Abstract

This paper examines the exponential growth of social media technologies and their application in public health. Social media is transforming how, when and where personal, communal and organizational communications take place. The examination of previous and potential social media applications in health and emergency communications, barriers to its use, recommendations and best practices for social media in public health is presented. Data have been collected from social media websites, newspapers, public health agencies and organizations, and research reports. When used with prudence and foresight, social media is a valuable tool for public health organizations to broaden outreach with key audiences.

*Key words:* social media, health communications, public health
Acknowledgements

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Chapter I

Background

Over the last several years, the use of social media has grown exponentially. Social media draws on the “wisdom of crowds” to share and connect information online (U.S. General Services Administration [GSA], 2011, para. 1). Kaplan and Haenlein (2010) define social media as a “group of Internet-based applications that build on the ideological and technological foundations of Web 2.0 and that allow the creation and exchange of User Generated Content” (p. 61). Employing social media, individuals or groups create, organize, edit, comment on, combine or share web content allowing adopters to be both audience and content producers (Currie, 2009a). People are seeking and exchanging consumer reviews on products and services, health and medical information, and building communities and social support using social media (Fox, 2009; Smith, T., 2009).

Social media is revolutionizing the way people communicate within their social and professional networks. Distribution of information is no longer linear, with one person or organization disseminating knowledge. Users not only receive information, they participate in the information-sharing process. Social media allows for 24 hour-a-day access to people and information in “real-time,” regardless of geographic location or time zone. People connect through the resultant online communities. Whereas community may be traditionally defined as family, friends and neighbors, social media has broadened the definition to include connections that have been made online (Sublet, Spring, & Howard, 2011).

The growth of social media is staggering. Globally, the time spent on social networking and blog websites increased 66% from 2009 to 2010. In total, 110 billion minutes were spent on
social networking and blog websites in 2010, equaling 22% of all time spent online. Australians are most active, spending an average of more than 7 hours per month on social media websites, followed by the U.S. with roughly 6.5 hours and Italy with 6.3 hours per month (Nielson, 2010).

According to an online survey of American adults aged 18 and older, nearly 3 in 4 respondents participate in at least one online community or social network (American Red Cross [ARC], 2010a). Adult participation in social networking websites quadrupled between 2005 and 2009 from 8% to 35% (Lenhart, 2009). The popular social networking website Facebook has over 500 million active users, with 50% of users logging in each day and 700 billion minutes spent on its website each month worldwide (Facebook, 2011). Twitter, a microblogging service, has 175 million registered users who send up to 5 million messages known as “tweets” per day (Twitter, 2010). The video-sharing website YouTube had 8 million video views per day in its first year (2005); by May 2010 video views exceeded 2 billion per day (YouTube, 2011b). In December, 2010, 187.7 billion text messages were sent versus 9.8 billion in December, 2005 (Cellular Telecommunications Industry Association [CTIA], 2011).

Social media’s scope goes far beyond simply exchanging commentary, pictures and video with friends and family. They are being employed as political, marketing, communications, and emergency tools. With this explosive growth in popularity, it is not surprising that public health organizations are recognizing the power of social media. Increasingly, organizations are employing social media as a standard part of their social marketing campaigns and emergency communications plans (Currie 2009a, 2009b; Fugate, 2011).

**Forms of Social Media**

The landscape of social media technologies is dynamic; new tools are offered each week. Social media platforms range from simple text messaging between mobile devices to more
elaborate social networking websites such as Facebook and Twitter that allow the exchange of photographs, video and commentary among users. Despite the multitude of available platforms, there are several basic forms that remain consistent. Table 1.1 illustrates basic social media forms and examples of potential applications in public health.

Mobile Text Messaging

There are two types of mobile text messaging: short message service (SMS) and multimedia messaging service (MMS). SMS allows for short text messages to be sent between mobile devices, while MMS allows for messages that include multimedia (e.g., images, audio, and video) to be transmitted between mobile devices (Mobile Marketing Association [MMA], 2008).

Blogs and Micro-Blogs

Blogs, short for weblogs, are frequently updated online journals that focus on a particular subject or type of subject. Generally, entries are posted in reverse-chronological order. Most blogs combine text with images, links and other media related to the subject matter. Blog or “blogging” may be used as a verb to describe maintaining or adding content to a blog.

A microblog is a form of “blogging” that allows users to share brief text messages (usually 140 characters or less) with friends or the public. Messages may be sent by several means including mobile websites, text messaging, or the website hosting the microblog (Centers for Disease Control and Prevention [CDC], 2010c).

Social Networking

Social networking websites remain one of the most popular forms of social media. Social networking websites build online communities of people who share common interests (CDC, 2010c). These websites allow users to interact in various ways including instant
## Table 1.1

**Social Media Tools and Public Health Applications**

<table>
<thead>
<tr>
<th>Tool</th>
<th>Description</th>
<th>Application Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Blogs</strong></td>
<td>Short for weblog, a type of Website that is updated frequently, written in a conversational tone and contains regular entries of commentary, descriptions of events or other material</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Discuss a current health topic that impacts your area.</td>
<td></td>
</tr>
<tr>
<td><strong>Podcasts</strong></td>
<td>Web-based audio and/or video content made available on the Internet for downloading to a personal audio player</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use podcasts for training and public outreach.</td>
<td></td>
</tr>
<tr>
<td><strong>Social Networking Websites</strong></td>
<td>Online communities that allow users to connect, interact and exchange information with those who share interests and/or activities</td>
<td></td>
</tr>
<tr>
<td>(Facebook, MySpace, LinkedIn)</td>
<td>Share information on upcoming activities such as screening events.</td>
<td></td>
</tr>
<tr>
<td><strong>Microblogs</strong> (Twitter, Plurk, etc.)</td>
<td>Form of blogging that allows users to write brief text updates (usually 140 characters) and publish them to be viewed and commented upon by their network</td>
<td>Use to send vaccination reminders during influenza season and provide a link to the local health department.</td>
</tr>
<tr>
<td><strong>Mobile Text Messaging</strong></td>
<td>Short messages of text exchanged between mobile devices</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Send hurricane evacuation notices and warnings.</td>
<td></td>
</tr>
<tr>
<td><strong>Widgets</strong></td>
<td>Piece of self-contained code (a small application) that can be embedded into a Website or program to perform a specific function</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Create a widget for smoking cessation that others can share. Provide information on cessation resources.</td>
<td></td>
</tr>
<tr>
<td><strong>RSS Feeds</strong></td>
<td>Short for Real Simple Syndication, a file that contains frequently updated information (such as news headlines or blog posts) that can be subscribed to using programs called feed readers or aggregators</td>
<td>Provide a RSS link on your webpage to allow consumers and partners to subscribe to health information provided by your organization and drive traffic to your website.</td>
</tr>
<tr>
<td><strong>Image/Video Sharing Websites</strong></td>
<td>User generated sites that allow people to upload pictures or videos and view and comment on the uploaded content of others</td>
<td></td>
</tr>
<tr>
<td>(Flickr, YouTube, etc.)</td>
<td>Exchange images with partners to use in upcoming campaigns to reduce cost. Post videos for target audiences.</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** American Public Health Association (n.d.); Yale Center for Public Health Preparedness (2009)
messaging, email, and content sharing

