Taylor et al., 2001, p.270). That is, the generation of return visits principle takes into consideration that relationships are not established in "one-contact communication interactions," instead it emphasizes that building relationships take time and can only occur over repeat interactions (Taylor et al., 2001, p.270). Therefore, one would expect that hospital Web sites that encourage repeat visits would be able to establish stronger relationships with their publics.

Currently, the generation of return visits dimension is relatively low in terms of presence on hospital Web sites. Given the relationship between the generation of return visits dimension and organizational success, hospitals need to improve the way in which they motivate publics to revisit their Web sites. This includes adding frequently updated information, allowing visitors to subscribe to content, implementing more personalized Web pages, and giving visitors the option to bookmark the site.

Web 2.0

Despite its marginal presence on hospital Web sites, the Web 2.0 dimension still managed to be a predictor of several reputational scores, including doctor communication scores, nurse communication scores, discharge information scores, and attentiveness of hospital staff scores. This highlights the importance of Web 2.0

services as dialogic communication tools which have the potential to impact relationships between organizations and their publics.

Even though these features allow practitioners to reach out and engage their publics in unique, two-way, dialogic conversations, they had the lowest presence on hospital Web sites. This may highlight an underlying trend that “while advanced technology tools like chats, blogs, portals, instant messaging, podcasts, and RSS feeds are increasingly common features on the World Wide Web,” hospitals have yet to fully realize the potential of such features in the organization-public relationship process (Gordon, 2009, p.151).

As such, the greatest room for improvement lies within the Web 2.0 dimension. In particular, hospitals need to strategically incorporate features that can aid in the development of organizational-public relationships. This includes incorporating blogs and social media tools, such as Facebook and Twitter, into communication strategies.

Dialogic Loop

Like the Web 2.0 dimension, the dialogic loop principle still managed to be a predictor of several reputational scores, including doctor communication scores and attentiveness of hospital staff scores despite its infrequent use on hospital Web sites. This further emphasizes the importance of two-way dialogic communication in building organizational-public relationships. Therefore hospitals need to incorporate these features into their Web sites so as to open-up a conversation with their publics. Specifically, these dialogic loops features will allow publics to query and talk to organizations. At the same time, they will offer hospitals the opportunity to respond to questions, concerns and problems posed by various stakeholders as well (McAllister-Spooner, 2009).

CHAPTER 6 BENCHMARK ANALYSIS

A post-hoc study was conducted to further explore effective dialogic communication practices on hospital Web sites. The approach to this study was to identify hospital Web sites with high dialogic tool use and high organizational success which would make them good candidates for benchmarking. Specifically, four hospitals from the previous study were chosen for this benchmark analysis: Cleveland Clinic Foundation, Mayo Clinic, Johns Hopkins Hospital, and New England Baptist Hospital. These hospitals provided the highest number of dialogic tools on their Web sites and had overall reputational ratings above 70% based on *Consumer Reports*. Therefore they were ideal candidates for benchmarking best practices. What follows is a descriptive narrative of the dialogic tool use on these hospitals' Web sites, which may serve as benchmarks for effective dialogic communication practices on hospital Web sites.

Cleveland Clinic Foundation

The Cleveland Clinic Foundation is a part of the larger Cleveland Clinic organization. Located in Cleveland, Ohio, this 1080 bed facility received a 71% overall patient rating from *Consumer Reports*. A total of 44 dialogic tools were found to be present on the Web site.

Dialogic Loop

When it came to the dialogic loop dimension, the Cleveland Clinic Foundation offered several tools that could enable two-way communication. For instance, the site provided an opportunity for user response. Under the "Contact Us" section, visitors could submit questions or comments to the hospital using an online form. Furthermore,

the hospital offered online consultations for visitors seeking a second medical opinion. Specifically, Cleveland Clinic experts would render a medical second opinion that included treatment options or alternatives, as well as recommendations regarding future therapeutic considerations. Consultations also were available regarding health information topics. In this case, visitors could chat online with a health information search specialist in order to find the correct health information.

The site also included the use of user surveys. These surveys were often satisfaction surveys based on experiences with various departments within the hospital, such as the pharmacy. A customer satisfaction survey about the Web site itself was also distributed online randomly to site visitors. Visitors could also sign up for sixteen different newsletters online. These newsletters covered issues regarding general health and wellness, heart health, sports health, global patient services, health professionals, those interested in supporting Cleveland Clinic, and research news. Finally, general contact information was provided to visitors. This information came in the form of phone numbers for various departments and services and the general address of the hospital's main campus.

Usefulness of Information for Patients

The most basic usefulness of information tools present on the Web site's home page was the organization logo and award information, which claimed that Cleveland Clinic was one of America's top four hospitals, according to U.S. World News & World Report. Furthermore, virtual tours of various Cleveland Clinic locations were present on the home page. These tours were three-dimensional renderings of the locations with images of locations available to view. Printable campus maps were also available to download.

Other tools associated with the usefulness of information for patients dimension that were present on the Web site included descriptions of services and patient testimony. In addition to giving an overview of each service or department, the Cleveland Clinic Foundation provided rankings and ratings of each service and/or department. These ratings included state and national ranks as well as patient satisfaction scores. Statistics were also given. For instance, when looking at the Head and Neck Institute, the statistics tab provided numbers for total patient visits, total new patients, primary surgical cases, average length of stay (days), and admissions rates. Within this same section, innovations made within a specific department at Cleveland Clinic were mentioned. Patient stories and contact information for each service and/or department was also given.

When it came to finding a doctor, visitors could search by doctor's name, by institute/department, by primary care doctors, by locations, and by specialty, disease or treatment. Additionally, within searches, visitors could filter information such as type of doctor, gender, and language. A printable staff directory could also be downloaded from the site from a PDF file. Concurrently, patients could also request an appointment by filling out an online submission form.

Financial and insurance information was provided in the "Patient & Visitors" section of the Web site. Specifically information was provided about the insurance and billing process. Visitors could also view a list of hospital charges in a downloadable PDF file. It was also within this section that people could pay their bills online through a password protected access account. Patients also had the option to make a quick payment without having to login to an existing account.

Quality measures were given their own section in the Web site. Here the Cleveland Clinic talked about quality measures and safety. They also provided a quality performance report which showed how the hospital compared to the national average in certain core competencies. This information was given in both text and graphic form.

Usefulness of Information for the General Public

Of the many usefulness of information for the general public dimension tools, most could be found within the “About Us” section of the Web site. It was here that the Cleveland Clinic Foundation provided quick facts about the hospital and included a downloadable facts and figures sheet for visitors. The mission, vision and values of the hospital were also reported along with the history of the organization. Video presentations about the Cleveland Clinic Foundation were also embedded on the site.

The most recent annual report was available to download from the site, as was previous reports dating back to 2005. In addition, information about how to volunteer at the hospital was present in the “About Us” section. However, donation information was located under the “Giving” section of the Web site. Here visitors learned different ways they could donate to the Cleveland Clinic Foundation. Press releases could also be found in the “Corporate Communication” section of the Web site. Organizational publications, such as the Cleveland Clinic Magazine, on the other hand, were located in the “Patients & Visitors” section of the site.

Generation of Return Visits

Several tools were used by the Cleveland Clinic Foundation to generate return visits to the site. One tool used by the hospital was bookmarking. Visitors could bookmark certain Web pages for easy access. Moreover, bookmarking allowed for visitors to share the page link with others on social networking sites.

A calendar of events was another tool used by the site to generate return visits. By frequently updating the calendar, visitors were more likely to return to the site. At the same time, being able to sign up for events, classes, and support groups also encouraged return visits, a feature which the Cleveland Clinic Foundation offered online.

Another way the Cleveland Clinic Foundation encouraged return visits was through the use of frequently asked questions and updated press releases; visitors are more likely to return to the site knowing these sections are updated frequently. Visitors were also able to log into the site and receive secure online services. These services included access to online medical records, access to online medical second opinions, and the option to pay medical bills or set up automatic payments online.

Ease of Interface

A site map and search engine box was present on the Cleveland Clinic Foundation site. Other tools associated with the ease of interface dimension that were used on the site included major links from the home page to the rest of the site and links back to the home page. The presence of these features made navigating the site easier for visitors.

