

Background / Research Objectives

Research indicates that social media can benefit organizations through two primary ways: 1) information dissemination, and 2) audience engagement and communication for market insights.

Audience Engagement. Kaplan and Haenlein (2010) argue that interaction and feedback are critical elements of social media engagement. Caregivers and patients can have a collaborative relationship to increase overall communications through social media and build loyalty (Bacigalupe, 2011; Thielst, 2011). This is important because people that are engaged are likely to influence healthcare service redesign (Forbat, Cayless, Knighting, Cornwell, & Kearneya, 2009). An engagement strategy fits with the elements of participation and production Heinonen's model of social media activities.

Information Dissemination. Information dissemination on social media can take many forms, such as with patient education, discussion of staff, and announcement of awards. Social media has the capability to reach a wide audience at a relatively low cost compared to traditional forms of advertising (Thackeray, et al., 2008). A study found that hospital staff believe that social media can be used to publish news items, educate users, create discussion groups, maximize exposure, change user behavior, and promote specific services offered by the hospital (Bermudez-Tamayo et al., 2013). Employees can have a forum to voice concerns and share success stories (Sweetland & Thomson, 2010). Social media can also be used as another tool to advertise employment openings (Squazzo, 2010). A dissemination strategy fits with the consumption element of Heinonen's model of social media activities because the audience is merely given information.

Our study is exploratory and proposed the following research questions:

- 1) What is the prevalence of social media use among hospitals?
- 2) How does a hospital's structure affect whether it uses different elements of social media such as Facebook, Twitter, YouTube, Google+, LinkedIn, and blogs?
- 3) Do hospitals use an information dissemination or engagement strategy with Facebook?
- 4) How do hospitals utilize Facebook to disseminate information and engage their audience?



Table 1. Mean Social Media Use by Hospital Type

	Facebook	Twitter	YouTube	Google+	LinkedIn	Blog	N
Location	***	***	***			***	
Urban	0.79	0.61	0.53	0.06	0.09	0.17	247
Rural	0.61	0.26	0.18	0.03	0.06	0.06	197
University		***	***				
Non-Affiliated	0.67	0.44	0.36	0.05	0.08	0.12	446
Affiliated	0.84	0.84	0.72	0.04	0.08	0.16	25
Health System	***	***	***				
Non-Affiliated	0.53	0.26	0.20	0.03	0.07	0.09	152
Affiliated	0.76	0.56	0.47	0.06	0.08	0.14	319
Government		*					
No	0.71	0.49	0.39	0.06	0.08	0.10	357
Yes	0.61	0.37	0.34	0.02	0.06	0.18	114
For-Profit		*	*				
No	0.71	0.48	0.41	0.05	0.09	0.13	380
Yes	0.59	0.38	0.29	0.03	0.03	0.09	91

*p<.05; **p<.01; ***p<.001; when noted, difference was significant using independent t-test
N=471 hospitals

Table 2. Effect of Hospital Structure and Advertising Strategies on Social Media Use: Odds Ratio

	Any	Facebook	Twitter	YouTube
Hospital Structural Variables:				
Government	0.90	0.87	0.87	1.09
For-Profit	0.45 **	0.42 **	0.47 *	0.44 **
Rural	0.53 *	0.55 *	0.45 **	0.33 ***
Teaching	0.85	0.77	0.71	1.33
Beds	1.004 *	1.004 **	1.004 ***	1.001
Affiliation with Health System	1.94 **	1.87 *	2.24 **	2.00 *
Advertising Strategies:				
Quality	2.05 *	1.84 *	3.51 ***	2.56 ***
Stories	1.19	1.21	1.07	1.27
Education	2.22 **	2.12 **	2.01 *	2.64 **
Customer Satisfaction	1.68	1.29	1.00	0.96

