Promotion of Injury Prevention Through the Use of Social Media by Ohio Emergency Medical Services

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Child Injury Prevention Alliance
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Introduction

Ohio has an extensive network of Emergency Medical Services (EMS) agencies/fire departments (FDs) with strong and credible ties to their local communities. While EMS plays a key role in providing information about injury prevention to the public, communication strategies have been rapidly changing with increasing adoption of the Internet as an information source. In addition, Social Media (SM) tools have become an influential means of sharing information. EMS/FDs must keep up with these changes in communication methods to remain relevant to the discussion of topics that they care about. Many EMS/FDs have websites, and some have begun to post videos and podcasts on these websites, but fewer have plunged into Facebook, blogs, microblogs (such as Twitter), Flickr, and other SM. The idea of using SM as a medium for communication with the community is still new to many EMS/FD personnel, including public information officers and other leaders. Many are uncertain about its relevance to their work. Others are interested but confused about where to begin. One thing is certain – SM is here to stay, and it offers tremendous opportunities for EMS to establish vital dialogues and reach new populations within the communities they serve.

Research leading to a better understanding of how to effectively communicate key educational messages that will prevent injuries is a public health priority for our state. The project model used in this study can not only be expanded in the future to other EMS/FDs nationally but can expand to include additional educational messages not included in this initial pilot project.

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Executive Summary

THE PROBLEM

Injuries are among the most compelling public health problems facing the state of Ohio. According to the Centers for Disease Control and Prevention, unintentional injuries are the leading cause of death for Ohioans ages 1-44 years and the fifth leading cause of death to Ohioans of all ages. The 2010 report, *Injury in Ohio*, found that approximately 6,700 Ohioans die from injuries and more than 1.5 million are treated in emergency departments for injuries each year. Despite these facts, public awareness of the injury problem in Ohio has not reached the mainstream levels of other public health problems, such as infectious disease and obesity.

PROJECT GOALS

The long-term goal of this project is to reduce deaths and disabilities due to injury in Ohio. This goal was addressed by increasing the state-of-the-art knowledge and skills of EMS/FD personnel throughout Ohio. By providing them with cutting-edge information, educational materials, strategies and support from nationally-recognized experts, EMS/FD personnel were able to take advantage of SM tools to effectively increase awareness of the injury problem in Ohio and promote evidence-based injury prevention messages through interactions with the communities they serve.

PROJECT DESCRIPTION AND METHODS

A series of discussions with EMS/FD staff, including a focus group, led to the decision to create a website for use by project participants. This project website provided participants with an online curriculum with lessons on specific SM topics, informational resources, sample SM posts, such as tweets and Facebook posts that can be shared via agency SM channels, and evidence-based injury prevention materials. The resources and lessons on the project website were designed to stand on their own; participants could choose to skip around to topics that were interesting or relevant to their own needs. This allowed participants to focus on aspects of SM and injury prevention that were important to them. The website will be maintained after the project period ends, which will promote the sustainability of the benefits of this project.

Because it is not feasible for every local EMS/FD across Ohio to have expertise across the multiple fields of injury science, public health, health education, and communications, the project developed pre-packaged, professional-quality educational materials to ensure accurate, practical, evidence-based messaging. EMS/FDs could personalize these materials with their own branding and contact information and make them available to their local communities through SM channels. These educational materials were shared on the project website and

included a wide range of injury and fire safety-related topics. In addition to receiving information from the project website, participants also received regular emails from the project coordinator containing new resources and information about current events related to SM, fire and injury topics.

To be eligible to participate in this project, participants had to be employed or volunteer at an Ohio fire/EMS agency. Participants could be at any level of SM experience, from beginner to expert. The project recruited 51 participants and compiled a network of almost 1,300 fire/EMS personnel. Data were collected from project participants via online pre- and post-project participation surveys, and Google Analytics metrics were used to analyze project website visits.

KEY FINDINGS

The majority of participants reported that their agency was already using some type of SM. Participants believed that it was their job to educate the community on health and safety topics, and that the community was open to receiving these messages through SM. Participants were less confident in the ability of their station/unit to offer effective education and noted that they would conduct more community education if they had a better understanding of how to use traditional and social media. The majority of participants believed that SM use would not only prevent injuries in their community but would help them connect with their community and be a way to showcase the work they were doing. Participants indicated that the biggest barrier to their station/unit using SM for injury prevention education was that SM sites could not be accessed at their station/unit. Importantly, all participants completing the exit survey stated that they had been able to use what they learned from the project in their current job. Their top 3 favorite things about the project were 1) it provided relevant information, 2) the information was located on a helpful website, and 3) it enabled them to bring SM to their station/unit.