Conservation of Visitors

An important aspect of the conservation of visitors dimension is that load times of the site should be less than four seconds. The load times for the Cleveland Clinic Foundation Web site were more than four seconds. In fact, the average load time of the Web site, after five recalls, was 5.16 seconds. This may be due to the high reliance on graphics that the Web site has. Still, the Web site does offer important information on the home page which could encourage visitors to stay longer on the site. For instance, not only could visitors find a doctor from the home page, they could find links to specific

health information as well. Moreover, quality measures and links to social media tools were easily accessible through the home page.

Web 2.0

Many of the tools present on the Cleveland Clinic foundation Web site were affiliated with the Web 2.0 dimension. One such feature was interactive content. Visitors to the site were able to partake in interactive tools such as risk assessments, quizzes, and online calculators. These features allowed visitors to input information in order to get personalized health information.

Other tools the Web site utilized included RSS feeds, podcasts, webcasts, and social media tools. In terms of the RSS feeds, visitors could subscribe to three separate feeds which focused on health information articles, Web chat transcripts, and health information podcasts. There were also three separate podcasts available on the Web site that focused on different aspects of health, from general health and wellness to heart health. These podcasts were similar to the webcasts posted on the site as well. Social media tools also had a strong presence on the home page of the Web site. Specifically, the site provided links to Facebook, LinkedIn, Twitter, and YouTube.

Mayo Clinic

Mayo Clinic Hospital is a part of the larger Mayo Clinic organization. Located in Phoenix, Arizona, this 217 bed facility has an 86% overall patient rating based on *Consumer Reports*.

Dialogic Loop

In regards to the dialogic loop dimension, the most prominent feature offered was the ability to subscribe to email newsletters. These newsletters allowed visitors to keep up with new advances in patient care and research at Mayo Clinic.

General contact information was also available on this site. The information came in the form of addresses and phone numbers to different departments and divisions within the hospital. Visitors could also contact the hospital by submitting an online contact form, located at the bottom of the main contact information page.

Usefulness of Information for Patients

All of the usefulness of information for patients features within this study were present on Mayo Clinic Hospital's Web site, the most visible feature being the organizational logo, located on the top left hand side of the home page. This logo was present on every page within the site so as to let the visitor know where they were getting their information.

Additionally, descriptions of hospital services were provided. Descriptions often varied in detail and length. For instance, the description of cardiology services included an overview of the cardiology department, a list of procedures and services available, a reference list of qualified cardiologists, and a section dedicated to cardiology patient stories. Thus within the description of services, patients could not only find a physician, they could learn about other patients' experiences at the same time.

Along with a description of services, this site offered billing and insurance information. This information involved everything from health plans to a list of in-network insurance providers. The site also allowed patients to view and pay their bill online. Specifically, through an online account, patients could view monthly statements, view itemized statements, and pay their bill. Through this online account patients were also able to request an appointment and refill prescriptions.

Information about quality measures was provided on the Web site itself, although links to quality reporting Web sites, such as the Joint Commission, were also

present. This information was presented in both text and graphic form. The graphics were interactive, allowing users to compare measures of various Mayo Clinic sites with each other and with the national average. In addition, Mayo Clinic's position as one of America's Best Hospitals for the past twenty years was credited to its quality measures.

The virtual tour feature on this site was also unique in that it had three different tour options. The first tour was an interactive three-dimensional map of the facilities, which allowed users to navigate Mayo Clinic's campuses. The next tour offered 360-degree panoramas of selected locations on Mayo Clinic's campus. The third tour was more traditional, providing pictures of various areas on Mayo Clinic's campuses. It should be noted that these tours required visitors to have selected software programs, such as QuickTime and Adobe.

Usefulness of Information for the General Public

The "About" section of the Web site held many features associated with the usefulness of information for the general public dimension. To begin, the site discusses the core principles of the hospital and how they try to conduct themselves. Additionally, organizational facts and figures are provided within this section that details everything from the number of hospital staff and patients to facility descriptions. Moreover, annual reports from the past four years were available to download. A history of the clinic was also provided, with images and presentations about the hospital and information about the hospitals' founder. Information about how to volunteer at the hospital was also made available within the "About" section of the Web site, as was information on how to donate to the hospital.

At the same time, the hospital had separate sections dedicated to news and publications. The news room featured links to press releases that were sorted by date,

with most recent articles at the top of the page. Additionally, links to Mayo Clinic's news program known as Medical Edge were provided. These linked visitors to television stories, news columns, and radio news produced and distributed by Mayo Clinic. Visitors could listen and watch these news features on their Web browsers, thus demonstrating the Web sites audio and visual capabilities. Within the publications section, links were provided to download PDF versions of different magazines distributed and supported by Mayo Clinic, including Discovery's Edge and Mayo Magazine.

Generation of Return Visits

A unique feature of the Mayo Clinic Web site was that it explicitly invited users to return to look for updated information and new features. Concurrently, they actually provided updated information for patients. This information often came in the form of a newly posted press release. However, updates were being made on the site regarding seasonal flu and H1N1 vaccinations as well. Additionally, a calendar of events was provided, detailing monthly events planned for the Mayo Clinic Health Policy Center. This calendar was updated monthly with new events.

Throughout the Web site, downloadable information was frequently made available. This information included health forms, such as organizational histories, which patients could download and fill out before arriving at the hospital. In addition to online publication, information about certain procedures and health issues could be downloaded by visitors from the site.

The Web site also provided health information to visitors in the form of external links. These links often brought visitors to sites such as the American Heart Association and the American Cancer Society, where they could learn more about a specific health

topic. Moreover, visitors could request information from the hospital. The ability to request information often came in the form of an email link to specific individuals and/or departments. Frequently asked questions were also provided which answered common questions brought to the hospital by visitors and patients. Another way the Web site generated return visits was by offering an online account. Through this online account, visitors could login and pay their bills, request appointments, and refill prescriptions.

Ease of Interface

The most prominent ease of interface feature was the search engine box located in the upper right hand side of the site. This feature allowed visitors to find information quickly by using key terms or phrases. Moreover, within the search results, visitors could specify what type of information they were looking for, be it medical services, health information, education, research, or clinical trials.

While a site map was not present on the Web site, other ease of interface items that were present included links to the home page and major links from the home page (i.e. front page) to the rest of the site. These features allowed visitors to easily navigate the site without having to follow seeming random paths. Likewise, the low reliance on graphics meant that visitors did not have to continually click through graphics to get to content.

Conservation of Visitors

With its low reliance on graphics, the site had load times that were less than four seconds. Specifically, after five loading recalls, the Web site's average load time was 2.47 seconds. By providing load times that are less than four seconds, the hospital is more likely to conserve visitors to the site.

Other features that the site had which contributed to the conservation of visitors included important information on the home page and identification of last date site was modified. Important information on the home page included links to find disease and treatment information, the ability to request an appointment, recent Mayo Clinic news, the ability to subscribe to email newsletters, information about Mayo Clinic's quality measures, links to various Mayo Clinic locations, links to online publications, and other services the that hospital provides. Regarding updated information, the Web site has a section on the home page with links to influenza information and updates. In addition, certain pages provided dates of last modification. These often occurred on health topic information pages.

Web 2.0

Mayo Clinic incorporated several blogs into their Web site. These blogs were dedicated to different issues. For instance, there was a news blog, which allowed visitors to see and hear video and audio excerpts featuring Mayo Clinic physicians and researchers. Two patient blogs were featured on the Web site. The first patient blog, known as "Sharing Mayo Clinic," was a virtual place for the Mayo Clinic community to connect and share their stories and experiences. The second patient blog, called the "Mayo Clinic Podcast Blog," was a place where visitors could hear, watch and download extended conversations about brief news stories on various diseases and conditions. The medical professional blog was tailored to the needs of physicians while the research blog provided a community for people interested in Mayo Clinic research. The education blog was written by students in various Mayo Clinic education programs and focused on their lives as students. Finally, Mayo clinic offered blogs that focused on health care policy and innovation. The "Mayo Clinic Health Policy Blog" was a site for

news and conversation relating to the work of the Mayo Clinic Health Policy Center. The “Mayo Clinic Center for Innovation Blog,” on the other hand, focused on innovations that improved health and health care.

Other Web 2.0 features that were present on the Web site included RSS feeds and podcasts. The RSS feeds allowed visitors to receive information they were interested in from the Web site. Specifically, Mayo Clinic offered seven different RSS feeds for visitors to subscribe to. Visitors could also subscribe to and listen to podcasts. Like the RSS feeds, Mayo Clinic offered several varieties of podcasts. Some were digital recordings of the Mayo Clinic Medical Edge news features carried on TV and radio stations, others were more in-depth discussions by physicians and scientist discussing diseases, conditions and treatments. Links to Mayo Clinic’s YouTube channel were also provided.