**Image and Video Sharing Websites**

Image and video sharing websites allow people to distribute or provide access to digital pictures, video or audio. Users are able to view, link to or comment on content that others have uploaded (American Public Health Association [APHA], n.d.). Flickr, one of the most popular photograph sharing websites, has more than 3 thousand images uploaded every minute and reached 5 billion image uploads in September, 2010 (Flickr, 2011).

**Mobile Websites**

Mobile websites are specifically designed to display suitably on mobile devices (APHA, n.d.). These websites allow users to access organizations’ websites from a mobile device.

**Really Simple Syndication (RSS) Feeds**

A really simple syndication (RSS) feed is a web content format, when used with an aggregator, allows users to personalize the information they receive from websites. Instead of utilizing traditional methods of browsing or searching for information on websites, users can subscribe to an RSS feed to receive and view new information from websites of their choice in one location. Users need an RSS-enabled browser or RSS news reader to subscribe (APHA, n.d.; CDC, 2010d).

**Widgets**

A widget is a small application or portion of self-enclosed code which can be embedded into a website or program to perform a particular function (APHA, n.d.; CDC, 2010d). Widgets display featured content that is maintained by its creator. Users can post widgets to their website or blog.
Podcasts

A podcast is an episodic program delivered via the Internet that contains audio and/or video files and can be viewed or listened to at any time (Apple, 2011). Podcasts may be viewed on portable media devices or a computer.

Characteristics of Social Media Use

The use of social media appears ubiquitous. The convenience and accessibility of social media has expanded its use across diverse populations. Users are accessing social media from their homes and on the go. Sixty-six percent of Americans use broadband Internet connections at home (Smith, A., 2010a). Over 56 million Americans access the Internet on their mobile device (CDC, 2009a). The proliferation of social media adopters is not surprising. For example, in the course of one minute the following occurred (Hayes, 2011):

- 512,000 comments were made on Facebook,
- 36 hours of video were uploaded onto YouTube,
- 1,393,519 videos were viewed on YouTube,
- 62,707 tweets were sent on Twitter,
- 581 new members joined Facebook,
- 208 new Twitter accounts were activated,
- 60 new members joined LinkedIn, and
- 626 new blog posts were published.

Social Media Usage by Form

Mobile Technologies

Increasingly, users are utilizing mobile phones to access the Internet, social networking and online video sharing websites, as well as to send text messages. Approximately 80% of
Whites, 87% of English-speaking Latinos and 87% of African Americans own mobile phones (Smith, A., 2010b). In 2010, there were more than 292 million (93%) U.S. adults who subscribed to a mobile service (CTIA, 2010). Seventeen percent of all mobile phone users have used their phone to look up health or medical information (Smith, A., 2010b); twenty-five percent of Latinos who own mobile phones have used their phone to search for health-related information, in comparison with 19% of African Americans and 15% of Whites (Smith, A., 2010b).

The number of U.S. adult mobile phone users who text message is growing; 65% of adults reported text messaging in September 2009 compared to 72% in May 2010 (Lenhart, 2010). In a 12 month period ending June 2010, more than 1.8 trillion text messages were sent, or approximately 4.9 billion messages per day. In December, 2010 alone, 187.7 billion messages were sent and received (CTIA, 2011). Minorities are more likely to text than Whites: 50% of Hispanics, 47% of African Americans and 40% of Whites who own mobile phones report texting (Smith, A., 2010c). Appendix A outlines types of mobile phone usage among races.

**Online Video Viewing**

Online video viewing is increasing in popularity. The popular online video sharing website YouTube (2011a) states more video is uploaded to the website in 60 days than the 3 major U.S. networks in 60 days. In 2009, 69% of adult Internet users reported watching or downloading online videos (Purcell, 2010). It is projected that by 2014, 77% of Internet users will utilize online video, surpassing the 147.5 million people, or 66.7% of Internet users who currently watch online videos per month (CDC, 2010a). Hispanics are most likely to watch the most 27%, followed by 20% of Whites and 15% of African Americans (Purcell, 2010). Men are more likely to view videos than women – 74% and 63% respectively (CDC, 2010a).
Podcasts

Podcasts are becoming mainstream. Wizzard Media (2010), the world’s largest podcast hosting network, received a record breaking 445 million podcast download requests in the third quarter of fiscal year 2010. A survey conducted in 2010 found 45% of Americans, approximately 70 million, have ever watched or listened to a podcast (Webster, 2010). User demographics are broad. Consumption of podcasts by men and women is nearly equal, with 52% of men and 48% of women viewing or listening to podcasts (Webster, 2010). Twenty percent or more of Americans aged 12-17 years, 25-34 and 35-44 years reported ever listening to a podcast (Webster, 2010). In the same report, it is noted that podcast consumers are also active in social networking.