Based on Google Analytics data, 222 unique visitors came to the project website during the project period. While there, they viewed an average of 7.5 pages per visit, staying for more than 12 minutes per visit on average. The bounce rate, which is the percentage of people who visit your site (either directly to the home page or to another linked page within the site) and leave without clicking on/visiting another page, was relatively low (31%). This underscores that when people visited the site, they tended to stay and interact with it. During the project period, more than 3,250 pages were viewed by participants.

CONCLUSIONS

Putting SM tools and information into the hands of fire/EMS is crucial to keep them connected with their communities and help them share injury prevention messages that can reduce injury-related morbidity and mortality. This project piloted a model that has the potential to be modified and expanded to other fire/EMS agencies in Ohio and nationally.

Investigators and Project Personnel

PRINCIPAL INVESTIGATOR GARY A. SMITH, MD, DrPH

Dr. Gary Smith is the President of the Child Injury Prevention Alliance and founder and Director of the Center for Injury Research and Policy at Nationwide Children's Hospital. He is also a Professor of Pediatrics of the Ohio State University College of Medicine with joint faculty appointments in the Division of Epidemiology, College of Public Health, and in the Department of Emergency Medicine. Dr. Smith is board certified in the specialties of pediatrics and general preventive medicine and public health, and in the subspecialty of pediatric emergency medicine. In addition to his clinical training, Dr. Smith holds Master of Public Health and Doctor of Public Health degrees from the Johns Hopkins Bloomberg School of Public Health.

PROJECT MANAGER JAMIE TAWES, MPH

Ms. Tawes completed the coursework for her PhD in Health Education from The University of Toledo in 2011 and is working on her dissertation. She earned her Master of Public Health degree (with a focus on health education and promotion) from the Northwest Ohio Consortium of Public Health in 2007 and her Bachelor of Science in Social Work from Bowling Green State University in 2004. She has a strong background in health research and curriculum development. Her professional interests include injury prevention, health behavior and theory, and social marketing/health communication.

PROJECT ADVISOR RICH PALMER

Rich Palmer, who is now Assistant Chief for Fire Prevention in the Division of State Fire Marshal, served as a member of the leadership team for this project, providing advice and direction for project interventions based on his years of experience.
In his former role as Public Information Officer (PIO) of the Washington Township Fire Department, he pioneered the use of SM among EMS/FDs in Ohio by helping the department launch one of the first FD websites and then expand into podcasts, blog posts, and Twitter. His input helped ensure that this project's assistance to EMS/FDs was relevant, practical and feasible. He understands the potential barriers and predictable concerns that are raised as an EMS/FD agency considers entering into the SM realm because he has experienced and successfully dealt with these issues himself. His guidance was invaluable to this project.

Literature Review

BACKGROUND

Injuries are a leading cause of death and disability in Ohio and in the United States. In 2010, unintentional injuries were the fifth leading cause of death for Ohioans of all ages and the leading cause of death for Ohioans ages 1-44 years (NCIPC, 2012). Unintentional fires/burns were among the top 10 most common causes of death for all ages. It is also important to note that most injuries do not result in death, but can have considerable long-term medical and economic consequences.

According to the *Injury in Ohio* report, fire-related injuries cost Ohioans more than $28.3 million in hospital charges each year. In addition, an average of 146 Ohioans die, 963 are admitted to the hospital and 16,376 are treated in hospital emergency departments each year as the result of fire-related injuries (CIRP, 2010).

EMS and fire agencies play a key role in providing information to the public about how to prevent these injuries in their communities. A 2007 national survey by Johns Hopkins University found that 86% of U.S. EMS/FDs conducted fire and life safety education, with > 70% of these educational activities focusing on fire prevention, smoke alarms, and fire escape planning. However, the average satisfaction rating for the education in their fire department was only 52 on a scale of 0-100 with lack of adequate resources identified as the limiting factor for improvement (JHU, 2007).

