



Integrative use of Social Media in Health Communication

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Abstract

This paper examines the integrative uses of social media in a health marketing setting. The focus is on the theory of selective and limited influences and the concepts of selective perception and exposure. Communication that engages participants enables a reduction in cognitive dissonance and enhances the perception of messages. An evaluation of communication theories and changes in health care dialogue are identified and assessed. Innovations are occurring in health communications that are improving the experience for end-users. A literature review was used to examine the topic and provide a framework for developing propositions that could be applied in a health communication setting. The specific uses for social media channels are outlined and the use of integrating social media channels is demonstrated in the obstetrics and gynecology specialty of high-risk maternal health. The findings indicate that social media should not only be delivered as independent channels but can be integrated into applications to be used in mobile settings that improve and enhance business objectives. Finally, it is proposed that organizational goals can be achieved with a well formulated social media monitoring plan.



Introduction

Social media can be used by hospitals and health care organization in way that is integrated into communication. Modern health communication initiatives are reported to help drive down healthcare-related costs and improve quality of care (Lewis, 2010). The nature of social networks and how their content is delivered can help improve the limited effects of mass-communication by improving the selective effects of the audience (DeFleur & DeFleur, 2010). Social media can be a channel that helps raise awareness of health-related issues and facilitates behavior change (Hughes, 2010). A healthcare organization should not be afraid or feel threatened by social media. By having a social media strategy that sets goals and specific objectives it is possible to have an operational framework that addresses the concerns of physicians, complies with policy and enhances communication.

Literature Review

The Theory of Selective and Limited Influences can be indicative of why mass communication sometimes has limited effect on an audience (DeFleur & DeFleur, 2010). It is the psychological makeup and unique differences in people that can cause diverse interpretation of media. Instead of all members of an audience having the same reaction to a mass communication message as suggested in the Magic Bullet Theory, studies indicate that an audience is not always responding to a message in a uniform way. The view of people and society being diverse is used to describe how individuals could have differing views on mass media. Larger groups of people with similar backgrounds could also be segmented and described as having similar lifestyles which generate patterns in thinking and behavior which are further broken down into subcultures. The social relationships that people share can cause interpretation of content in selective ways.

Perception or the interpretation of external stimuli is used by consumers to build a meaningful and coherent picture of messages used in communication (Lamb, Hair, & McDaniel, 2012). Selective exposure by consumers to media reduces the amount of messages which are noticed daily. Feeling or beliefs which cause a person to change the meaning of a message can cause distortion while selective remembering or retention can also occur when a person only recalls information supporting personal beliefs and attitudes. Changes in the content of communication and marketing can be used to mitigate message distortion due to



selective perception. The beliefs and attitudes of consumers along with motivation and learning about products and services can be emphasized in communication to modify how a message is perceived.

Consumers may either feel satisfied with their choices and purchases or feel dissatisfaction (Boone & Kurtz, 2006). Anxiety, or cognitive dissonance, that occurs after a major decision can be caused by pre-existing knowledge, attitudes and beliefs. Leon Festinger developed the Theory of Cognitive Dissonance in which he observed that humans strive for consistency and are adept to restoring consistency when threatened with inconsistency (Scott-Kakures, 2009). A consumer may look to support their choices by pursuing reassurance. The practice of follow-up advertising and communication that offer personal attention can help reduce cognitive dissonance. Making it known that an alternative choice would have been better is also a method of helping a consumer make particular choices and feel satisfaction with future decisions (Boone & Kurtz, 2006).

Causes of cognitive dissonance include the importance of the decision, tendencies towards anxiety, definitiveness of choice, and directness of choice (Lindquist & Sirgy, 2006). Consumers will attempt to reduce dissonance by reinforcing their decisions and attempt to find positive information that supports the choice. Trivializing the choice is another way of to minimize dissonance. Cohen found that individuals experience little dissonance when minimal effort had to be expended in grasping essential points of a contrary communication while greater dissonance was relative to greater discrepancy (Cohen, 1959). Marketers can use this knowledge to match products to the target audience. A seller or provider of services can help the consumer reduce their anxiety by providing information and answering questions (Lindquist & Sirgy, 2006).

Theories about how such changes occur will be reviewed, followed by a brief discussion of conditions which cause the differences and how these make it difficult to predict (Cohen, 1959). Prior research is pointed out that examines personal behavior and attitude as being central to the issue of the effects of persuasive communication. Learning and retention by individuals is also presented as conditions affecting the prediction of how individuals understand information.



