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The Potential for Social Media to Educate Farm Families About Health and Safety for Children

Lisa Gualtieri, PhD, ScM

ABSTRACT. Social media has the potential to reach farm families to educate them about health and safety for children. It offers advantages over traditional approaches because of the shorter time between creation and distribution and because of the greater reach and engagement possible. Recommendations are provided for how government agencies and the private sector can learn about and use social media to promote health and safety for children as a supplement to traditional approaches.

KEYWORDS. Agriculture, children, education, farms, health and safety, social media

PURPOSE

Social media as a means of public discussion is growing in popularity in all demographics and disciplines. Social media offers advantages over traditional approaches to health and safety education, such as brochures and fact sheets, and over the use of static Web sites, because of the shorter time between creation and distribution and because of the greater reach and engagement possible.

To determine the potential of social media to educate farm families about health and safety for children, we examine Internet access and social media use by rural and farm families to determine if there is sufficient critical mass. We present the limited examples of the use of social media to educate farm families about health and safety for children. However, there are many uses of social media in related contexts that provide confidence in the potential of social media to educate farm families, as well as other stakeholders and constituencies associated with agricultural worksites, about health and safety for children. Based on these examples of social media use, we provide recommendations for how government agencies and the private sector can use social media to promote health and safety for children as a supplement to traditional approaches.

INJURIES IN CHILDREN WHO WORK OR LIVE ON FARMS

Agriculture is the most dangerous industry in the United States for adults[1] and for young workers who are directly hired, employed by labor contractors, or working in the family business.[2] For these young workers, safety hazards include machinery, motor vehicles, drowning, confined spaces, work at elevations,

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and work around livestock as well as exposure to agricultural chemicals, noise, respiratory irritants, and toxic gases.[2,3] Injuries are not limited to workers; the 2006 Childhood Agricultural Injury Survey estimated there were 22,900 injuries occurring to youth who lived on, worked on, or visited farms in 2006.[3,4] Thus, any opportunity to increase education about health and safety for children on farms is worth exploring, especially with the greater reach and engagement possible with social media.

INTERNET, BROADBAND, AND MOBILE ACCESS

Internet use is growing in for all age groups; as of May 2010, 79% of all American adults 18 and older use the Internet.[5] Heaviest use is by adults aged 18–29 (95%), followed by teens aged 12–17 (93%), adults aged 30–49 (87%), and adults aged 50–64 (78%). Lowest use is by adults aged 65 and older, of whom 42% access the Internet.

Growing numbers of rural residents have Internet access. In 2003, Internet use was 67% of urban residents, 66% of suburban residents, and 52% of rural residents.[6] The 2007 census found that 57% of all farmers have Internet access and, of those, 58% reported having a high-speed connection.[7] In 2011, 60% of rural residents had broadband access.[8]

Mobile phone use has increased Internet access throughout the United States with 85% of US adults owning cell phones.[9] Although a rural-urban digital divide in Internet access exists,[10–12] the gap is closing.[13] It may ultimately close through increased mobile penetration rather than broadband.

SOCIAL MEDIA USE

Social media is the use of Internet and mobile technologies for communication that incorporates end-user participation and user-generated content. In contrast to brochures and Web sites, messages may be shorter, less formal, have a shorter life span, and be designed to elicit responses. Popular social media technologies include Twitter, Facebook, YouTube, and blogs. With roots in casual, personal communication, social media is increasingly used professionally, as exemplified by the prominence of social media links on Web sites and in advertising. Some notable viral examples of social media are President Obama's presidential campaign, the Super Bowl, the Old Spice campaign, and the earthquake in Japan.

Social media provides opportunities to reach groups with tailored messages about health and wellness and to enhance the acceptance of messages to specific populations. Social media, furthermore, offers the potential for greater engagement because recipients can easily and immediately ask questions, share experiences, and provide feedback using the same social media technologies on which they received educational messages. Because social media is relatively new, limited research has examined the effectiveness and impact of these tools and instead measures such as the number of followers, fans, or comments are commonly used.

Social media use is pervasive, with 46% of online US adults aged 18 and older using a social networking site like Facebook, and 65% of teenagers aged 12–17 using online social networks[14] with increasing access through mobile devices. In August 2009, Facebook was the most popular online social network for American adults aged 18 and older[15] and Facebook has since surpassed Google as the most visited Web site. As of September 2009, 19% of online American adults update their status or view other's status updates on services such as Twitter.[15] About 110 million tweets are posted every day, with 40% coming from mobile devices[16] and Americans spent an estimated 2 hours and 12 minutes tweeting and reading tweets on Twitter in November 2010.[17] As of April 2009, 62% of adult Internet users have watched videos online, with many organizations developing their own video channels.[18]

There are few data specifically about rural or farm use of social media. The demographics of farmers are changing[19]; farmers are becoming more demographically diverse, with the number of young farmers increasing[7] and many of them rely on social media, such as turning to

YouTube for farming education.[19] The infiltration and use of social media may be impacted by more than Internet access and demographics. One study of MySpace found indications that personal use of social media aligns more closely with the values and needs of urban communities than with rural ones due to the differences in formation and maintenance of social capital.[12] Although rural members logged in more frequently than urban members, they tended to have fewer online friendships and their friends lived in closer proximity.[13,20] The implications of this are inconclusive, because there are many differences between urban and rural lifestyles and culture.