Social Networking

The popularity of social networking continues its ascent among other social media platforms. Much of the growth is attributable to the extraordinary expansion of Facebook and mobile social networking (CDC, 2010b). Facebook exceeded the search engine Google, Inc. in weekly visits to become the most visited website in the U.S. (Childs, 2010). In 2011, comScore, a digital analytics consulting firm, presented its report 2010 U.S. Digital Year in Review. It found that 9 of every 10 American Internet users visit a social networking website each month accounting for 12% of all time spent online in 2010. The average user spends 4.5 hours per month on these websites. Women are spending more online time on social networking websites than men. Women spent 16.8% of their online time on social networking websites as opposed to 12% for men. Race does not appear to be a defining factor in social networking. Among Internet users, Whites, African Americans and Latinos have almost equal usage of social networking websites (Smith, A., 2010c).
Chapter II
Social Media in Public Health

Opportunities abound for the public health community to use social media for health communications. A Pew Internet & American Life Project report found 61% of American adults have looked online for health information, and define this group as “e-patients” (Fox, 2009). E-patients engage in online activities such as reading and posting health and medical commentary on health blogs, looking for physician reviews, listening to health-related podcasts, and using social networking websites to join health-related groups and gather health-related information (Appendix B). They most frequently use the Internet to search for information regarding a specific disease or condition (Table 2.1). Sixty-eight percent of Whites are likely to search for specific medical information online, followed by 60% of African Americans and 55% of Hispanics. These activities are significant because 60% of e-patients and 42% of all adults state that “they or someone they know has been helped by following medical advice or health information found on the Internet” (Fox, 2009, p. 4). These statistics demonstrate the growing potential for organizations to communicate public health messages to broader audiences using social media.

Though still behind other sectors, public health organizations are adopting social media at a growing rate. Private and public health organizations such as the American Heart Association (Hughes, 2010) and the Federal Emergency Management Agency (Fugate, 2011) are active users of social media. In 2009, 43% of agencies surveyed reported using social media for communicating public health issues or emergencies (Currie, 2009a). Traditionally, public health organizations have used print, radio and television to communicate public health messages.
Table 2.1

E-Patients and Health Topic Searches

<table>
<thead>
<tr>
<th>Health Topic</th>
<th>Percent of E-patients who have Searched for Health Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific disease or medical problem</td>
<td>66%</td>
</tr>
<tr>
<td>Particular medical treatment or procedure</td>
<td>55%</td>
</tr>
<tr>
<td>Exercise or fitness</td>
<td>52%</td>
</tr>
<tr>
<td>Doctors or other health practitioners</td>
<td>47%</td>
</tr>
<tr>
<td>Prescription or over-the-counter drugs</td>
<td>45%</td>
</tr>
<tr>
<td>Hospitals or other medical facilities</td>
<td>38%</td>
</tr>
<tr>
<td>Private insurance or Medicare and Medicaid</td>
<td>37%</td>
</tr>
<tr>
<td>Alternative treatments or medicines</td>
<td>35%</td>
</tr>
<tr>
<td>Weight loss or weight control</td>
<td>33%</td>
</tr>
<tr>
<td>Depression, anxiety, stress or mental health issues</td>
<td>28%</td>
</tr>
<tr>
<td>Any other health issue</td>
<td>26%</td>
</tr>
<tr>
<td>Experimental treatments or medicines</td>
<td>20%</td>
</tr>
<tr>
<td>How to stay healthy on a trip overseas</td>
<td>12%</td>
</tr>
</tbody>
</table>

Source: Fox (2009)
(Hughes, 2010). These linear, one-way communication channels do not allow for exchange of ideas or comments. The autonomous nature of these tools enhances the willingness to receive and share health information since the user decides when, where and how messages are received (Currie, 2009b).

Social media can be used to amplify messages in ways that were previously unfeasible. The variety of platforms and tools allow health messages to be tailored or targeted to particular audiences (CDC, 2010c). These tools empower public health officials to relay and share credible, science-based information quickly and directly with consumers and partners. Social media can be incorporated into health communication campaigns and activities to extend the reach of key messages and influence health decision-making (CDC, 2010c). For example, the Scale Back Alabama campaign, hosted by the Alabama Department of Public Health (ADPH) and the Alabama Hospital Association (AHA), promotes healthy eating and physical exercise through its annual 10-week statewide weight loss contest (Alabama Department of Public Health, 2011). The campaign uses Facebook and Twitter to augment conventional messaging. These platforms provide avenues for the campaign to share credible information about healthy eating habits and exercise. In addition, participants are able to share and exchange information on weight loss tips and personal successes and failures (Scale Back Alabama, 2011). Social media is amplifying the campaign’s health messages and providing social support to participants.

Social media allows for rapid and direct dissemination of information to users, who in turn may share the information with people in their actual and virtual communities, enhancing outreach provided by traditional means. In addition, social media can be used as surveillance tools to augment traditional methods. For example, organizations can monitor conversations on
Facebook or trends on Twitter for questions or comments about similar symptoms of illness (Currie, 2009b).

Health Communications

Organizations have been developing innovative methods to reach their target audiences. In 2006, the San Francisco Department of Public Health (SFDPH) and Internet Sexuality Information Services, Inc. developed “SEXINFO,” a confidential text messaging service for urban teens at high risk for sexually transmitted infections (STIs) and human immunodeficiency virus (San Francisco Department of Public Health, 2006). “SEXINFO” provides information and advice about STIs, birth control and general sexual health services. For example, a teen can text “SEXINFO” to a 5-digit number and press “1” if a condom broke for advice on screening locations for pregnancy and sexually-transmitted diseases (STDs). The initial evaluation found that in the first 25 weeks of the program, 4500 inquiries were received and more than half of those led to information and referrals (Levine, McCright, Dobkin, Woodruff, & Klausner, 2008). Seventy-nine percent of teens who saw the campaign reported they were extremely concerned about STDs, and 10% of those teens sent a text message to the service. In addition, teens who were aware of the campaign stated that the text messaging feature and cell phone access drew their attention. With 90% of the target audience having mobile phones, the appropriate social media tool was utilized (Levine et al., 2008).

The Salmonella Typhimurium event of early 2009 and the associated recalls of various peanut butter and peanut-containing products resulted in a comprehensive and collaborative social media campaign by the U.S. Department of Health and Human Services (U.S.DHHS), CDC and the Food and Drug Administration (FDA). Multiple social media tools such as Twitter, YouTube, blogs, eCards, social networking websites, podcasts and text messaging were
incorporated into the campaign (CDC, 2009a). These tools allowed the organizations to accelerate outreach by rapidly disseminating and updating information on product recalls, investigation outcomes, and health-related guidance for suspected infection to consumers and health partners.

CDC went further in its efforts to engage and educate consumers and partners. The agency hosted a “bloginar,” an Internet-based seminar hosted specifically for bloggers, to provide accurate information and give bloggers the opportunity to speak with FDA and CDC subject matter experts about the outbreak efforts and discuss future resources during food safety incidents (CDC, 2009b). Bloggers could then post credible information regarding the outbreak to their blogs and followers.