The determinants and motivators behind Internet use were studied among users in states of stress and boredom. Mastro, Eastin, & Tamborini, (2002) explored if users experiencing unpleasant states of excitement would arrange their media environment in a way to eliminate their aversive states. It was found that Internet users do differentiate their surfing habits as a result of mood where bored users would engage in elevated levels of surfing to maximize cognitive absorption and stressed users used the Web more slowly to maximize cognitive involvement. For the authors, understanding the effects of Internet usage are important to understanding the relationships between use and psychological states as well as a tendency of users meeting others online and extending their online relationships and perhaps displacing the amount of their exposure to other media such as television and radio.

Health Care Marketing – eHealth

The experiences, impressions and relationships that patients have with physicians and health care organization is now experiencing an evolution (Beyond Brochures, 2011). While the use of brochures, artwork and copy are still used to communicate with patients, executives in health care organization now recognize that they must increase visibility and awareness through the use of personalized dialogue. The health care seeking audience's needs and wants should be identified and assessed. An approach of development that includes processes and behavioral standards can be used to formulate an exclusive experience. Digital technology in computers and mobile applications now provide the opportunity for health care marketers to create a dialogue that can be used to cultivate a better patient experience.

A study done to assess the Web sites of hospitals and health systems was conducted to determine their effectiveness as sources of consumer information (Ford, Huerta, Schilhavy & Menachemi, 2012). The findings identified needed improvements based on the research criteria of accessibility, content, marketing and technology. In general, the success of online presences failed in performance due to inadequate accessibility for the intended audience. Users with lower computer literacy levels found that the sites evaluated were not user friendly, resulting in poor accessibility scores. Similarly, content which should provide effective engagement required high reading comprehension, becoming difficult to understand. The marketing assessment considered the presence of social media as well as



how readily information could be accessed by search engines. Finally technology was evaluated for speed, structure, code quality and how this affected the overall user's experience (Ford et al, 2012).

A measure of a hospital's attempts to provide health information has been performed at the Cooper University Hospital in Camden, New Jersey (Calabretta, Cavanaugh, Malone & Swartz, 2011). The hospital designed a center for patrons use to provide health information via computers for patients, families and visitors. The increasing dependence on the Internet and electronic resources offered the opportunity to monitor and log usage. It was discovered that while primary health information needs were met – secondary needs were identified as visits to the center increased. Users found the center useful as it provided reliable patient education information as well as increased the interest in wellness information (Calabretta et al, 2011).

Hospital libraries even on a limited budget can easily create and provide brochures, Web pages and mobile applications that can be shared by health professionals via technologies such as mobile devices (Klatt, 2011). Klatt gives several examples of how libraries can easily provide information using technology. The organization of information that can be readily accessed and freely available provides a starting point for those seeking clinically relevant health information that can be used by medical professionals and visitors in a hospital setting. This type of service by a hospital library can help the organization be a vital resource of information.

The media capability of how virtual medical communities can be advantageous to physicians was the focus of a published paper (Porumb C., Porumb S., Vlaicu, Orza, & Chioreanu, 2008). The use of an online community is described where physicians could share their knowledge and experience with other physicians, friends and colleagues creating a subnet community of interactive communication sharing ideas, concepts and methodologies. As with the methods of the use of technology described by Klatt, here the authors describe the building of prototypes for functional blocks of a system architecture that can be developed at a low cost. The efficiency of communication that is user friendly and easy-to-use can provide enhanced sharing of information among medical professionals.



The increasing budgets of large health care organizations and hospitals used in marketing and advertising correlates to the increasing competition among medical professionals (Verma, Saini & Nawal, 2011). Assessing the ethical perspective of health care marketing was used to determine how well medical advertising kept with the principles of patient's interests, education, honesty of claims and accuracy in its promotion. Marketing to patients is seen as an essential tool of communication. Investment in marketing and advertising does result in increased patient referrals. The surge in medical practice competition does however lead to the rise of unethical practices being used for marketing such as those where inaccurate claims are made and the promotion of unnecessary procedures. Another aspect to direct-to-consumer advertising in health products and services is the impact of global exposure and issues with national regulations (Rezaee, Manneh, Graver, Mechanic, Fehmie, & Lobb, 2012). Questions arise in terms of legal consequences, government intervention and the opportunities and hazards of transnational online marketing.