Johns Hopkins Hospital

Johns Hopkins Hospital is located in Baltimore, Maryland. This 920 bed facility received a 78% overall patient rating in *Consumer Reports*. A total of 38 dialogic tools were present on the Web site.

Dialogic Loop

In regards to the dialogic loop dimension, the most prominent feature offered was general contact information. This information came in the form of a list of phone numbers for different departments and services. Additionally, visitors could subscribe to receive newsletters from the hospital by sending an email provided in a link.

Usefulness of Information for Patients

All of the usefulness of information for patients items were present throughout Johns Hopkins Hospital’s Web site, including the presence of an organizational logo on

the home page. Also on the home page was the presence of award information in the form of a graphic seal, indicating the hospital's status as one of American's Best Hospitals by U.S. News & World Report. Moreover, a description of hospital services was provided in a separate section labeled "Conditions & Treatments." This linked to various departments and centers in order to provide more information about particular conditions and treatments. It was within these departments and centers pages that virtual tours were given of the facilities.

Under the "Johns Hopkins Patient Care" section, the hospital provided information about hospital bills and insurance. It was here that patients were able to view their current statement and pay their bill online through a password protected online account. In another section of the site, visitors were able to find a physician by name, specialty, location, language, and/or gender.

Several usefulness of information for patients features were found within the "Quality and Innovations at Johns Hopkins Medicine" section. For instance, links to quality measures were present in this section. Additionally, patient stories were within this section, specifically focusing on patient safety and satisfaction.

Usefulness of Information for the General Public

Similar to the Mayo Clinic Web site, Johns Hopkins Hospital provided many of its usefulness of information for the general public features within the "About Johns Hopkins" section of the Web site. For instance, both publications and annual reports were made available within this section of the Web site. There was also a section dedicated solely to the hospital's mission, vision and values. Another section looked at organizational facts such as number of medical staff, number of beds, and number of births that occurred at the hospital within a certain time frame; this information was

primarily provided as a PDF file. Still, another section talked about Johns Hopkins Hospital's history and how to make a gift (i.e. donation) to the hospital. Beyond the "About Johns Hopkins" section, the hospital had a page dedicated to news. It was within this section that visitors could find the press room and news releases, as well as video clips about feature stories.

Generation of Return Visits

While Johns Hopkins Hospital never explicitly invited users to return to the Web site, they did provide various features that would encourage return visits. For instance, the hospital provided a calendar of upcoming events for visitors to view and downloadable information for visitors to print out, such as medical forms and fact sheets. Besides providing a calendar of events and downloadable information, the Web site allowed visitors to bookmark and share pages. For instance, on "The Sidney Kimmel Comprehensive Cancer Center" page, visitors could go to the top left hand corner of the site and find a "share box." By clicking on the share box, visitors could bookmark the page and share the link on a number of different social network services, such as Facebook, Digg, and Twitter.

The Web site also provided health information to visitors in the form of external links. These links often brought visitors to sites such as the American Heart Association and the American Cancer Society, where they could learn more about a specific health topic. Moreover, visitors could request information from the hospital. The ability to request information often came in the form of an email link to specific individuals and/or departments. Frequently asked questions were also provided which answered common questions brought to the hospital by visitors and patients.

Ease of Interface

The most prominent ease of interface features included the search engine box and site map. The search engine box was located in the upper right hand side of the site. This feature allowed visitors to find information quickly by using key terms or phrases. Visitors could specify whether to sort the results by relevance or date. The site map link was located at the bottom of the home page. The site map listed all of the Web pages on the Web site in a table of contents format. Other ease of interface items that were present included links to the home page and major links from the home page (i.e. front page) to the rest of the site. These features allowed visitors to easily navigate the site without having to follow seeming random paths.

Conservation of Visitors

Despite its high reliance on graphics, the site still managed to have load times that were less than four seconds. Specifically, after five loading recalls, the Web site's average load time was .84 seconds. By providing load times that are less than four seconds, the hospital is more likely to conserve visitors to the site.

Web 2.0

Johns Hopkins Hospital had a large amount of Web 2.0 tools incorporated into its Web site. Regarding social media tools, Johns Hopkins Hospital linked to social networking sites including Facebook, Twitter and YouTube. In fact, the hospital linked to several accounts within each one of these tools. For instance, there were seven Facebook accounts Johns Hopkins Hospital endorsed, five Twitter accounts, and one YouTube account.

In addition, the hospital incorporated several blogs and podcasts into their Web site, which people could subscribe to through RSS feeds. These blogs and podcasts

were dedicated to several different issues. For instance, the “Hopkins Pod Blog” was an accompaniment to a roundup of medical stories in a weekly podcast. The blog entitled “A Woman’s Journey” focused on a woman who organized an annual health conference for women at Johns Hopkins while “Pamela Donates” looked at the story of Pamela Paulk who donated her kidney. The “Reflections on Clinical Excellence” blog involved physicians sharing their views and experience in providing exceptional patient care.

New England Baptist Hospital

New England Baptist Hospital is located in Boston, Massachusetts. This 95 bed facility received an 88% overall patient rating in *Consumer Reports*. A total of 37 dialogic tools were present on the Web site.

Dialogic Loop

Within the dialogic loop dimension, New England Baptist Hospital provided visitors with general contact information. This information came in the form of addresses and phone numbers. Visitors were also able to contact the hospital through email links provided on the site. In addition, the Web site provided user-response tools. For instance, patients could submit questions, via an online submission form, to a team of medical experts who would publish answers on the Web site.

Another unique dialogic loop tool present on New England Baptist Hospital’s Web site, was the ability to recognize a hospital staff member. This tool, known as a BravoGram, allowed patients to submit the name of a staff member they thought had gone above and beyond the call of duty.

Usefulness of Information for Patients

Nearly all of the usefulness of information for patients tools were present of New England Baptist Hospital’s Web site. For instance, the organizational logo was present

on the hospital's homepage, in the top left hand corner. Moreover, on the bottom right hand corner of the homepage, various awards and accreditations the hospital had received were visible in a flash screen.

A description of clinical services and care centers was provided in a separate section of the Web site. These descriptions came in both audio/visual and textual formats. A description of the hospital's insurance coverage policy was also provided under the "Patient and Visitor Guide" section of the Web site, while information about quality measures was provided on the Web site under the "About Us" section.

Another tool within the usefulness of information for patient dimension that was present on the Web site was the ability of patients to pre-register online before a surgery. This feature allowed patients to reduce check-in time the day of their procedure. In addition, the Web site allowed patients to find a physician by area of expertise, by specialty, and by name.

Usefulness of Information for the General Public

A vast majority of tools within the usefulness of information for the general public dimension could be found in the "About Us" section of the Web site. For instance, the hospital's mission and vision statement was present, along with the history of the hospital. This section also featured annual reports from the last three years available to download in PDF format.

The "NEBH Media Room" section also featured several tools from the usefulness of information for the general public dimension. For instance, press releases were present in the news sub-section. These press releases were both textual and audio/visual in nature, with several press releases being accompanied by video clips.

Hospital publications were also present within this section of the Web site. These publications ranged from recent editions to archived publications from three years back.

Generation of Return Visits

New England Baptist Hospital explicitly invited users to return to the Web site whenever they were in need of information. This statement was on the Web sites home page, under the welcome message. In addition to inviting users to return to the site, New England Baptist Hospital gave patients the ability to request information by email. Visitors also had the ability to download information from the site, such as medical release forms. Furthermore, patients who pre-registered for a surgery registered on a password protected online account.

Ease of Interface

The most prominent ease of interface features included the site map and search engine box. The site map link was at the bottom of the home page and listed all of the Web pages on the Web site in a table of contents format. The search engine box was located in the upper right hand side of the site. This feature allowed visitors to find information quickly by using key terms or phrases

Links to the home page and major links from the home page (i.e. front page) to the rest of the site were also present on New England Baptist Hospital's site. These features allowed visitors to easily navigate the site without having to follow seeming random paths.

Conservation of Visitors

When it comes to the conservation of visitors to a Web site, loading times are considered important assets. The loading time for New England Baptist Hospital's Web

site was less than four seconds. Specifically, after five loading recalls, the Web site's average load time was .53 seconds.