Although there are no metrics for the number of deaths and illnesses prevented, one can argue that the campaign increased awareness of the outbreak. CDC widgets were viewed 210,195 times during January 2009; in February 2009 [following CDC’s bloginar held on February 3, 2009], the number of views and interactions skyrocketed to just under 11.5 million (CDC, 2011). As of December 2010, the peanut recall widget was one of the two most popular CDC widgets (CDC, 2011). On the day prior to the CDC-hosted bloginar, the DHHS-hosted Peanut Product Recall Blog had only 319 views, contrasted by the following day which had 2030 views (U.S. DHHS, 2009a). By leveraging multiple platforms across multiple agencies, outreach was greatly enhanced. As one blogger, referring to CDC’s social media efforts during the outbreak, noted, “A government agency long associated with slow response time …has set the example for health communications at large” (Hollander, 2009, para. 2).
Risk Communication for Emergencies and Disasters

Social media tools and tactics have emerged as critical elements of emergency and disaster preparedness, response and recovery planning. Social media has been credited with fueling the 2011 revolutions in North Africa (Banks, 2011; Essa, 2011), helping responders to the 2010 Haitian earthquake deliver food and critical medical attention to people they may have otherwise not discovered (American Red Cross [ARC], 2010b), and facilitating essential information sharing about road closures and available shelters during the 2011 U.S. snowstorms (Ehrlich, 2010). The ability to communicate critical information to a large number of people in real time is one of the primary advantages of social media during an emergency or disaster.

CDC has incorporated innovative ways of relaying emergency messages to a broad audience quickly and efficiently. The agency has a dedicated Twitter account [@CDCemergency] used for relaying emergency public health messages. As of February 9, 2011, the account had over 1.2 million followers (Twitter, 2011). People who do not wish to join Twitter can elect to receive the same messages via SMS on their mobile device. CDC has used these platforms to communicate everything from the risks of carbon monoxide build-up from generator use during the 2011 U.S. blizzards to health warnings to travelers to Haiti following the devastating 2010 earthquake (Twitter, 2011). As with other social media @CDCEmergency Twitter is a two-way platform; followers can send comments and questions to the agency as well as receive alerts.

Social Media in the 2009 H1N1 Influenza Pandemic

On Sunday, 26 April 2009, the Acting Secretary of DHHS declared a public health emergency in response to the H1N1 novel influenza A outbreak (U.S. DHHS, 2009b). During its initial stages, private and public sectors feared vast catastrophic health and economic
consequences resulting from the pandemic (Ding & Zhang, 2010). Much was unknown about the virus; there was no vaccine, vulnerable populations had yet been identified, and strategic planning had focused on an avian influenza [not swine] pandemic originating in Asia (Ding & Zhang, 2010; U.S. Homeland Security Council, 2005).

CDC incorporated crisis and emergency risk communication (CERC) principles during the outbreak. The CERC model is a combination of crisis and risk communications. CERC principles evolved after the 2001 anthrax outbreak and the perceived relationship to the 9/11 terrorist attacks (Reynolds & Seeger, 2005). Because these events generated pervasive fear and anxiety among the general public, public health officials had to communicate effectively in an environment where there were many unknowns and the potential threat to health was high – without causing widespread panic. The CERC model attempts to counter misconceptions and misinformation that may result in unnecessary burdens to vital infrastructure and harmful human behavior that may arise during a crisis (CDC, 2002).

The CERC model is based on 5 stages of crisis (Reynolds & Seeger, 2005):

1. **Precrisis** (Risk messages; warnings; preparations),
2. **Initial Event** (Uncertainty reduction; self efficacy; reassurance),
3. **Maintenance** (Ongoing uncertainty reduction; self-efficacy; reassurance),
4. **Resolution** (Resolution updates; discussion about cause, new risks and understanding of risks), and
5. **Evaluation** (Discussions of response; consensus of lessons learned; understanding of new risks).

Communications during the outbreak had to be handled effectively and transparently, which meant providing continuous, changing information to consumers and partners while acknowledging uncertainty about the virus. CDC and DHHS faced several challenges – the
agencies had to provide accurate and credible information when little was known about the virus, while concurrently gaining trust and dispelling myths and misinformation. These challenges were compounded by CDC’s leading role in a failed mass vaccination campaign for a swine influenza outbreak in 1976 in which some people claimed to have become ill or have loved ones die from a vaccine for an illness that did not spread as predicted (Spector, 2009).

To confront these obstacles, CDC and DHHS quickly began a campaign to communicate information with public and health partners using social media (CDC, 2010c) in addition to daily media briefings. These tools allowed CDC to convey current and accurate information as soon as it was available, to as many people as possible. Risk communications using social media included general information about H1N1; reports on influenza activity in the U.S.; prevention tips and policies and guidelines for health departments, health practitioners, government and business leaders, schools and local communities; and official government announcements regarding actions, efforts and successes, and scientific research (Ding & Zhang, 2010). Platforms utilized included buttons and badges, e-Cards, Flickr, Twitter, Facebook, YouTube, Widgets and Podcasts (CDC, 2010c). Table 2.2 illustrates the utilization of various media CDC employed during the campaign.

Overall, CDC’s social media and communications campaign extended the reach of science-based, credible information. According to Nielsen Online metrics, the number of followers of CDC’s Twitter accounts increased 86% between April 28 and May 1, 2009 (Davies, 2009). A single video that gives an overview of H1N1 posted to CDC’s video YouTube channel had almost 200,000 views during the same time period and had a 4.5 star (on a 1 [low] to 5 [high] scale) rating (Davies, 2009). A review of 20 public opinion polls found that Americans quickly embraced two fundamental public health recommendations during the early weeks of
Table 2.2
CDC Social Media Usage during H1N1 Pandemic

<table>
<thead>
<tr>
<th>Social Media Employed</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDC Facebook Page</td>
<td>56,800 fans</td>
</tr>
<tr>
<td>CDC’s YouTube Channel, CDCStreamingHealth</td>
<td>3.13 millions views</td>
</tr>
<tr>
<td>eCards</td>
<td>Sent more than 22,000 times</td>
</tr>
<tr>
<td>Podcasts</td>
<td>2.67 million views</td>
</tr>
<tr>
<td>Text messaging</td>
<td>16,000 subscribers</td>
</tr>
<tr>
<td>Twitter (3 primary CDC accounts)</td>
<td>1.28 million followers</td>
</tr>
<tr>
<td>Widgets</td>
<td>5 million views</td>
</tr>
</tbody>
</table>

Source: CDC (2010d)
the pandemic: almost two-thirds of respondents said that they or family members were washing their hands or using hand sanitizer and many (55%) had made arrangements to stay home if they or a family member became ill (SteelFisher, Blendon, Bekheit, & Lubell, 2011). These recommendations were conveyed to the public using traditional means of communications, e.g., press briefings, as well as social media (CDC, 2010c).