The perception of medical information by consumers was investigated in a study of twenty Web sites for prescription drug companies (Wymer, 2010). Of interest is the value of direct-to-consumer-advertising (DTCA) and the arguments made in favor of it by proponents and against it by critics and the correlation to results from participants in the study. The author found that participants believe prescription drug Web sites are providing comprehensive and accurate information. The information was viewed as truthful and credible. However, participants found it limiting that drug companies did not provide price information or treatment alternatives. The question was raised on how well drug companies are providing appropriate information for patients to make good health choices.

A study in the consumer trust of online health information in correlation to the several theoretical frameworks of trust including personal capital, social capital and past experiences with offline health information shows that trust varies by consumer characteristics and the content of information (Ye, 2011). A notable problem that was found was that organizations need to present health information in a way that is easily understood by the general public. People tend to be motivated to highly scrutinize health information in order to conclude that it is credible. In terms of social media, the study found that visiting these sites did not



increase social capital and trust. This is explained by the fact individuals may find themselves among groups of people with diverse background and interests which does not lead to strong ties and is not conducive to trust. Overall, the study found that consumer trust in health information correlated more with information features rather than with receiver characteristics.

Learning how best to use eHealth communication remains a challenge as is seen after 15 years of scientific evidence in eHealth communication research (Neuhauser & Kreps, 2010). It is suggested that overall eHealth communication is gaining acceptance and is responsible for positive effects on health behaviors as a result of interactivity, customization, contextualization and multimedia. Health content that is tailored instead of produced in a one-size-fits-all method has proven to help user be more motivated to making health changes and better decisions concerning their own and their family's health. Factors such as literacy, language, culture and disability should not be overlooked as health communicators strive to improve their efforts. The goal is to develop communication that reaches a mass audience but with the impact of interpersonal connections.

Social Media

Social media is now used as a new tool as part of an organization's communication (Postman, 2009). Online tools can help improve communication and engage an audience. Postman describes how through the use of forums, blogs and Web sites, customers are being influenced and having conversations with friends. It is this communication that is delivering a richer experience that is changing how people work, communicate and live. Social media provides characteristics that make it a powerful instrument for an organization. Online communication can be authentic, transparent, and immediate as well as encouraging participation, connectivity and accountability.

As people begin to use technology to get the information they need, it is important that an organization wanting to engage customers online have clear objectives (Li & Bernoff, 2008). Five main objectives to supporting business function may be accomplished in several ways. Insight to consumers can be obtained by listening to what customers have to say. An organization can participate and encourage two-way conversation through interactivity. Make



customers enthusiastic so that they will spread the message. Create a framework where customers can support one another and finally, embrace customers so that they work with each other to help the organization improve products and services.

Customers that have access to internal communities where they can share experience and knowledge can add value to an organization (Powell, 2009). Communication that occurs internally can produce a more effective business and improve customer services. When this type of communication is allowed to be independent, it can thrive as users feel they are allowed to express their opinions. Opening up channels of communication can improve interaction and the flow of information. Encouragement of online communication can help an organization listen for recommendations and implement suggestions that can benefit the business and its customers.

Technology, Social Media and eHealth

Technology and its use for collaboration, communication and empowerment of end users in medicine are now changing medical practice (Eysenbach, 2008). The evolution of Web applications has not only advanced the use of these products but the expectations of those using them. Communication has increased among collaborators of new technologies and at the core of this next generation of medicine is social networking. The author describes a second generation of medicine that is now emerging emphasizing collaboration and openness which comes from participation that enable health care providers to engage patients. From this reserve of knowledge comes guidance to health information that is relevant and credible to the end user. Still there are issues of privacy which will need to be addressed and how systems will handle personal health information.

Social media as an online environment for the purpose of mass collaboration is also being viewed as tool for health researchers to supplement the knowledge brought about by peer-reviewed research publications (Cleary, 2011). The sharing and collaborating of peer reviewed articles, editorials, letters to editors, and new papers is now emerging as a method of mass collaboration in medicine. This trend is evident at large organizations such as the Mayo Clinic's Center of Social Media. Here, technology is being used to connect thousands of users to its open online global community and providing content such as videos, news



articles and discussion forums. Cleary considers a social media environment helps improve the efficiency of mass collaboration and increase the knowledge of medical practice and health care information.