Another feature within the conservation of visitors dimension involves important information being available on the home page. In the case of New England Baptist Hospital, important information was considered to be present. This was due to the presence of patient safety and patient satisfaction information present on the home page.

Web 2.0

One of the prominent Web 2.0 items on New England Baptist Hospital's Web site was interactive content. Specifically, animated video illustrations and interactive symptom checkers were prevalent within the site's content. The Web site also allowed visitors to email patients through an online submission form. This email was sent to the hospital and was hand delivered to the patients' rooms.

Podcasts and blogs were also featured on this hospital's Web site. There were two podcasts available for visitors to download and listen to. The first podcast talked about the results of a study on pain markers by one of the hospital's physicians. The other podcast talked about hip resurfacing and what it was; this was also produced by one of the hospital's physicians. There were also two blogs on the Web site which could be subscribed to via RSS feeds. The first blog focused on patient safety. Specifically, it was intended to provide important information about patient safety and health care quality in general. The second blog provided commentary on items of interest in national and local health care news.

CHAPTER 7 CONCLUSION

Closing Remarks

Building and enhancing relationships with key constituencies has come to be viewed by many scholars as the fundamental goal of public relations (Hon & Grunig, 1999). By communicating with various stakeholders, organizations are more likely to develop strong organizational-public relationships and are more likely to achieve their goals because they tend to choose goals that are “valued both by management and by strategic constituencies” (Hon & Grunig, 1999, p. 8). Dialogic communication created by the strategic use of the Internet is one way for organizations to build relationships with publics (Kent & Taylor, 1998).

This study was the first of its kind that focused specifically on hospitals to determine how the organizations were building and maintaining relationships on their Web sites. Specifically, this study sought to examine what types of dialogic tools were being used on hospitals Web sites to potentially create, foster and maintain dialogue with target publics. Results showed that while ease of interface, usefulness of information, and conservation of visitors features were frequently present on hospital Web sites, generation of return visits, dialogic loop and Web 2.0 features were lacking. This indicates that hospitals still have room for improvement when it comes to developing dialogic communications online.

Moreover, this study asked whether hospital size was any indicator of dialogic tool use. A statistically significant correlation was found to exist, indicating that larger hospitals tend to have more dialogic features present on their Web sites. This shows that while the Internet allows both large and small hospitals to communicate with

various publics, larger organizations tend to provide more dialogic communication opportunities.

In addition, this study was the first of its kind that to examine the relationship between dialogic tool use and organizational success. Specifically, this study asked whether dialogic tool use was an indicator of overall patient ratings of the hospitals. Also, this study asked whether dialogic tool use was an indicator of individual communication scores associated with doctor communication, nurse communication, discharge information, attentiveness of hospital staff, and communication about medications.

Significant correlations found in the results suggest that dialogic tool use can be an indicator of organizational success for hospitals, namely in terms of predicting overall patient ratings, doctor communication scores, nurse communication scores, and discharge information scores. Specifically dialogic tools associated with the usefulness of information, generation of return visits, Web 2.0 and dialogic loops dimensions were found to contribute significantly to these correlations.

These results imply that online dialogic communication strategies can play an important role in organizational success. Hospitals should therefore strive to use their Web sites as a means of establishing two-way communication and ultimately organizational-public relationships.

However, most hospital sites are lacking features that significantly contribute to organizational success, namely features within the Web 2.0 and dialogic loop dimensions. Even the hospitals used in the benchmark analysis, which were thought to be ideal candidates for benchmarking, failed to thoroughly incorporate Web 2.0 and

dialogic loop features into their sites. This highlights the need for hospitals to incorporate more Web 2.0 and dialogic loop features into their sites, especially given their relationship to organizational success.

Limitations

Several limitations were present within this study and must be acknowledged. To begin, this study limited itself to one specific sub-section of American hospitals, namely those hospitals rated by *Consumer Reports*. As such, this study is not representative of all hospitals in the United States. Therefore these results cannot be extrapolated to a larger population other than those hospitals in *Consumer Reports'* Hospital Patient Ratings list.

At the same time, only the home page and pages linked up to three-clicks away from the home page were considered in this analysis. As a result, a comprehensive understanding of hospital Web sites was not obtained. Moreover, this study implemented a simple counting mechanism which did not treat multiple occurrences of a dialogic feature on a given Web site any differently than on another (Chen & Yen, 2004, p.224). Thus, the depth of each dialogic feature was not accurately portrayed.

Additionally, engaging in a dialogic approach requires organizations to actively solicit information from key public members and listen to, process, and respond to those messages (Bruning et al., 2004). Simply offering these features does not necessarily constitute a dialogic loop. Instead, organizations must actually engage in a dialogue with their publics to complete the dialogic loop. However, this study was not able to examine the responsiveness of the hospitals. Moreover, because this study sought to merely determine the presence of dialogic features on hospital Web sites, it is limited in

that the potential reasons for the inclusion or exclusion of these features was not investigated.

Another limitation regards the fact that Web sites are not the only means hospitals use to communicate and create relationships with stakeholders. Communication strategies could also involve direct mailings, advertisements, letters, etc. As such, this study does not claim to be the one definitive examination of hospital communication strategies. Likewise, this study cannot argue causality because only correlation data was collected.

Methodological limitations were also present within this study. For instance, Guadagnoli and Velicer (1988) maintain that a minimum sample size of 100 to 200 observations is needed to conduct factor analyses. With a sample size of 105 hospitals, this study barely reached the minimum sample size needed. As such sample size effects may be present. Specifically, the small sample size may have affected the factor analyses by making the solutions unstable (Guadagnoli & Velicer, 1988).

Moreover, Kim and Mueller (1978) argue that there should be at least three variables per factor for exploratory analysis (p. 77). However, given lack of variance within certain variables, some factors, such as ease of interface, had only two variables that could be analyzed. Nevertheless, a factor analysis was conducted in order to obtain factor scores and groupings.

Opportunities for Future Research

In light of the findings and their limitations, there are several opportunities for future research. First, in order to gain a comprehensive understanding of hospital Web sites and how they use dialogic tools, future studies should analyze hospital Web sites in their entirety. Moreover, to gain a more thorough understanding of dialogic tool use,

future studies should consider counting multiple occurrences of dialogic features. By counting multiple occurrences of features, a study could better realize how hospitals are using dialogic tools on their Web sites.

This study can also be expanded in future research to check for organizational responsiveness. By checking for organizational responsiveness, a study can more accurately determine whether dialogic loops exist on a hospital's Web site. Additionally, given that this study provides a benchmark for analysis, longitudinal studies can be conducted in future research to determine if Web sites have changed or improved. Similarly, future research needs to conduct qualitative in-depth interviews to examine the reasons why hospitals include or exclude specific dialogic tools in their Web sites.

As a final note, this study highlights the need to further analyze dialogic communication and organizational-public relationships. Specifically, public relation scholars and practitioners should consider whether dialogic communication is truly dialogic in nature. Likewise, scholars and practitioners should question in future studies, whether or not dialogic communication has to be two-way symmetrical in order to build relationships.

APPENDIX A
SAMPLE

Table A-1. Sample of 105 hospitals from *Consumer Reports'* Hospital Patient Rating list

Organization	Number of beds facility maintains
Patient's Hospital of Redding	10
Banner Lassen Medical Center	25
Stewart Memorial Community Hospital	25
St Joseph's Health Service	25
Phelps Memorial Health Center	25
Littleton Regional Hospital	25
Cibola General Hospital	25
Samaritan North Lincoln Hosp	25
Reedsburg Area Medical Center	25
Brownfield Regional Medical Center	26
Avera St Anthony's Hospital	27
Springfield Hospital	35
La Paz Regional Hospital	39
Cobleskill Regional Hospital	40
Walla Walla General Hospital	40
Saint John Hospital	43
Henderson County Community Hospital	45
Palm Drive Hospital	47
Doctor's Memorial Hospital	48
Piedmont Mountainside Hospital	48
Integis Gorove General Hospital	50
Parkview Regional Hospital	50
Jay Hospital	55
Grady Memorial Hospital	55
Clarendon Memorial Hospital	56
Baylor Medical Center at Waxahachie	56
Central Kansas Medical Center	61
Highland Community Hospital	61
Sheridan Memorial Hospital	62
Manchester Memorial Hospital	63
Winona Health	68
Georgetown Community Hospital	75
Morris Hosp & Healthcare Centers	86
Wood County Hospital	92
New England Baptist Hospital	95
Memorial Hospital	104
Hannibal Regional Hospital	105
Audrain Medical Center	107
Sherman Oaks Hospital	112
Northern Hosp of Surry County	120