The federal government’s response for H1N1 was not without controversy. The development and distribution of H1N1 vaccine was widely disparaged. In early 2010, former U.S. senators Bob Graham (D-Florida) and Jim Talent (R-Missouri) wrote a scathing editorial in the Washington Post criticizing vaccine production methods, an outdated surveillance system and diagnostic technology (Graham & Talent, 2010). There were complications in the H1N1 vaccine development. The U.S. used an egg-based system for development of vaccine; there were lower quantities of vaccine from inoculated eggs that resulted in delayed vaccine production. The government anticipated 160 million vaccine doses would be available by late October, 2009; there were less than 30 million doses available at that time (McNeil, 2010). Vaccine distribution to states was based on population size resulting in long lines at many local health departments and a loss in confidence that the government would be able to avert a national epidemic (Cable News Network [CNN], 2009; McNeil, 2010). As the outbreak progressed and H1N1 proved to be less lethal than initially feared, public outcry began over what many considered government overreaction to the pandemic and wasteful spending of taxpayer monies for vaccine production (Stein, 2010). Despite these concerns, 59% of Americans “believed that public health officials did an excellent or good job during the response” (SteelFisher, Blendon, Bekheit & Lubell, 2011, p. 5).
The Federal Emergency Management Agency (FEMA), a government leader in use of technology, has been using social media tools since 2008, and was one of the first agencies to use Twitter. The current [2011] director of FEMA, Craig Fugate, is moving the agency towards a more personalized approach to preparedness and response efforts using social media. He has met with leaders at Twitter, Facebook, Apple and Wired Magazine to discuss social media, technology, emergency management and public engagement in preparedness (Fugate, 2011). The agency’s efforts are inclusive; the public and private sectors are involved to establish the best ways to use social media and two-way interaction in disaster response (Hoover, 2011). For example, in a disaster recovery situation, FEMA could ask retailers to report store closings and then overlay that data on a map to provide available food aid to affected areas. Fugate notes that “…information that is personalized is much more important” (Hoover, 2011, para. 7). FEMA is exploring personalizing information by developing an application that will incorporate a global positioning system (GPS) to provide area-specific information or turn-by-turn directions to an agency aid website (Hoover, 2011). It is expected that social media will play a significant role in FEMA’s preparedness and response plans.
Chapter III

Barriers to Use of Social Media by Public Health Organizations

Leadership Buy-In

Many public health organizations operate with limited manpower and fiscal resources. As a result, public health leadership may be reluctant to dedicate the resources needed to effectively implement a social media program. They may be resistant to incorporating social media because of lack of knowledge. Fear of message distortion and losing control of the message are often cited as barriers to implementing social media (Alston, 2008; Currie, 2009a).

When presenting social media as a part of an organization’s communications plan, several principles can help achieve buy-in. First, it is important to articulate what social media is and how it will benefit an organization (Howard, 2010) as public health leaders cannot be expected to adopt tools that they do not understand. Secondly, presenting data on who is using social media, how it is being used, and providing examples of how similar organizations are successfully using social media can generate buy-in (Howard, 2010). A strategy that clearly defines allocation of resources will allow leadership to envision successful implementation of social media in the organization (Jax, 2011).

Sustainability

Sustainable social media does not refer to simply creating a Facebook page and hoping the target audience will find the organization or campaign. Social media is a long-term commitment. It requires constant monitoring, updating of information and tools, and conducting program evaluation to effectively engage with consumers and partners. Generating and managing conversations, listening to audiences’ needs, and creating long-term strategies are all necessary
for a sustainable social media program (Askanase, 2010; Constant Contact, 2010; Hughes, 2010; Mackey, 2011).

To enhance sustainability, an organizational communications strategy that allocates appropriate resources for implementing and managing social media is essential. Partnering with other organizations can expand social media communications tools and share messages which helps abate resource depletion and amplify messages (Currie, 2009a). While one may be tempted to try each new tool that becomes available, it is preferable to begin with a small number of tools and develop them well (CDC, 2010d; Currie, 2009b; Falcow, 2009). Social media requires flexibility to allow for changes to meet audiences’ needs.

**Lack of Knowledge**

Both public and private organizations cite a lack of knowledge regarding social media and its related technology as a barrier to implementing social media (Currie, 2009a). Some organizations are unwilling to try new technology without knowing if they have the internal capability to handle them. Organizations can begin with a single tool and gradually build their social media toolkit as comfort level with technology grows. There are many free resources available (Appendix C) to obtain help and information on social media. The more popular social media tools have tutorials and offer user-friendly, intuitive interfaces that allow for ease of navigation.

**Infrastructure**

Communications infrastructure is a barrier to social media during an emergency. One problem is the capacity of responders to monitor and act on the information that is being submitted on their social media platforms (ARC, 2010b; Morton, 2010). An American Red Cross (2010a) survey found that 1 in 5 Americans would try to contact responders via email, websites
or social media if they could not reach 9-1-1 during an emergency. Further, if users were seeking help for someone else, 44% would use ask other people in their social network for help, 35% would post a request for help on a response agency’s Facebook page and 28% would send a message via Twitter to responders (ARC, 2010b). Two-thirds of respondents believe that emergency response agencies should regularly monitor and respond to postings on their websites. However, nine of ten respondents to a June 2010 survey of disaster response practitioners said their organization lacks adequate staff to monitor social media during a major event (Morton, 2010). There is no quick fix to address capacity issues with dwindling budgets and resources. In the meantime, organizations and jurisdictions should evaluate their social media policy to address potential legal issues and minimize their liability (Morton, 2010).

The potential for mobile platforms or computers to be incapacitated either as a result of the physical nature of the event or the high volume of communications renders many social media useless. Emergency planners recommend organizations develop a “Plan B.” Social media should not be the sole method for messaging and sending alerts or warnings. Therefore it is essential to review the organization’s continuity of operations plan to ensure a back-up plan exists in the event of technology failure (Cahill, 2011).