There are inherent risks with medical personnel using social media sites (Balog, Warwick, Randall, & Kieling, 2012). A personal and professional boundary of content posting and collaboration among users becomes an issue where patient confidentiality could be violated. Military medical educators are now addressing the appropriate use of social media with trainees and their subordinates. At risk is the use of the Web for the transmission of content and communication which can include medical records, messages from patients to physicians, appointments, and prescriptions. The challenges are in how the technology could mask personal identity, pose violations to patient confidentiality and present opportunities for unprofessional content that includes profanity, discriminatory language, depiction of intoxication and sexually suggestive text. Many organizations still do not have formal social networking policies in place. Also of interest is that some human resource professionals are now rejecting job candidates based on social media postings. The risks of social media need to be understood and through promotion and education of proper online usage medical professionals decrease the risks to organizations.

The credibility of health organization trying to harness social media can be impacted by distortions and misuse (Jones, 2011). Health groups such as the World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC) find themselves fighting online rumors spread through social media while they themselves are working to raise public awareness of health issues through public dissemination. While these organizations can work to produce information that is timely, accurate and reliable, there is uncertainty when it comes to what will happen with public health information once it is published via social media. There are however opportunities to use social media in ways that traditional media is not able to. Monitoring people's health concerns and using social media to change people's behavior based on recommendations are helping public health messengers reach a wider audience. People concerned about similar issues can come together and have a unified voice to promote a particular cause via online social media sites such as Twitter and Facebook. Jones surmises that better evaluation metrics of public health campaigns through the use of



social media are needed to help medical professional obtain more knowledge about the impact of these new communication tools.

It is apparent that today more than ever patients are using social media such as Twitter, Facebook and YouTube to find health information, seek help and connect with others people that have similar concerns (Phillips, 2011). Research in health behavior indicates that information that relies on its own has little effect while Web-based applications for activities such as health coaching and goal setting used for weight loss and blood pressure have a higher impact. A challenge for health professional going forward will be how best the meet the expectations of these new social media savvy users seeking health information. Health communicators of the future will need to work on developing features of such programs that should link users to online communities and supplement information through health coaching via email, text or phone.

Propositions

As patients, consumers, physicians and employees of the health care industry seek more medical information through online communication channels it is important that health care marketers be have strategies and tactics that can engage its diverse public (Beyond Brochures, 2011). The use of social media and technology is impacting consumer choices by generating new accessibility and methods of conversation. These new innovations in technology need to be considered in health marketing strategies that are evaluated for effectiveness and efficiency as part of the overall organizational goals for connectivity that can create superior communication experiences. Health marketers can improve audience retention of messages by accentuating their message and reducing misinterpretation due to perception (Lamb, Hair, & McDaniel, 2012). It is in the focus of the messaging content and its delivery methods where dissonance can be reduced (Cohen, 1959). As Eysenbach (2008) points out, changes are occurring in how health information is being promoted and we are beginning to see health care systems open up to allow collaboration and participation. The effects of mass collaboration with technology are bringing a real and unique value in medicine and health (Cleary, 2011). Three propositions are presented for the application of social media into the overall communication strategies of health care marketers and health care organizations efforts of presenting health information.



Proposition 1: Health care communicators will provide targeted messages that are persuasive, increase exposure and deliver clarity about health, wellness, disease management, services, treatments, and other health care applications.

Proposition 2: Content will be aggregated to a mobile technology application in order to supplement static online offerings which will enable the end-user to be included in conversation that is engaging and collaborative.

Proposition 3: Monitor, measure, analyze, and evaluate communications to determine their effectiveness, viral reach, progress and growth in delivering health care communication that is aligned with organizational priorities.

Applications

Proposition 1: Health care communicators will provide targeted messages that are persuasive, increase exposure and deliver clarity about health, wellness, disease management, services, treatments, and other health care applications.

Growth in health communication that is delivered online is today empowering end-users as they seek out content that is credible and effective (Eysenbach, 2008). The channels to deliver online content today have grown beyond the singular static Web site. Tools such as Facebook, Twitter, YouTube, blogs, and mobile applications offer content providers the opportunity to generate material that can be shared and encourage participation. The role of the health communicator has not changed in the sense that they are still responsible for providing direct and indirect dialogue that can inform and persuade end-users; however the use of new intrapersonal communication tools are changing how people communicate.

Health information can be improved by delivering content that is clear and provides the needed information to those seeking it out (Li & Bernoff, 2008). This would enhance health communication by focusing on delivering messages in a way that can be more fully accepted by end-users. Content that is intended for an online audience will benefit and be more effective when barriers to communication are reduced. Creating communication that encourages participation helps internalize the message with end-users and reduces the delivery of health information in a way that is perceived as authoritarian. The online tools which are available today enable communicators to enhance interactivity while providing meaningful information across multiple social levels.