Mid State Medical Center	123
Powell Valley Healthcare	125
Highland Regional Medical Center	126
Auburn Memorial Hospital	131
Lawrence Memorial Hospital	137
St Mary's Medical Center	139
New Island Hospital	140
Alleghany Regional Hospital	146
Exempla Good Samaritan Med Center	150
Wooster Community Hospital	150
Aurora BayCare Medical Center	160
NorthShore Regional Medical Center	165
St Gabriel's Hospital	167
Marion General Hospital	168
Smyth County Community Hospital	168
NY Westchester Square Medical Center	169
Rush Oak Park Hospital	177
Holland Hospital	178
Jackson Park Hosp Medical Center	180
Dameron Hospital	188
Delta Regional Medical Center	190
Franciscan Skemp Healthcare	198
Shore Memorial Hospital	208
Mayo Clinic Hospital	217
Concord Hospital	220
Wallace Thomson Hospital	220
MidMichigan Medical Center	222
Westside Regional Medical Center	224
Coral Gables Hospital	256
Union Memorial Hospital	273
California Hospital Medical Center	316
Saint Louis University Hospital	332
Memorial Hermann Memorial City Hosp	343
Billings Clinic	344
Eastern Maine Medical Center	349
High Point Regional Health System	353
Houston Northwest Medical Center	369
Self Regional Healthcare	382
St Joseph's Medical Center	386
Lutheran Medical Center	391
Fairview Hospital	410
Hoag Memorial Hospital Presbyterian	419
Hospital of Saint Raphael	442
Saint Vincent Health Center	456
Northeast Georgia Medical Center	471
Summa Health System	481

Rochester General Hospital	494
Tallahassee Memorial Healthcare	495
St. Luke's Regional Medical Center	505
Winter Haven Hospital	519
Covenant Medical Saginaw	521
Huntington Memorial Hospital	522
Jamaica Hospital Medical Center	588
St Anthony's Medical Center	602
Mississippi Baptist Medical Center	638
Brooklyn Hospital Center	653
Hackensack University Medical Center	679
Bronx-Lebanon Hospital Center	784
Massachusetts General Hospital	907
Cedars-Sinai Medical Center	914
Johns Hopkins Hospital	920
Our Lady of Lake Regional Medical Center	1006
Mount Sinai Hospital	1016
Cleveland Clinic Foundation	1080
Barnes-Jewish Hospital	1207

Note: Data gathered from the *Consumer Reports* Web site.

APPENDIX B
CODE BOOK

**Coding Procedures for
Web-based Dialogic Communication Features in Hospital Web Sites**

Materials included in this packet:
Procedures

Introduction:

The goal of this research project is to find what kind of Web-based dialogic communication tools, including Web 2.0 and social media tools, are being used by Hospitals on their Web sites. A sample set of assessment items will be content analyzed individually by each coder using the coding procedures described below. Web sites will be coded into an excel spreadsheet.

These sample items and their related content codes will be discussed by each coder in order to establish a common understanding and set of coding conventions for conducting the content analyses of the various Web sites. Any additional questions or concerns should be noted via email to the lead researcher

Coding Procedures:

Please make sure to complete the following information on the excel spreadsheet:

1. Type coder number.
2. Type date Web site analyzed in the following format: Month/Day
3. Paste the full URL address in database spreadsheet, excluding http://. Retrieve information from *Consumer Reports* (<http://www.consumerreports.org/health/doctors-hospitals/hospital-ratings.htm>).
4. Type full hospital name.
5. Type in city of hospital.
6. Type in state of hospital.
7. Type in number of beds (hospital size) hospital maintains. Retrieve information from *Consumer Reports* (<http://www.consumerreports.org/health/doctors-hospitals/hospital-ratings.htm>). If information unavailable, leave blank.

8. Indicate the overall patient rating of hospital. Retrieve information from *Consumer Reports* (<http://www.consumerreports.org/health/doctors-hospitals/hospital-ratings.htm>). If unavailable, leave blank.
9. Indicate the doctor communication score of the hospital. The doctor communication score being the percentage of patients who said that doctors always or usually communicated well. Retrieve information from *Consumer Reports* (<http://www.consumerreports.org/health/doctors-hospitals/hospital-ratings.htm>). If unavailable, leave blank.
10. Indicate the nurse communication score of the hospital. The nurse communication score being the percentage of patients who said that nurses always or usually communicated well. Retrieve information from *Consumer Reports* (<http://www.consumerreports.org/health/doctors-hospitals/hospital-ratings.htm>). If unavailable, leave blank.
11. Indicate the discharge instructions score of the hospital. The discharge instruction score being the percentage of patients who said that they were given information about what to expect after leaving the hospital. Retrieve information from *Consumer Reports* (<http://www.consumerreports.org/health/doctors-hospitals/hospital-ratings.htm>). If unavailable, leave blank.
12. Indicate the attentiveness of hospital staff score. The attentiveness of hospital staff score being the percentage of patients who said that they always or usually received help as soon as they needed. Retrieve information from *Consumer Reports* (<http://www.consumerreports.org/health/doctors-hospitals/hospital-ratings.htm>). If unavailable, leave blank.

13. Indicate the communication about medications score of the hospital. The communications about medications score being the percentage of patients who said that staff always or usually explained about new medications. Retrieve information from *Consumer Reports* (<http://www.consumerreports.org/health/doctors-hospitals/hospital-ratings.htm>). If unavailable, leave blank.
14. Opportunity for user-response – Note the absence or presence of opportunities for users to respond. This includes areas for users to leave comments and/or complaints as well as the opportunity to send prayers, health information, etc. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.
- If “absence” code 0.
 - If “presence” code 1.
15. Opportunity for online consultation – Note the absence or presence of opportunities for online consultation. Online consultations usually consist of a panel of doctors or specialists who offer online advice and recommendations to health problems. Individual doctors may also offer online consultation. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.
- If “absence” code 0.
 - If “presence” code 1.

16. Online polling – Note the absence or presence of online polling services. Online polls allow visitors to participate in an opinion poll, usually through sample interviews or through questionnaires. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

17. User Survey – Note the absence or presence of user surveys. Surveys allow visitors to voice their opinion on issues such as hospital policies, hospital quality, Web site satisfaction, etc. Surveys can be in the form of short interviews or questionnaires. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

18. Regular information offered through email and/or subscription – Note the absence or presence of regular information offered through email and/or subscription. See whether there is way to sign-up for an email list or a way to subscribe to receive regularly updated information and/or newsletters. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

19. General contact information or contact forms – Note the absence or presence of general contact information or contact forms. This includes emails, phone numbers, and/or contact forms for administration staff, doctors, nurses, departments, etc. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

20. Ability to recognize a hospital staff member – Note the absence or presence of the ability to recognize a hospital staff member for outstanding performance. This includes the ability to send a message to the hospital, usually via online form, to recognize a member of the hospital staff you think has gone above and beyond the call of duty. Look for terms such as staff recognition, BravoGrams, etc. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present.

- If “absence” code 0.
- If “presence” code 1.

21. Description of services – Note the absence or presence of a description of services. This usually includes a list of health services that the hospital offers, as well as descriptions about various departments within the hospital (cardiology, dermatology, etc) and various medical procedures (gastric bypass, radiation,

etc). Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

22. Patient testimony/stories – Note the absence or presence of patient testimony and/or stories. Patient testimonies and/or stories are personal accounts from patients and/or patient families describing their experience at the hospital. These can be audio, visual, and/or textual accounts. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

23. Awards – Note the absence or presence of award information. This includes any information about awards the hospital has won, including Thomson Reuters 100 Top Hospitals, US News & World Report “Best Hospitals”, etc. This information can be either in text or graphic form. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

24. Logo of organization prominent on home page – Note the absence or presence of an organizational logo present on the home page.

- If “absence” code 0.
- If “presence” code 1.