Access to Technology

In the 2008 American Community Survey, 12.1% of the U.S. population reported having a disability: almost 7 million reported a visual disability and over 10 million had a hearing disability (Cornell University, 2010). Disabled persons have been able to utilize many Internet technologies with the advent of assistive technology. The visually impaired can “read” online newspapers via screen readers – devices that read the screen’s text aloud – or text magnifiers; the hearing impaired can watch multimedia with captioning and people with motor disabilities
can navigate web pages using voice recognition software or other devices. However, it is up to the content generator to include the adaptive technology (W3C, 2005). Without the adaptations, screen readers may not be able to read web pages to the user or the hearing impaired may miss potentially vital information without captioning.

Whether communicating general health or emergency communications, public agencies have a moral and legal obligation to ensure social media platforms are accessible for disabled persons. The Americans with Disabilities Act and, if the entity receives Federal funding, the Rehabilitation Act of 1973 (Sections 504 and 508) require State and local governments provide “qualified individuals with disabilities equal access to their programs, services, or activities unless doing so would fundamentally alter the nature of their programs, services, or activities or would impose an undue burden” (U.S. Department of Justice [DOJ], 2003, p. 1). There is also an international set of Web Content Accessibility Guidelines developed by the Worldwide Web Consortium (W3C), the governing body of the Worldwide Web (W3C, 2008), based on the following criteria:

1. *Is it perceivable?* The content is available to the senses either through a browser or assistive technologies?

2. *Is it operable?* Users can use a keyboard, mouse or assistive device to interact with controls and elements.

3. *Is it understandable?* The content is clear and unambiguous.

4. *Is it robust?* A wide variety of technologies, new and old, can access the content.

Some adaptive social media tools already exist. AccessibleTwitter is an alternate interface to Twitter. It has most of the functionality of Twitter, and includes an interface that can be keyboard controlled and script that can be read by screen readers for disabled users (Dolson,
Easy YouTube provides an alternate, and fully accessible, interface to YouTube videos that allows users to view video (Dolson, 2010). Facebook has been working with the American Foundation for the Blind to make its website more accessible to the visually impaired. It has incorporated technology that is compatible with screen readers; its success has been variable based on reviews and comments by some in the visually impaired community (Lentz, 2009).

**Message Distortion**

Some of the advantages of social media may also be perceived as disadvantages. Social media is instant and viral. Users typically have vast social networks that allow for the proliferation of rumors and misinformation at rapid speed. Webster University’s Orlando campus learned this lesson the hard way. While performing a test on the emergency messaging platform, the university inadvertently sent a test message regarding an on-campus shooter to the university’s Facebook and Twitter accounts instead of a single test phone. The university had 500 followers on Twitter at the time; many people forwarded the message to their social networks which reached an estimated 5,000 people (University Business, 2009).

In 2010, a report compared corporate-generated message content shared on social media platforms to messages covered on blogs (Burson-Marsteller, 2010). In the U.S., only 24% of coverage on blogs reflected the company’s intended message. The report cites the tendency of bloggers to include “opinions, personal experience, knowledge of competitors and products, and speculation” as a reason for message distortion (Burson-Marsteller, 2010, slide 11).

The Internet has given users increased power to question authority and the opportunity to comment on, debate and share opinions on any issue they choose. Unfortunately, a potential problem that arises in that these opinions may not be in agreement with subject matter experts [SMEs] or evidence (CDC, 2008). According to Aula (2010), social media generates a
“collective truth” (p. 46). Users of social media interpret communications subjectively and subsequently share their subjective truth to their networks resulting in a collective truth (Aula, 2010). For example, misinformation circulated very quickly around the digital world in the early days of the H1N1 influenza pandemic. Many inaccurate and alarming tweets were sent, including assertions that the virus was transmitted via pork products and the possibility it was an agent of “germ warfare” (Morozov, 2009, para. 6). Morozov believes the majority of misinformation on Twitter regarding the outbreak was “motivated by desires to fit in, do what one’s friends do (i.e. tweet about it) or simply gain more popularity” (2009, para. 3). The ability of social media to spread erroneous information and create fear and panic among the public should not be underestimated.

Message distortion can be managed using several practices. Planning for contingencies such as message distortion and the spread of misinformation, particularly during crises and emergencies, will help to shape and control messages. With a plan in place, an organization can quickly respond to erroneous information and manage the conversation. In addition, policy that addresses the review of social media communications prior to dissemination by SMEs to ensure information is factually correct and content is appropriate should be employed. Equally important, resources should be devoted to monitoring social media efforts. Consistent and frequent monitoring of social media allows the organization to respond to and correct misinformation and rumors (Hughes, 2010).
Chapter IV
Recommendations

Policy

Without deliberate consideration of governance and organization, social media can negatively impact an organization’s image (Solis, 2010). Gilbert Gottfried, a comedian who provides commercial voice-overs for the insurance company American Family Life Assurance Company (Aflac) based in Columbus, Georgia, posted several [tactless] jokes on his personal Twitter feed regarding the March 2011 tsunami and earthquake in Japan. Japan accounts for 75% of Aflac’s revenue (Elliot, 2011). Mr. Gottfried’s unsanctioned personal use of social media may ultimately damage the company’s brand in an important business sector. In 2010, an Oceanside, California hospital terminated 5 employees for discussing patients on Facebook in violation of the Health Insurance Portability and Accountability Act of 1996 (Anderson, 2010). After the story was aired on local and national news stations and websites, the hospital was forced to publicly defend its reputation and commitment to patient privacy. These examples highlight the importance of an organization’s social media policy.

A framework should provide guidance and establish standards for the use and management of social media – internally and externally, e.g., personal and/or professional use when accessed from work (Lolito, 2010). Policy provisions may include disclaimers employees must include if they offer their personal opinion related to the organization and governance over the use of the organization’s logo (Jackson Lewis, 2010). Organizations should assign roles and authority for moderating or posting comments to the social media employed (Lolito, 2010).
Personnel should be designated to manage and govern social media tools to ensure consistency, clarity and control over the organization’s messages.

There are legal issues associated with personal use of social media that should be considered when forming policy. The National Labor Relations Act of 1935 protects employees who engage in “concerted activity”; oftentimes, this includes the right to discuss the terms and conditions of their employment (Jackson Lewis, 2010). In addition, some states have additional laws that protect individuals’ off-duty activities (Jackson Lewis, 2010; Lolito, 2010). However, Steinman and Hawkins (2010) state pertinent case law has found that “users of social networking sites do not have a reasonable expectation of privacy from employers with respect to information on the users’ profile pages” (p. 8). To preclude confusion and potential liability issues related to social media, it is essential to create boards or committees with legal representation (Morton, 2010).