The use of social media tools should be part of an overall communication plan that is created to refine content for health seekers who are going online for looking for recommendations, information and need to make medical decisions (Fox & Rainie, 2002). The strategies used by end-users seeking medical information points to most users going online by themselves, using a search engine and visiting a few sites. Looking for health information on behalf of someone else also ranked high as motivator to seek out information as did searching from home to answer a question about a specific illness or condition. Interestingly, seekers of medical information have basic presumptions about the information they find online with most believing all or much of what is found. Also online health seekers believe what they found online because it fits with they already know and confirms what they already believe.

Improving the dissemination of health information, increasing audience, personalizing messages and enabling interactivity and participation can be achieved by using technology that includes social media (Balog, Warwick, Randall, & Kieling, 2012). Online audiences are today becoming accustomed to finding information in a variety of social media formats and not just on static Web pages of content. Social media tools that can be used to target health messages and deliver content include Twitter, Facebook and YouTube.

1. Twitter provides a continuous stream of content that are delivered in real-time. Twitter can be used a channel for the delivery of health information and announcement dissemination that engage audiences in two-way communication.
2. Facebook provides health marketers with an avenue to develop health messaging campaigns and events for specific causes that can easily reach the general public. Users of Facebook create personal profiles, add friends, exchange messages and join groups that are organized by common interest.
3. YouTube is a video sharing site that can be used to upload, share, view and comment on video content. Video can be used to highlight and deliver health messages. YouTube content has the potential to be shared and embedded on users own Web sites and social networks.



Proposition 2: Content will be aggregated to a mobile technology application in order to supplement static online offerings which will enable the end-user to be included in conversation that is engaging and collaborative.

Health marketers can generate online information that is available on the organizations Web site and use social media channels to reach its target audience. Connecting to a growing set of communication sources can be improved by developing an application that can be used on smart phones or tablet computers providing a bridge to facilitate sophisticated interaction with users (Wodajo, 2011). Additionally the opportunity exists to use application technology in a way that informs users of treatments, care options and track health conditions (Social Networks in Health Care, 2010). Consumers are increasingly using online information to educate themselves and determine treatment options.

An application example can be given in the delivery of specialized obstetrics and gynecology treatment and services of maternal-fetal medicine. Women with high-risk pregnancies may need the management of complicated conditions and delivery of state-of-the-art treatment for themselves and their babies (Maternal-Fetal Medicine, 2012). A variety of content sources through multiple channels could be used to inform patients and caregivers (Table 1).

Table 1. Social media network and usage

Social Media Network	Usage
Twitter	Maternity news, announcements and schedules
Facebook	Multiple birth groups, specific topics and product information
YouTube	Labor, delivery and post-partum education and support videos

Diverse content that is broadcast over several channels of communication can be aggregated into a single tool eliminating the need for the user to go to each different site. An application that is developed to pull social media networks system information together can be developed for use on a smart mobile device such as a phone or tablet computer. Additionally this content can be accessed within an application that may have other specific functionality such as monitoring of blood pressure, bed rest, heartbeat of baby, and medical professional support. The use of an application makes it possible for the end-user to have a consolidation

of tracking services available at all times along with Web site and social media connectivity allowing for informed decisions and information sharing (Figure 1).