N=471 hospitals
*p<.05; **p<.01; ***p<.001

Table 3. How Hospitals Use Facebook

	All Hospitals		Unique Hospital Site		Health System Site		Diff
	Mean	SE	Mean	SE	Mean	SE	
Facebook:							
Likes	3821	1437	1860	320	8173	4558	*
Active in Past 90 Days	0.95	0.01	0.95	0.01	0.96	0.02	
Active in Past 30 Days	0.92	0.01	0.92	0.02	0.93	0.03	
Patient Education	0.91	0.02	0.89	0.02	0.96	0.02	*
Discuss Staff	0.76	0.02	0.72	0.03	0.84	0.04	*
Staff Awards	0.63	0.03	0.58	0.03	0.74	0.04	**
Hospital Awards	0.57	0.03	0.49	0.03	0.74	0.04	***
Consumer Engagement	0.27	0.02	0.25	0.03	0.32	0.05	
Hospital Structure:							
Government	0.22	0.02	0.23	0.03	0.18	0.04	
For Profit	0.17	0.02	0.21	0.03	0.08	0.03	**
Rural	0.33	0.03	0.35	0.03	0.29	0.05	
Teaching	0.32	0.03	0.33	0.03	0.29	0.05	
Beds	162	9	154	10	178	20	

N=322 total hospitals; N=222 unique hospital sites, N=100 health system sites
*p<.05; **p<.01; ***p<.001

Findings / Conclusions

Considering that over 1 billion people use Facebook and more than 500 million use Twitter nationwide (Associated Press, 2013), it is surprising that 30% of hospitals studied do not have any presence in social media. Furthermore, the potential benefits of additional patients, employee recruitment, establishment of community networks, increased customer satisfaction, estimated revenue gains, and a more cost effective form of marketing, should make social media a focus area for hospitals (Wagner, 2010; Squazzo, 2010; Thackeray, Neiger, Hanson, & McKenzie, 2008).

Many hospitals use social media to disseminate critical information, reach a broader audience, and recruit employees. Hospitals primarily use Facebook for consumption activities that follow a strategy of dissemination. Much of the current hospital social media use is for educational purposes to inform consumers. Thus, it is not surprising that hospitals that have an educational focus on their websites have nearly twice the odds of social media use, compared to hospitals without an educational focus.

While hospitals take advantage of some social media capabilities, they are not fully utilizing the capabilities of social media. Social media does not have as high of a cost or as troubling a communication stream as management perceptions indicate. Patient privacy information can be contained and incorrect information is corrected more quickly on social media than traditional avenues (Angelle & Rose, 2011; Giles, 2005). Meanwhile, rural and smaller hospitals are less likely to use social media. That may be partially due to incorrect perceptions of a high cost to use social media. However, the financial cost to engagement with social media can be low so these hospitals should not avoid social media. Lawrence General only used one full time marketing and public relations staff for social media, yet ranked third in the nation in Facebook fan engagement (Anderson, 2011).

Study Design

Sample and Collection: We performed an original evaluation of hospital websites for their advertising and social media focus. The sampling frame for this study was all hospitals identified in the Centers for Medicare and Medicaid Services Healthcare Cost Report Information System as of July 2012. We used a ten percent simple random sample, resulting in a sample size of 474. The 474 hospitals were divided among the three authors, with websites reviewed between July and September of 2012 for their advertising focus and social media links. To test for agreement, the authors assessed an additional 10 websites independently, with substantial agreement (Fleiss' kappa=0.63) among all reviewers. To identify whether hospitals used social media, hospital websites were reviewed for links to YouTube, Twitter, blogs, Facebook, Google+, and LinkedIn. Hospital Facebook pages were reviewed in-depth during July 2013.

Analyses: First, we obtained means and standard errors for the proportion of social media use in hospitals, by social media type, as well as hospital structural variables. Second, we conducted independent *t* tests to compare the use of social media in different hospital structures (i.e. whether a hospital was urban or rural, affiliated with a university, affiliated with a health system, government, and for-profit). Third, we used multiple logistic regression tests to assess whether social media use was different based on hospital structure or advertising strategies.