Practice

Develop a Social Media Strategy

A social media strategy should complement a broader communications plan and must be aligned with overall organizational goals (CDC, 2010d; Constant Contact, 2010; Hughes, 2010). A common mistake made by many organizations is “blindly” jumping into social media without developing a strategy to use it beforehand (Currie, 2009a; Falcow, 2009). As with any communications, goals, objectives and strategies need to be identified to organize and focus efforts.

A comprehensive strategy should include the following components (CDC, 2010c; Falcow, 2009; Hughes, 2010):

- define your audience(s) and their communication needs,
- establish objectives and goals for social media,
- determine available resources (human and digital),
- determine communication channels, and
- evaluate the efficacy of the social media employed.

Akin to any communications strategy, organizations need to determine whom they want to reach. It is tempting to define the target audience as the “general public” when developing a wide-reaching intervention for a large population. However, effective social media campaigns, as with traditional communications, require segmentation and prioritization to amplify messages for the intended audience(s) (Falcow, 2009; Hughes, 2010). Communicators should not only understand the audience’s attitudes, beliefs and behaviors as they relate to the intervention, but also how they relate to the Internet and social media (CDC, 2010d; Hughes, 2010). To guide an organization’s social media efforts, audience online behaviors should be observed and monitored as well as what content they comment on and share (Falcow, 2009; Hughes, 2010). Data should be collected on audience approaches to gathering health information online, preferred social media channels and where and when social media is accessed (CDC, 2010d; Hughes, 2010).

Objectives and goals will shape the social media communications campaign or program. Similar to traditional messaging, setting digital objectives clarify what the organization wants to achieve through social media. These objectives should support the organization’s mission and overall communications plan (CDC, 2010d, Constant Contact, 2010; Hughes, 2010). For instance, is the objective to initiate social media for emergency alerts or is it to drive more traffic to the organization’s website for health information? Establishing measurable social media objectives at the beginning of a program or campaign will lay the groundwork for evaluation.
CDC recommends using the SMART format for determining objectives, as described in its Social Media Toolkit (2010d):

- **Specific**: What does the organization want to accomplish and with whom?
- **Measurable**: Is the objective quantifiable, how will it be measured? Remember, “If you can’t measure it, you can’t manage it” (Falcow, 2009).
- **Attainable**: Is the objective achievable with the time and resources allotted? Be realistic.
- **Relevant/Realistic**: Does the objective support the organization’s overall goal and mission?
- **Time**: Has a timeline been determined for meeting the objective?

Social media goals should not be confused with overall communication goals. These tools alone may not meet all communications goals. During a social media program’s infancy, goals should be modest and attainable (CDC, 2010d; Constant Contact, 2010). An organization should allow itself time to become accustomed to using selected tools and platforms and establish its own social media community (Constant Contact, 2010).

**Develop Content**

Success in social media requires an organization to engage people with relevant content (Constant Contact, 2010; Falcow, 2009; Hughes, 2010). Once the target audience has been identified, online behaviors characterized, and objectives determined, key messages can be developed. It is essential that messages are clear and applicable to the audience. Content should be tailored based on the channel, i.e., organization to partner, or organization to consumer (Hughes, 2010).

Equally important is listening to the audience. “Listening” is accomplished by following conversations and comments on external online websites and actively soliciting input from users.
(Constant Contact, 2010; Hughes, 2010). Listening provides an organization the opportunity to correct misinformation and gain valuable insight into other methods of engaging the target audience (Hughes, 2010).

**Allocate Resources**

Adequate resources must be allocated for social media to be successful. The organization’s amount of expertise and level of comfort with social media tools should be objectively assessed (Mackey, 2011) and considered when allocating resources. The organization should establish who will be responsible for initiation and management of social media and how many hours will be allocated to social media efforts.

To conserve resources and increase outreach, collaborate with existing and identify new partners in social media efforts (CDC, 2010d; Currie, 2009a; Hughes, 2010). Combining resources is beneficial for all organizations involved. Assignment of specific roles and responsibilities is essential to ensure optimal use of resources (Falcow, 2009). To optimize success, partners should plan for evaluation at predetermined intervals for review and modification of existing, summarizing lessons learned and identification of new social media.

**Identify Tools**

Social media tools and platforms should be utilized that will reach the intended audience and meet the organization’s objectives. By collecting data on the target audience’s online behaviors and preferences, appropriate tools for the organization can be identified (CDC, 2010d; Falcow, 2009). For example, creating a Twitter account isn’t logical if the majority of the audience uses Facebook. This information will help effectively determine what tools to adopt and if the allocation of resources is appropriate (Falcow, 2009).
Evaluation

Due to social media’s new and constantly evolving nature, the effectiveness of its tools and tactics are difficult to measure and define (Currie, 2009a). In a 2009 survey, only 41% of public health practitioners reported evaluating the effectiveness of social media (Currie, 2009a). Despite its infancy, social media should be evaluated as any other communications strategy. There are several ways to quantitatively and qualitatively evaluate social media, such as web analytics and user surveys.

Web analytics measure, collect, analyze and report Internet data “for purposes of understanding and optimizing web usage” (Web Analytics Association [WAA], n.d., para. 1). These metrics should be applied to monitor and report usage and trends (CDC, 2010d; Currie, 2009a; Falcow, 2009).

Some useful metrics include (CDC, 2010d; Dash, 2010):

- **Visitors and sources of traffic.** How many visitors have social media platforms had over a set frequency - the course of a day, week, month, quarter?
- **Network size (followers, fans, members).** How many total followers, fans or members are in the network? How many are active or inactive users?
- **Quantity of commentary.** How many Facebook status updates and blog postings occur?
- **Duration of engagement.** How long did a visitor spend on the webpage or platform?
- **Bounce rate.** Did the visitor enter the website and leave without exploring other pages or links within the site?
- **Virality.** How many users share tweets on Twitter and updates on Facebook?
Qualitative data can be gathered by developing and posting surveys to solicit user feedback about the organization’s social media efforts. This will help garner valuable data, engage the audience, and demonstrate that the organization values their opinions.