SOCIAL MEDIA USE BY HEALTH ORGANIZATIONS

Social media has been adopted by many health care organizations and professionals, including for the dissemination of evidence-based information to the public, including parents, students, educators, community members, and stakeholders.[21] Whereas traditional outreach approaches have had limited success and can be difficult to sustain, "social media offers a new method to reach the public, including families and parents; however little evaluation research has been conducted, especially among groups with health disparities."[21] Furthermore, many uses of social media for health education push messages to target audiences instead of engaging target audiences in more participatory ways that are in keeping with the nature of social media. Research studies on social media and health have found that social media's health-enhancing potential can occur through an increase in perceived social support and interconnectivity and through more democratic and recipient-controlled information-sharing.[22] In addition, public health programs have used social media successfully for health promotion efforts such as smoking cessation and dietary interventions.[22] Although noncredible health information has always been available through word-of-mouth and other mechanisms, the Internet and particularly social media have lowered the barriers to producing and promoting poor-quality or deceptive information. Research has identified the "indirect and sometimes unintended negative health impacts of social media,"[22] underscoring the need both improved digital and health literacy skills, and also the importance of health organizations themselves using social media to provide information of high quality.

Travis County, Texas's, Coordinated Approach To Child Health (CATCH) is a project designed to promote physical activity and healthy food choices and prevent tobacco use in elementary school–aged children.[23] CATCH deployed social media, including blogs, Facebook, and Twitter, with a strategy of selecting provocative topics and intertwining evidence-based health information with personal stories. Using Google Analytics to analyze traffic and determine the effectiveness of dissemination approaches, they found that the most heavily viewed topics were about increasing physical activity and improving dietary behaviors. Furthermore, evaluation results from low-income and culturally diverse families showed the articles were easy to understand and the personal stories increased interest.[21]

A leader in the use of social media in health care is the Centers for Disease Control and Prevention (CDC), deploying common (Twitter, Facebook, and YouTube) and innovative (iTunes, eCards, and badges) social media technologies. The CDC Web site (http://www.cdc.gov/socialmedia) provides links to the many types of social media they employ and a Social Media Toolkit with guidelines for the use of specific technologies. Many CDC campaigns used multiple forms of social media, such as one to educate parents about safe teen driving (http://www.cdc.gov/Motorvehiclesafety/Teen_Drivers/resources.html), which uses Facebook, buttons, badges, eCards, blog posts, podcasts, and video. Another example is Heads Up—Brain Injury Awareness, which uses a Facebook page (http://www.facebook.com/cdcheadsup) that has 4655 likes (as of December 1, 2011). A typical post from the CDC is "Have you or someone you know suffered a TBI? SHARE your stories about

life after a TBI, challenges and successes. We applaud your passion, dedication and support for each other!" with 33 likes and 15 comments 48 hours after being posted. One of the subpages contains 11 eCards, with the caption "Send a CDC Health eCard on TBI and Concussion to your friends, family, and loved ones. Encourage them to prevent, recognize, and respond to head injuries." Other material includes eight podcasts and traditional print material to order or download.

Hospitals are another example of health organizations that use social media. In the United States, as of October 9, 2011, 1229 hospitals use social media, which includes 1068 Facebook pages, 814 Twitter accounts, 575 YouTube channels, 149 blogs, and 946 Four Square.[24] The hospitals using social media include some specializing in children, a prominent example being Children's Hospital Boston (http://childrenshospital.org/socialmedia), which uses their Web site and social media for education and support for children and their parents and caregivers. There is considerable discussion about the return on investment (ROI) of these efforts; for example, a hospital nurse who has taken on the role of social media manager at St. 265 Teresa Specialty Hospital in New Orleans knows of patients who learned about the hospital on Twitter.[25]

An August 2009 survey commissioned by the Red Cross found that more people turn to social media even before 911, showing its value for crisis communication.[26] Twitter was used for crisis communication when a water main break in Greater Boston made it necessary to reach residents to let them know not to drink tap water.[27] As mentioned earlier, social media was heavily used for communication during the earthquake in Japan.