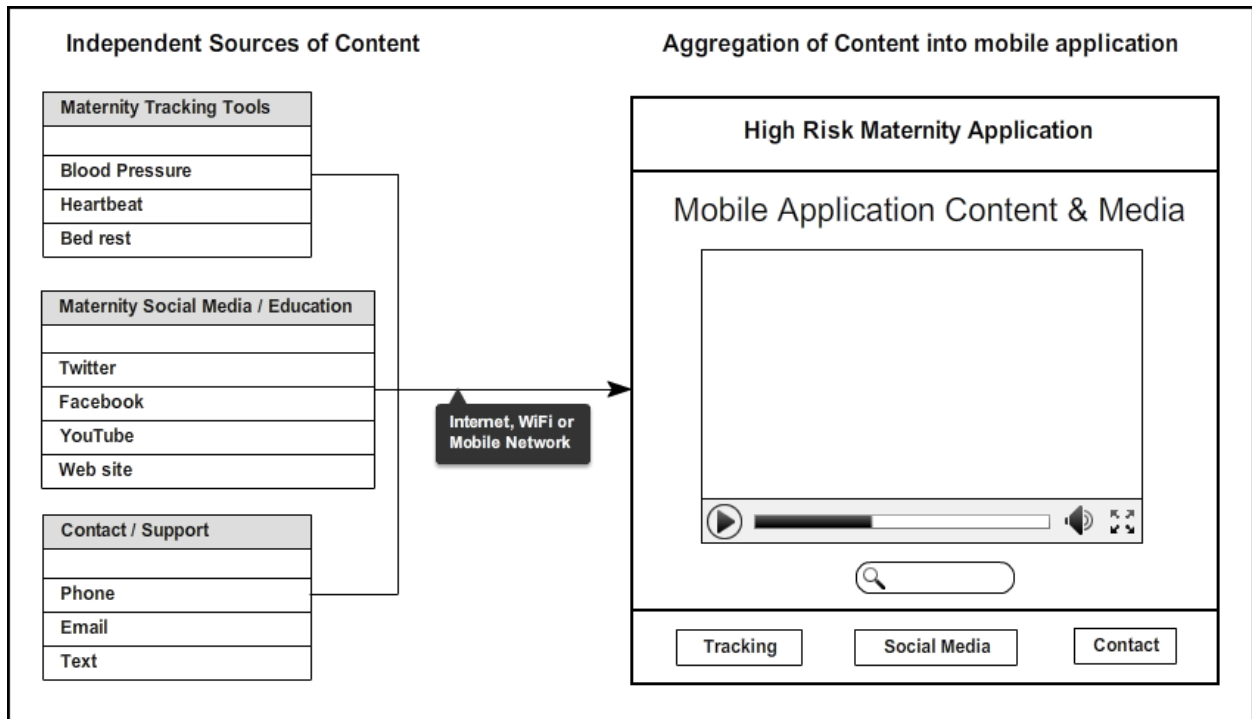


Figure 1. Aggregation of content to mobile application

Proposition 3: Monitor, measure, analyze, and evaluate communications to determine their effectiveness, viral reach, progress and growth in delivering health care communication that is aligned with organizational priorities.

Online communications in health care should be integrated in an organizations overall business and marketing strategies (Chaffey, Ellis-Chadwick, Johnston, & Mayer, 2006). This can be achieved by utilizing a strategy process model that will insure all key activities are included in the development and implementation of the different products and content sources. The goal is having the online and mobile communication as contributors to the business. Likewise, it will also be important that health communication is coordinated with the different management teams with the organization, that customer characteristics and behavior are managed, and that there is consistent reporting and collection of Web 2.0 activities.



Diagnostic metrics need to be established to monitor, evaluate and improve the quality of the different health communication processes contributing to content and end-user experience (Chaffey, Ellis-Chadwick, Johnston, & Mayer, 2006). SMART objectives can help support goal setting for online marketing strategies and measurements. Web analytic tools are available to help monitor the different types of measures. Marketing research is another tool that can be used as primary data to assess customer perceptions, attitudes, preferences and behaviors. Having content and information that is up-to-date and provides quality is dependent on measurements and feedback.

Having a system that tracks online content sources will help organizations with health communication projects continuously implement social media, explore options, expand use, establish processes, engage audiences, and help staff understand the value of incorporating social media. Strategy and metrics will help define measures of success based on goals and objectives. A social media strategy can be developed to include:

- A description of the target audience.
- What does the organization want to achieve? Restate objectives in SMART terms.
- A definition of audience communication needs.
- Goal integration supporting mission and overall communication plans.
- Development of key messages.
- Identification of resources, social media tools and activities.
- Identification of key partners.
- Definition of success for evaluation and evaluation plan.

Conclusion

In an environment where patients and those seeking medical information spend more time online it is important that health communicators make effective use of social media tools. As health care professionals are recognizing the changes in how communication tools can improve awareness and be useful to reduce the limitations of selectivity, content is evolving from static Web pages to mobile and interactive information. Improving medical and health communication can be achieved if organizations begin to see the potential for social media. Additionally, the application of interactive channels of communication can be combined to



deliver a rich user experience that is mobile and portable. The ongoing monitoring of health communication practices will insure that business objectives are met and to improve awareness and engage end-users. It is by utilizing these recommendations for collaboration that health information can be delivered in a way that it gains a wider audience and capitalizes on the use of technology to bring about a better patient experience.



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