**Social Media Best Practices**

1. **Develop a strategy.** Social media is a component, not a replacement, of a broader communications plan. Realistic goals and measurable objectives that are congruent with an organization’s overall vision and mission should be developed along with sufficient resources to accomplish them.

2. **Be where the people are.** Social media allows people choices of where to find, receive and exchange information. Audience online behaviors should be monitored to ensure proper utilization of tools and relevance of content.

3. **Select appropriate social media tools.** This is especially true for new adopters of social media. During the initial stages of implementation, an organization should employ low-risk tools and, as resources allow, build on experience.

4. **Ensure the organization’s messages are credible and accurate.** Subject matter experts should be consulted for data collection and formulation of credible and accurate messages. It is especially important in public health to establish and preserve trust with consumers and partners. Information is more likely to be trusted, utilized and shared among users if they feel it is authentic and transparent (Hughes, 2010).

5. **Incorporate tools that facilitate sharing.** Tools that enable the audience to share information or demonstrate their involvement with an organization in a visible way will increase outreach (Constant Contact, 2010; Falcow, 2009). Social media tools can be augmented by leveraging networks as users know where to find and how to
connect with the organization (CDC, 2010c). Tools, such as widgets, allow users to post and share information on their blogs, websites or Facebook pages. In addition, the inclusion of a sharing button from websites such as AddThis.com or ShareThis.com is a simple method for users to share content (Constant Contact, 2010). As Hughes (2010) notes, “if consumers find they cannot easily access or share information via a social media application, they’ll likely move elsewhere” (p. 9).

6. **Participate and encourage participation by users.** Social media is built on the premise of two-way communication. It is not enough to post information about a health topic; request feedback on the topic to encourage a dialogue (Constant Contact, 2010). It is critical that the organization monitors and responds to comments and questions promptly. It is easier to maintain or gain audience engagement by listening to what people are saying to and about the organization.

7. **Use “one–click” when possible** (Hughes, 2010). Users want to find information quickly and easily. Social media tools that provide access to additional information and other platforms by “one click” will keep the audience engaged and prevent technology fatigue. In other words, the audience does not have to move through, or “click” through several websites to reach the desired platform. Links to websites should be checked and updated periodically.

8. **Collaborate with partners.** By its nature, public health is a collaborative function. To conserve resources and extend outreach, organizations should connect with potential private and public partners for training, messaging, and stakeholder engagement (Currie, 2009a).
9. **Remember that social media is a tool, not the entire communications strategy.**

Social media is a component of the overall communications strategy. Although social media has the potential to extend outreach greatly, it will not replace some traditional means of audience engagement.

10. **Evaluate.** The effectiveness of social media should be evaluated routinely. Is the organization meeting its [measureable] goals and objectives? Allow for adaptation of social media efforts. Evaluation results should be used to adapt the social media efforts to the audience needs.

**Conclusion**

The use of social media has grown dramatically over the last 5 years, and its growth is projected to continue. Social media has the potential to build community, enhance risk communications and supplement surveillance in public health. A frank assessment of available resources for implementation and sustainability is essential to its success. Regular evaluation via analytics and qualitative data will ensure the appropriate use and selection of social media. Used strategically and in alignment with organizational vision and goals, social media can successfully augment traditional and emergency communications plans and interventions. As the number of people who engage in social media increases, public health organizations can capitalize on the technology to improve health.
References


Appendices

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## Appendix A

### Mobile Phone Usage by Race

<table>
<thead>
<tr>
<th>Activity</th>
<th>White, non-Hispanic</th>
<th>Black, non-Hispanic</th>
<th>Hispanic, English-speaking</th>
<th>All Mobile Phone Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Send or Receive Text Messages</td>
<td>68%</td>
<td>79%</td>
<td>83%</td>
<td>72%</td>
</tr>
<tr>
<td>Access Internet</td>
<td>33%</td>
<td>46%</td>
<td>51%</td>
<td>38%</td>
</tr>
<tr>
<td>Record a Video</td>
<td>29%</td>
<td>48%</td>
<td>45%</td>
<td>34%</td>
</tr>
<tr>
<td>Use Social Networking Website</td>
<td>19%</td>
<td>33%</td>
<td>36%</td>
<td>23%</td>
</tr>
<tr>
<td>Use a Status Update Service</td>
<td>8%</td>
<td>13%</td>
<td>15%</td>
<td>10%</td>
</tr>
<tr>
<td>Use Phone to Look Up Health Info</td>
<td>15%</td>
<td>19%</td>
<td>25%</td>
<td>n/a</td>
</tr>
</tbody>
</table>

**Source:** Smith, A. (2010c)
## Appendix B

### E-patients and Health Information Seeking Activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>Quantity of e-patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read commentary or experience about health or medical issues on an online news group, website or blog</td>
<td>41%</td>
</tr>
<tr>
<td>Consulted rankings or reviews online of physicians or other providers</td>
<td>24%</td>
</tr>
<tr>
<td>Consulted rankings or reviews online of hospitals and other medical facilities</td>
<td>24%</td>
</tr>
<tr>
<td>Signed up to receive updates about health or medical issues</td>
<td>19%</td>
</tr>
<tr>
<td>Listened to a podcast about health or medical issues</td>
<td>13%</td>
</tr>
</tbody>
</table>

**Source:** Fox (2009)
Appendix C

Social Media Resources

Social Media Websites

Facebook
www.facebook.com

Flickr
www.flickr.com

LinkedIn
www.linkedin.com

MySpace
www.myspace.com

Twitter
www.twitter.com

YouTube
www.youtube.com

Accessibility Resources

W3C, Introduction to Web Accessibility
http://www.w3.org/WAI/intro/accessibility.php

W3C, Web Content Accessibility Guidelines
http://www.w3.org/WAI/intro/wcag.php

General Resources

American Red Cross
Social Media
http://www.redcross.org/connect/

Centers for Disease Control and Prevention
The Health Communicator’s Social Media Toolkit
http://www.cdc.gov/healthcommunication/ToolsTemplates/SocialMediaToolkit_BM.pdf
Centers for Disease Control and Prevention
Crisis and Emergency Risk Communication
http://www.bt.cdc.gov/cerc/CERConline/index.html

Social Media Governance: A Comprehensive List of Social Media Policies for Various Organizations
http://socialmediagovernance.com/policies.php

U.S. Government, General Services Administration, Office of Citizen Services and Innovative Technologies
http://www.howto.gov/social-media/social-media-types