SOCIAL MEDIA USE BY FARM FAMILIES

Social media is used by farm families to access news,[18] government services, and weather reports and for community activities, education, and entertainment. Few studies have examined the use of social media by farm organizations. Members of the Livestock Publication Council and the National Farm Broadcasters Association were surveyed employing a standardized method for e-mail surveys, i.e., Dillman Tailored Design Method, with a response rate of 30 percent from the 301 members sent surveys.[18] Results showed that 95% of respondents said their organization has a Web site.[18] Additionally, 37.1% have a blog, 40% provide updates on Twitter, 41.9% have a Facebook page, 41.6% produce podcasts, 20.9% post videos, and 11.8% have their own YouTube channel.[18]

Examples of farm-related uses of social media abound. For instance, many government agencies use social media to provide updates; @USDA (http://twitter.com/USDA) has 19 such Twitter accounts, including @USDAFSA (http://twitter.com/usdafsa) for the Farm Service Agency. To demonstrate the diversity of Twitter use to reach farmers and farm families, a sampling of engaging and interactive uses include the following: @AgLabor (http://twitter.com/AgLabor), which provides information for farm contractors; @HandToolSupply (http://twitter.com/HandToolSupply), which provides hand tools for farming and gardening; @OrganicsToday (http://twitter.com/OrganicsToday), a family-owned organic farm; @GrowOrganicCom (http://twitter.com/GrowOrganicCom), which provides organic seeds and tools; @TruffleMedia (http://twitter.com/TruffleMedia), with agricultural news; @katpinke (http://twitter.com/katpinke), a fifth-generation farmer writing about food and farming; @farmerhaley (http://twitter.com/farmerhaley), a fifth-generation family farmer raising grain and purebred Simmental cattle; @AgBlogFeed (http://twitter.com/AgBlogFeed), feed for agriculture blogs and Web sites; and @Cornfedcattle (http://twitter.com/Cornfedcattle), a young farmer in northeastern Nebraska who raises corn, soybeans, hay, and cattle.

One of the organizations taking a lead at organizing farmer use of social media is @agchatfound (http://twitter.com/agchatfound), a "farmer-led effort to empower a connected community of agvocates. We focus [on] equipping & educating ag tweeps to engage in

social media." @agchatfound runs a weekly 2-hour-long Twitter chat, #agchat (http://tweetchat.com/room/agchat), and is widely attended by active participants who share an interest in farming. Each week has different topics selected by the moderator or participants: one week the discussion was about rural crime, with discussion topics including instances of rural crime, and another week part of the discussion was on injury prevention, with many participants discussing injuries and fatalities in their families or neighbors. In both cases, participants provided tips and advice as well as peer support.

In addition to Twitter, other types of social media are used by farmers. Facebook has many pages for farmers, farms, and farm products; for example, Walker Farm, a Dummerston, Vermont family farm established in 1770, has a Facebook page (http://www.facebook.com/#!/walkerfarm?sk=info) with 1263 likes. They use the Facebook page to provide updates about their activities and crops, including what is available in their farm stand, and often use photographs. Walker Farm additionally has a more lightly used Twitter account, @WalkerFarm (http://twitter.com/WalkerFarm), following 4 and with 13 followers, a YouTube channel (http://www.youtube.com/user/WalkerFarmVermont?feature=mhum) with eight videos all uploaded on the same day, January 2, 2011, and a Web site. A very different type of farm organization with a Facebook page is Young Farmers and Ranchers, a committee of the California Farm Bureau Federation that organizes programs and activities especially for young adults between the ages of 18 and 35 (http://www.facebook.com/cayfr?ref=ts&sk=wall). Their Facebook page has 3564 likes. A discussion of Facebook and farms would not be complete with mention of FarmVille, a game from Zynga that is played on Facebook, with almost 34 million likes. Almost 30 million people use FarmVille every day (http://mashable.com/2010/02/20/farmville-80-million-users/).

In addition to Facebook, blogging popularity has spread to farms.[18] Rhoades and Hall[28] noted the prevalence of blogs covering agriculture topics and rural life. Two examples of farm blogs are The Wife of a Dairy Man (http://www.thewifeofadairyman.blogspot.com) and Cause Matters (http://www.causematters.com). This trend is likely to grow with the greater focus by food consumers and vendors on learning about and interacting with food producers.

An example of an organization that uses social media to reach farm families is 4H Clubs. 4H Clubs' Web site (http://www.4-h.org) provides a social media dashboard (http://www.4-h.org/get-involved/social-media) and they use Twitter (http://twitter.com/4H) and Facebook to get messages out and engage members and their families. Regional 4H clubs, such as @Noble4H (http://twitter.com/Noble4H) and @LancasterCo_4H (http://twitter.com/LancasterCo_4H), also use social media. In addition, 4H Clubs produced Social Media Guidelines (http://www.4-h.org/uploadedFiles/Social_Media/4-H%20SocialMediaBestPracticesGuide.pdf).