25. Identification of organizational key members – Note the absence or presence of identification of organizational key members. This includes information about board members, trustees, and executives. This does not include information about physicians or staff members. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

26. Ability to find a physician – Note the absence or presence of the ability to find of physician. This includes the ability to find a physicians name, specialty, and/or contact information. This also includes physician referrals. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

27. Option to pay bill/make appointment/refill prescription online – Note the absence or presence of the option to pay bills, make appointments and /or refill

prescriptions online. This includes the ability to pre-register for appointments. If you have to sign-in in order to complete the transaction, you can count it as present. Additionally, use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

28. Quality measures – Note the absence or presence of hospital quality measures.

Quality measures report a hospital’s performance in certain areas against national, state and local standards for healthcare. These often include measures on acute myocardial infarction, heart failure, pneumonia, surgical care, outcomes and complications, etc. Look for terms such as core measures, hospital quality, hospital report card, and health initiatives. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

29. Financial/insurance information – Note the absence or presence of financial

and/or insurance information. This includes information on procedure costs/estimations, billing instructions, lists of insurance affiliates, commonly accepted insurance companies, etc. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as

present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

30. Virtual tours – Note the absence or presence of virtual tours. A virtual tour is a computer-generated simulation of an existing location. Virtual tours usually are usually composed of panoramic images which gives viewers the sense of actually walking through the space. This can include images of hospitals, operating rooms, patient rooms, etc. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included

- If “absence” code 0.
- If “presence” code 1.

31. Organizational history – Note the absence or presence of organizational history. This usually includes information about the hospitals founding and subsequent history over the years. This information is usually found in sections labeled “About Us”, “Organizational History”, etc. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

32. Statement of philosophy/mission statement – Note the absence or presence of a statement of philosophy and/or mission statement. This may include visions or overall goals of the hospital as well as general statements of philosophy. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

33. General organizational facts – Note the absence or presence of general organizational facts. This includes information such as bed count, physician and staff count, and distinguishing trauma level. Additionally, general facts include financial information, such as how much money the hospital generated or donated in years past, etc. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

34. Organizational publications – Note the absence or presence of organizational publications. This includes newsletters, reports, brochures, magazines, journals, etc. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.

- If “presence” code 1.

35. Volunteer opportunities – Note the absence or presence of volunteer opportunities information. This includes information on how to volunteer, where to volunteer, and clinical trial opportunities. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

36. Donation opportunities – Note the absence or presence of donation opportunities. This includes information on how to donate to the hospital, fundraising opportunities, as well as an online donation center/application. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

37. Press releases/press room/news room – Note the absence or presence of press releases, press rooms and/or news rooms. Look for whether a press release is posted on the site, or if there is a link to download a press release. There may be a “media” or “news” section or links within posts to news Web sites. In this case, use the “three-click rule” to determine whether to count this feature as present. If

not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

38. Annual report – Note the absence or presence of annual reports. An annual report is a comprehensive record of a company’s activities throughout the preceding years. Annual reports are intended to give shareholders and other interested persons information about the company’s activities and financial performance. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

39. Audio/visual capacity – Note the absence or presence of audio and or visual capabilities. Look for whether there are options for playing sound and video files, slideshows, or other multimedia. This includes embedded YouTube clips, audio files, live webcams, etc. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present.

- If “absence” code 0.
- If “presence” code 1.

40. Explicit statements that invite users to return – Note the absence or presence of explicit statements that invite users to return. This may be graphic or a statement saying “visit again soon” or “check back for updates.” Use the “three-click rule” to

determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

41. Forums – Note the absence or presence of forums. A forum is a formalized Internet chat room, usually devoted to one particular subject, allowing participants to share experiences, advice and information with one another. Additionally, these are online opportunities to discuss issues in real time with other users, doctors or hospital staff. This could be a live chat with doctors or a discussion with other patients about health-related issues. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

42. Frequently asked questions/question and answer forums – Note the absence or presence of frequently asked questions and/or question and answer forums. These may be posted on the home page, or there may be a link to another section of the site that handles this. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

43. Option to “bookmark now” – Note the absence or presence of the opinion to bookmark the Web site or Web page. In a social bookmarking system, users store lists of Internet resources that they find useful, and other people with similar interests can view the links by category, tags, or randomly. Examples of social links include Delicious, Digg, Fark, Technorati, etc. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

44. Links to external Web sites – Note the absence or presence of links to external Web sites. Make sure that links point to other, separate Web sites and not simply to other sections of the Web site. Examples of these may include links to news Web sites or other organizational Web site, such as the American Heart Association. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

45. Calendar of events – Note the absence or presence of calendar of events. Online calendars allow users to publish events, set recurring events, set online event

alerts, apply importance labels, etc. on an online scheduler. This includes a list of upcoming events distinguished by date. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

46. Downloadable information – Note the absence or presence of downloadable information. Downloadable information includes fact sheets, news stories, or other informational items from the site that can be downloaded. Also included are downloadable forms, such as registration forms, health history forms, etc. If the information is linked to another Web site, use the “three-click” rule. This does not include general information pages or newsletter and magazines. There must be a PDF or some other form of file available for download.

- If “absence” code 0.
- If “presence” code 1.

47. Ability to request information by mail/email – Note the absence or presence of the ability to request information by mail and/or email. Similar to the previous item, except instead of being able to download the information directly from the site, you can send an e-mail or fill out a form to request that the information be sent to visitor. This may include requests for price estimates, callbacks, prayers, medical records, etc. Use the “three-click rule” to determine whether to count this

feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

48. Posting of news stories within the last 30 days – Note the absence or presence of news stories posted within the last 30 days. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

49. Ability to register/sign-up for classes, support groups, and/or events – Note the absence or presence of the ability to register/sign-up for classes, support groups and/or events. This includes the ability to sign-up for CPR or first aid classes, grief and/or cancer support groups, and events such as golf tournaments, etc. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

50. Ability to register and/or log-in to personalized hospital network – Note the absence or presence of the ability to register and/or log-in to a personalized hospital network. Look for links to log-in/register to the site in order to access

personal information, make an appointment, refill prescriptions, etc. This includes being able to log-in/register into personal web sites, such as patient blogs and/or personal content Web sites such as CarePages. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

51. Site maps – Note the absence or presence of site maps. A site map is simply a list of the pages on the site. A site map is on the home page or a link to the site map is on the home page.

- If “absence” code 0.
- If “presence” code 1.

52. Major links on the home page to the rest of the site – Note the absence or presence of major links on the home page that link to the rest of the site. This is referring to a navigation menu or text links to other major sections of the site beyond the home page.

- If “absence” code 0.
- If “presence” code 1.

53. Search engine box – Note the absence or presence of search engine boxes. The search engine may be placed anywhere on the home page (or a link to a search engine box on home page) and allows you to search content of the Web site itself (not the entire Web, although this may be an option on the search engine).

- If “absence” code 0.
- If “presence” code 1.

54. Reliance on graphics – Indicate whether there is a high reliance or low reliance on graphics in the Web site’s design. Consider whether the site uses graphics as a means of navigating the site or locating content or text. If pages are primarily text (i.e. they do not have many graphics embedded) they will be considered as having a low reliance on graphics.

- If “high reliance” code 0.
- If “low reliance” code 1.

55. Links to home page – Note the absence or presence of links back to the homepage. This includes both textual links and graphics links, such as a hyperlink on the organizational logo.

- If “absence” code 0.
- If “presence” code 1.

56. Important/useful information available on the home page – Note the absence or presence of important information available on the home page. Important information is information that would inform and aid a visitor in making a healthcare decision. This may include a list of services, a staff directory, links to specific departments, etc.

- If “absence” code 0.
- If “presence” code 1.

57. Average loading time – Note the average loading time of hospital Web sites after five recalls at five second intervals using the WebWait application

(<http://webwait.com/>).

58. Loading times that are less than four seconds – Indicate whether loading times are more than or less than four seconds when opening the home page using the information retrieved from the WebWait application (<http://webwait.com/>) in the previous step.

- If “more than” four seconds to download code 0.
- If “less than” four seconds to download code 1.

59. Posting of last updated time and/or date – Note the absence or presence of an indication of last updated time and/or date. Somewhere on the page there may be an explicit statement of this (for example: “last updated on 1/4/10”). You can also count the date and time stamp that appears at the bottom or top of the home page if it reflects the accurate date (for example: January 25, 2010). Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present.

- If “absence” code 0.
- If “presence” code 1.