SOCIAL MEDIA USE FOR HEALTH AND SAFETY FOR FARM CHILDREN

An extensive search located some uses of social media for health and safety for farm children, most targeting adults (not specifically parents) and a few targeting the youths themselves. An organization making heavy use of social media is Farm Safety 4 Just Kids (http://www.fs4jk.org), a nonprofit organization, started by a woman whose son died from a grain engulfment, with more than 134 chapters located across the United States and Canada. It has an active presence on Facebook (http://www.facebook.com/#!/pages/Farm-Safety-4-Just-Kids/46908264524) and Twitter (http://twitter.com/fs4jk) as well as newsletters, audio interviews, and videos. Another organization using a Web site and social media for health and safety for children is Teen Health. Among other types of health information, Teen Health provides farm safety information targeting teens (http://kidshealth.org/teen/safety/safebasics/farm_safety.html#cat20019) and farm safety information for children (http://kidshealth.org/kid/watch/out/farm_safety.html#cat20019). It is run by Nemours (http://www.nemours.org/

about.html), an organization operating pediatric clinics and hospitals.

Although most of the social media uses described above target parents, with social media use pervasive in teens, more campaigns should target teens themselves. An eHealth literacy survey of students in grades 6 to 8 in a geographically isolated area of Michigan's Upper Peninsula found that interest in learning about health plays a stronger role than Internet access at home, parental supervision, and frequency and amount of Internet use.[29] To improve adolescents' health literacy, they concluded that it is important to cultivate adolescents' interest in searching for health information online and their use of the Internet for information and communication over entertainment. The survey found that health concerns were primarily related to sports, injuries likely to result from them, and ways to improve physical stamina.[29]

CONCLUSIONS

Traditional ways of disseminating health and safety information to adults and children are not sufficient: distribution channels are limited and materials are static. Based on the increase in use of the Internet and mobile devices, social media in general, social media by farm families and farm organizations, and social media for health and safety education, social media has the potential to mobilize knowledge to reach farm families to educate them about health and safety for children. With the more participatory nature of social media, it has the potential, furthermore, to change perceptions of social norms and therefore change people's attitudes. Social media, however, requires new skills: to create messages, to engage participants, to select the most appropriate social media technologies, and to keep up with the changes in their use. The most popular social media technologies, Facebook, Twitter, YouTube, and blogs, are currently being used by some farm families and farm organizations. For those who are already online and engaged with social media, it becomes part of how they seek information and form relationships with other individuals and organizations. With the range of quality of information available through social media, government agencies and the private sector have an opportunity, and a responsibility, to increase access to credible material. For those farm families and farm organizations not currently using social media, greater awareness of and incentives to use it may be necessary. This will lead to increased adoption, and thus provide even more opportunities to provide education that improves health and reduces injuries.

RECOMMENDATIONS: HOW SOCIAL MEDIA CAN BE USED TO PROMOTE HEALTH AND SAFETY FOR CHILDREN

Recommendations follow for how government agencies and the private sector can increase the effective use of social media to promote health and safety for children.

1. *Developing guidelines and training*: Create guidelines for the use of social media that specifically address how specific social media technologies can be used to promote health and safety in children. The guidelines should target farm constituencies, including government agencies, vendors of farm products, industries servicing or serviced by farmers, agricultural health and safety professionals, health care organizations and health care providers serving farm families, and farmers and their families, and address how different target audiences should best be reached. As an example, a Social Media Toolkit was produced by the CDC as a guideline for health organizations. Provide workshops and/or webinars to assist in initial use as well as opportunities for constituencies to share experiences and best practices. Refine guidelines based on trainings and update guidelines regularly to reflect changes in social media technologies.
2. *Conducting intervention research*: Although social media is most widely used to disseminate information, it should be considered as a complementary strategy to be used to support intervention research. Social media should be

integrated into the design, implementation and evaluation of current studies related to farm safety and children.

3. *Measuring effectiveness*: Encourage and provide support to constituencies who use social media to evaluate the impact of their social media use through the collection of metrics and the use of surveys, and provide guidelines for evaluation and analysis of social media use. Collect best practices to include in subsequent guidelines and training.
4. *Injecting health and safety messages into existing social media that reaches farm families*: Provide health and safety messages (tweets, weekly Twitter chat, Facebook updates, blog posts, and videos) that can be retweeted and shared by farm organizations and farmers and can spread virally. Use dedicated social media channels, including Twitter, a Facebook page, and a blog, to initiate and spread messages from. Specifically address messaging for adolescents who are the heaviest social media users.
5. *Creating a clearinghouse of social media partners*: Establish and maintain a list of organizations and individuals who use social media to reach farm families. This will provide a mechanism for crisis and urgent communication through social media channels.

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