60. Ecards – Note the absence or presence of ecards and patient emails. An ecard is a computer-generated greeting card by which a recipient receives an e-mail message. Look for terms such as ecard or email a patient. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does

not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

61. Interactive content – Note the absence or presence of interactive content.

Interactive content are programs or applications that respond directly to the user, taking information and giving feedback. This includes online health calculators, symptom checkers, virtual tours of the human body, etc. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

62. Links to social networking sites – Note the absence or presence of links to social networking sites. Social networking sites involve primarily Internet- and mobile-based tools for sharing and discussing information. Examples of social networking sites include Facebook, MySpace, LinkedIn and similar media. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

63. RSS feed – Note the absence or presence of RSS (Really Simple Syndication) feeds. RSS (Really Simple Syndication) is an addition to Internet technology that is used to keep people updated on their favorite websites. RSS works in conjunction with XML code, which continuously checks the contents of a website for updates. If updates are found, they are broadcast to all the subscribers of the website through a feed. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

64. Blogs – Note the absence or presence of blogs. A blog is a Website, with regular entries of commentary, descriptions of events, or other material such as graphics or video. Entries are commonly displayed in reverse-chronological order. Some examples of blogs include health blogs, visitor blogs, volunteer blogs, etc. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

65. MicroBlogs – Note the absence or presence of Micro-blogging services. Micro-blogging is a form of multimedia blogging that allows users to send brief text updates or micromedia such as photos or audio clips and publish them, either to be viewed by anyone or by a restricted group, which can be chosen by the user.

Services might include Twitter, Pownce, and Plurk. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

66. Podcasts/Vodcasts – Note the absence or presence of podcasts and/or vodcasts and webcasting. Podcasting, vodcasting, and webcasting are ways to receive audio and video files over the Internet. The casting service consists of news and information files that may be downloaded to your computer and/or transferred to your portable MP3 player. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present.

Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

67. YouTube – Note the absence or presence of links to YouTube channel. YouTube is a video sharing Web site on which users can upload and share videos. Use the “three-click rule” to determine whether to count this feature as present. If not, the item does not count as present. Navigational links that lead to content within the three-click rule can be included.

- If “absence” code 0.
- If “presence” code 1.

68. Note the presence of other features not mentioned in the above list. If new features found, enter into excel spreadsheet. If no additional Web-based services offered, leave blank.

Additional Information:

- If hospital has additional subsidiaries, only code main hospital Web site of hospital listed.
- If two or more hospitals have merged, sample becomes invalid and must be replaced with new hospital. Contact lead researcher if this occurs.
- If hospital Web site is under construction, sample becomes invalid and must be replaced with new agency. Contact lead researcher if this occurs.
- If hospital does not have a Web site, sample becomes invalid and must be replaced with new agency. Contact lead researcher if this occurs.
- Email any coding questions or uncertainties to lead researcher

LIST OF REFERENCES

- Anderson, J. G., Rainey, M. R., & Eysenbach, G. (2003). The impact of cyberhealth on the physician-patient relationship. *Journal of Medical Systems, 27*(1), 67-84.
- Bailey, T. A. (2007). A model for teaching public relations students: A continuum of power distribution between organizations and publics in two-way web site communication tools. [Electronic version]. Paper presented at the 2007 AEJMC National Convention.
- Bishop, L., Holmes, B., & McEnroe, W. (2006, June 19). *Hospital web marketing takes off: Consumers stick to the basics*. Retrieved December 17, 2007, from Forrester database.
- Boehm, E. W., Daley, E., & Hanson, J. (2006, October, 20). *Hospital marketers battle consumer opinion*. Retrieved from December 17, 2007, from Forrester database.
- Bortree, D. S., & Seltzer, T. (2009). Dialogic strategies and outcomes: An analysis of environmental advocacy groups' facebook profiles. *Public Relations Review, 35*(3), 317-319.
- Bruning, S. D., Castle, J. D., & Schrepfer, E. (2004). Building relationships between organizations and publics: Examining the linkage between organization public relationships, evaluations or satisfaction, and behavioral intent. *Communication Studies, 55*(3), 435-446.
- Bruning, S. D., & Galloway, T. (2003). Expanding the organization-public relationship scale: Exploring the role that structural and personal commitment play in organization-public relationships. *Public Relations Review, 29*(3), 309-319.
- Bruning, S. D., & Ledingham, J. A. (1999). Relationships between organizations and publics: Development of a multi-dimensional organization-public relationship scale. *Public Relations Review, 25*(2), 157-170.
- Burdette, R.A. (2007). Marketing quality to consumers – does it work for hospital marketers? *Louisiana State University Electronic Thesis & Dissertation Collection*. Retrieved February 9, 2008 from <http://etd.lsu.edu/docs/available/etd-11012007-193518/>
- Canary, D. J., & Stafford, L. (1992). Relational maintenance strategies and equity in marriage. *Communication Monographs, 59*, 243-267.
- Carmines, E. G., & Zeller, R. A. (1979). *Reliability and validity assessment*. Beverly Hills, CA: Sage.

- Chen, K., & Yen, D. C. (2004). Improving the quality of online presence through interactivity. *Information & Management*, 42(1), 217-226.
- Cline, R., & Haynes, K. (2001). Consumer health information seeking on the internet. *Health Education Research*, 16(6), 671-692.
- Consumer Reports. (2010, February). How we rate hospitals: Patient ratings. Retrieved February 13, 2010 from <http://www.consumerreports.org/health/resources/pdf/how-we-rate-hospitals/How+We+Rate+Hospitals+Feb+2010+13+Jan.pdf>
- Croft, A. C. (2008). Emergence of new media moves PR agencies in new directions. *Public Relations Quarterly*, 52(1), 16-20.
- Cross, J. (2003, July/August). Communicating quality. *Spectrum*, 6-9.
- Davenport, T. H., Harris, J. G., & Kohli, A. K. (2001). How do they know their customers so well? *MIT Sloan Management Review*, 42(2), 63-73.
- Edelman, R. (2004). Managing corporate risk and reputation. *Global Agenda*, (2), 127-128.
- Ellis, L. (1994). *Research methods in the social sciences*. Madison, WI: Brown & Benchmark.
- Eyrich, N., Padman, M. L., & Sweetser, K. D. (2008). PR practitioners' use of social media tools and communication technology. *Public Relations Review*, 34, 412-414.
- Eysenbach, G., Powell, J., Kuss, O., & Sa, E. (2002). Empirical studies assessing the quality of health information for consumers on the world wide web: A systematic review. *JAMA: Journal of the American Medical Association*, 287(20), 2691-2700.
- Ferguson, M. A. (1984). *Building theory in public relations: Interorganizational relationships as a public relations paradigm. Paper presented to the Association for Education in Journalism and Mass Communication, Gainesville, FL.*
- Fombrun, C. J. (1996). *Reputation: Realizing value from the corporate image*. Boston, MA: Harvard Business School Press.
- Fombrun, C. J., & Rindova, V. (1998). Reputation management in global 1000 firms: A benchmarking study. *Corporate Reputation Review*, 1(3), 205-212.
- Fombrun, C., & Shanley, M. (1990). What's in a name? Reputation building and corporate strategy. *Academy of Management Journal*, 33, 233-258.

- Frey, L. R., Botan, C. H., & Kreps, G. L. (2000). *Investigating communication: An introduction to research methods* (2nd ed.). Boston, MA: Allyn & Bacon.
- Fulda, P. O., & Kwasik, H. (2004). Consumer health information provided by library and hospital websites in the south central region. *Journal of the Medical Library Association, 92*(3), 372-375.
- Gallant, L., Irizarry, C., & Kreps, G. L. (2007). User-centric hospital web sites: A case for trust and personalization. *E-Service Journal, 5*(2) Retrieved September 6, 2009 from http://muse.jhu.edu.lp.hscl.ufl.edu/journals/eservice_journal/v005/5.2gallant.pdf
- Glazer, R. (1999). Winning in smart markets. *Sloan Management Review, 40*(4), 59-69.
- Gordon, J., & Berhow, S. (2009). University websites and dialogic features for building relationships with potential students. *Public Relations Review, 35*(2), 150-152.
- Grunig, L. (1997). Excellence in public relations. In C. Caywood (Ed.), *The handbook of strategic public relations and integrated communications* (pp. 286-300). New York, NY: McGraw-Hill.
- Guadagnoli, E., & Velicer, W. F. (1988). Relation of sample size to the stability of component patterns. *Psychological Bulletin, 103*, 265-275.
- Ha, L., & James, E. L. (1998). Interactivity reexamined: A baseline analysis of early business web sites. *Journal of Broadcasting & Electronic Media, 42*(4), 456-474.
- Halpern, N. A., Pastores, S. M., Thaler, H. T., & Greenstien, R. J. (2006). Changes in critical care beds and occupancy in the United States 1985-2000: Differences attributed to hospital size. *Critical Care Medicine, 34*(8), 2105-2112.
- Hanif, F., Abayasekara, K., Willcocks, L., Jolly, E. C., Jamieson, N. V., Praseedom, R. K., Goodacre, J. A., Read, J. C., Chaudhry, A., & Gibbs, P. (2007). The quality of information about kidney transplantation on the world wide web. *Clinical Transplantation, 21*(3), 371-376.
- Harris Interactive. (2009, July 28). *Internet provides public with health care information that they value and trust and which often stimulates discussion with their doctors*. Retrieved September 6, 2009 from http://www.harrisinteractive.com/harris_poll/pubs/Harris_Poll_2009_07_28.pdf
- Health on the Net Foundation. (2009). *Our users*. Retrieved September 13, 2009 from <http://www.hon.ch/HONcode/audience.html#3>
- Heath, R. L., & Bryant, J. (1992). *Human communication theory and research*. Hillsdale, NJ: Lawrence Erlbaum.

- Holm, O. (2006). Integrated marketing communication: From tactic to strategy. *Corporate Communications*, 11(1), 23-33.
- Hon, L., & Grunig, J. (1999). Guidelines for measuring relationships in public relations. *Institute for Public Relations*. Retrieved January 15, 2008 from http://www.instituteforpr.org/index.php/IPR/research_single/guidelines_measuring_relationships/
- Huang, Y. H. (1997). *Public relations strategies, relational outcomes, and conflict management strategies*. Unpublished doctoral dissertation, University of Maryland, College Park, MD.
- Huang, Y. H. (2001). OPRA: A cross-cultural, multiple-item scale for measuring organization-public relationships. *Journal of Public Relations Research*, 13(1), 61-90.
- Hutton, J. G. (1999). The definition, dimensions, and domain of public relations. *Public Relations Review*, 25(2), 199-214.
- Jose, A., & Lee, S. (2007). Environmental reporting of global corporations: A content analysis based on website disclosures. *Journal of Business Ethics*, 72(4), 307-321.
- Kelleher, T. (2009). Conversational voice, communicated commitment, and public relations outcomes in interactive online communication. *Journal of Communication*, 59(1), 172-188.
- Kent, M. L., & Taylor, M. (1998). Building dialogic relationships through the world wide web. *Public Relations Review*, 24(3), 321-334.
- Kent, M. L., & Taylor, M. (2002). Toward a dialogic theory of public relations. *Public Relations Review*, 28(1), 21-37.
- Kent, M. L., Taylor, M., & White, W. J. (2003). The relationship between web site design and organizational responsiveness to stakeholders. *Public Relations Review*, 29(1), 63-77.
- Kim, J. O., & Mueller, C. W. (1978). *Factor analysis: Statistical methods and practical issues*. Beverly Hills, CA.: Sage Publications.
- Krippendorff, K. (2004). *Content analysis: An introduction to its methodology* (2nd ed.). Beverly Hills, CA: Sage Publications
- Ledingham, J. A. (2003). Explicating relationship management as a general theory of public relations. *Journal of Public Relations Research*, 15(2), 181-198.

- Lombard, M., Snyder-Duch, J. & Bracken, C. (2008). *Practical resources for assessing and reporting intercoder reliability in content analysis research projects*. Retrieved March 29, 2009 from <http://astro.temple.edu/~lombard/reliability/>
- McAllister-Spooner, S. (2009). Fulfilling the dialogic promise: A ten-year reflective survey on dialogic internet principles. *Public Relations Review*, 35(3), 320-322.
- Mira, J. J., Llinás, G., Tomás, O., & Pérez-Jover, V. (2006). Quality of websites in Spanish public hospitals. *Medical Informatics & the Internet in Medicine*, 31(1), 23-44.
- Morgan, R.M., & Hunt, S.D. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing*, 58(3), 20-38.
- Naude, A. M. E., Froneman, J. D., & Atwood, R. A. (2004). The use of the internet by ten south african non-governmental organizations--a public relations perspective. *Public Relations Review*, 30(1), 87-94.
- Omar, M., & Williams, R. L. (2006). Managing and maintaining corporate reputation and brand identity: Haier group logo. *Journal of Brand Management*, 13(4/5), 268-275.
- Park, H., & Reber, B. H. (2008). Relationship building and the use of web sites: How fortune 500 corporations use their web sites to build relationships. *Public Relations Review*, 34(4), 409-411.
- Petromilli, M., & Michalczyk, D. (1999). Your most valuable asset: Increasing the value of your hospital through its brand. *Marketing Health Services*, 19(2), 4-9.
- Pew Internet and American Life Project. (2009). *The social life of health information*. Retrieved September 13, 2009 from <http://www.pewinternet.org/Reports/2009/8-The-Social-Life-of-Health-Information.aspx?r=1>
- Porter, J. (2003). *Testing the three-click rule*. Retrieved April 16, 2009, from http://www.uie.com/articles/three_click_rule/
- Rawlins, B. (2007). Measuring the relationship between organizational transparency and trust [Electronic version]. *The International Newsletter of Public Relations Measurement*, 6(5), 425-439
- Romano, M. (2003). Not just a web site. *Modern Healthcare*, 33(21), 22-25.
- Roper, J. (2005). Symmetrical communication: Excellent public relations or a strategy for hegemony? *Journal of Public Relations Research*, 17(1), 69-86.
- Sanchez, A. O., & Fuentes, M. T. M. (2002). Consumer orientation of public hospital websites in Spain. *International Journal of Medical Marketing*, 3(1), 20-30.

- Sanchez, P.M. (2000). The potential of hospital website marketing. *Health Marketing Quarterly*, 18(1/2), 45-57.
- Schultz, T. (2000). Mass media and the concept of interactivity: An exploratory study of online forums and reader email. *Media, Culture & Society*, 22(2), 205-221.
- Sillence, E., Briggs, P., Harris, P. R., & Fishwick, L. (2007). How do patients evaluate and make use of online health information? *Social Science & Medicine*, 64(9), 1853-1862.
- Sweetser, K.D., & Lariscy, R.W. (2008). Candidates make good friends: An analysis of candidates' uses of facebook. *International Journal of Strategic Communication*, 2(3), 175-198.
- Taylor, M., & Kent, M. L. (2004). Congressional web sites and their potential for public dialogues. *Atlantic Journal of Communication*, 12(2), 59-76.
- Taylor, M., Kent, M. L., & White, W. J. (2001). How activist organizations are using the internet to build relationships. *Public Relations Review*, 27(3), 263-284.
- Thomas, R. (2005). *Marketing health services*. Chicago, IL: Health Administration Press.
- Vitberg, A. (1996). *Marketing health care into the twenty-first century*. New York, NY: Hawoth Press.
- von Knoop, C., Lovich, D., Silverstein, M., & Tutty, M. (2003). *Vital signs: E-health in the United States*. The Boston Consulting Group. Retrieved September 13, 2009 from http://209.83.147.85/publications/files/Vital_Signs_E_Health_United_States_Jan2003.pdf
- Wimmer, R. D., & Dominick, J. R. (1997). *Mass media research: An introduction* (5th ed.). Belmont, CA: Wadsworth.
- Wimmer, R. D., & Dominick, J. R. (2006). *Mass media research: An introduction* (8th ed.). Belmont, CA: Wadsworth.
- Wright, D., & Hinson, M. (2009). An analysis of the increasing impact of social and other new media on public relations. *A Paper Presented to 12th Annual International Public Relations Research Conference*, Retrieved on August 17, 2009 from http://www.instituteforpr.org/files/uploads/Wright_Hinson_PR_Miami.pdf
- Yang, S. (2007). An integrated model for organization-public relational outcomes, organizational reputation, and their antecedents. *Journal of Public Relations Research*, 19(2), 91-121.

Zuckerman, A., & Coile, R. (2004). *Competing on excellence: Healthcare strategies for a consumer-driven market*. Chicago, IL: Health Administration Press.

BIOGRAPHICAL SKETCH

Jennifer Hahn was born in West Palm Beach, Florida. She earned a Bachelor of Arts in communication studies from Stetson University (2008) in Deland, Florida. In the fall of 2008, Jennifer joined the College of Journalism and Communications graduate program at the University of Florida. She has served as a Graduate Assistant and Instructor for the College of Liberal Arts and Sciences at the William and Grace Dial Center for Written and Oral Communication. Her research interests include health communication, public relations in the digital age, corporate social responsibility, and integrated marketing communications.