As people turn to the Internet and SM with increasing frequency for this safety information, it becomes more important to ensure that accurate, evidence-based injury prevention information is available through these outlets. The most recent numbers from the Pew Internet Project (Pew, 2013) show that 85% of U.S. adults use the Internet and 72% of these Internet users say they have looked online for health information. SM represents an evolution in the use of electronic communications media and offers a new arrow in the quiver of EMS/FDs for communicating educational messages. Not only does it allow individuals and organizations a way to communicate with larger and demographically different user communities than traditional media, but it opens the door for conversations to occur among participants. In the past, much of the information was “pushed” to the community without much chance for discussion and feedback. SM opens the lines of communication using a broad range of online tools, such as social networking sites, podcasts, video sharing, photo sharing, blogs, microblogs, opinion sites, wikis, Really Simple Syndication (RSS), and virtual realities.

To understand how these SM tools can help EMS/Fire agencies share injury prevention messages, it helps to understand what each tool is and what it can offer. The following is a brief description of popular SM tools that are relevant to this project.

AUDIO AND VIDEO SHARING

A podcast/vodcast is a digital audio or video file that can be downloaded from a website or through a RSS channel. Once a person subscribes to a RSS feed, audio podcast or video podcast (vodcast), files will be automatically distributed to the subscriber when they become available for play back on a computer or mobile device, such as an iPod or cell phone. Podcasts have become popular in recent years because they are cheap and simple to produce, are easy to download for listeners, and can be conveniently listened to anytime and anywhere on transportable MP3 player devices. The content, length, and quality of recording differ drastically and can range from a personal blog-like recording to a national news release. Podcasting

may appeal to more people and different demographics than traditional media releases. It also has the ability to develop a consistent following if listeners subscribe via a RSS channel. Audio takes advantage of those with verbal charisma, has the ability to invoke emotion and passion, and can "carry warmth of the human voice". Vodcasts add video to the audio and thus may take more effort to produce. However, use of portable, hand-held cameras can capture a powerful authenticity with on-the-spot interviews with relatively little effort. Studies show that the best memory retention occurs when seeing, hearing, and experiencing are combined (retention of 75% for an average person). Thus, podcasting and vodcasting can provide simple alternative ways to share information with wide audiences.

Sharing (or hosting) websites are locations where individuals can upload their audio and video files for distribution to others, generally for free. After users upload their clips, the host stores the files on its server so that others can access them. Although iTunes and YouTube are the most successful audio and video sharing websites, there are other lesser-known alternatives available as well.

YouTube

YouTube is a free video-sharing website that allows users to upload and share videos with millions of viewers. Over 6 billion hours of video are watched each month on YouTube. A user account is not required to view a YouTube video; however, if you wish to post a video, login is necessary. Once a user is registered, a personal (or company) channel is established. The channel serves as a user interface that provides organization based on personal preferences, feedback on the number of hits/views, the kinds of viewers watching the videos, and channel or video comments that viewers leave. Strengths of YouTube include the cost (free to upload and free to watch videos), its broad exposure (videos potentially can be seen by people all around the world), the viral effect (videos are often shared by viewers, so video popularity can increase with minimal effort), the channels (by customizing a channel and gaining subscribers, an audience base can be established), storage (storing your videos on YouTube's site saves bandwidth on your website) and Google's ownership of YouTube (YouTube videos rank high in Google's search engine result pages; YouTube is also the second most common search engine on the web meaning that many users go straight to YouTube to search for content).

SOCIAL NETWORKING

Social networking provides a forum for communication, exchange, and shared interests. Allowing people to communicate in unprecedented ways for both professional and personal needs, social networking establishes a sense of commonality and interconnectedness. Social networking is not a fad of the younger generation; it is pervasive across all demographics and continues to grow rapidly. Common to all social networking sites is the ability to construct a personal profile, network with others using the site, and interact and share information with these users. Although originally intended for individual and personal use, social networking has evolved to include businesses and organizations. This allows companies to more broadly market and connect with their customers, while also providing individuals with access to more information and product and service critiques. Facebook and Twitter are the social networking sites most relevant to this project, although LinkedIn (a business-oriented networking site that promotes connections between professionals) and Pinterest also have millions of users.

Facebook

Facebook is no longer simply a communication forum for college students; it is fertile ground for social marketing and corporate outreach. Facebook has almost 1.15 billion users globally. There are many creative uses of Facebook, but for professional use, the best option is a "fan" page. A fan page is used for establishing a public profile and sharing products and information with users. There are several advantages to establishing a fan page for an organization. By setting a Facebook status, writing wall

updates or linking to relevant stories, the page not only reaches its fans but also friends of its fans via newsfeed updates. Other advantages include that it is free, it encourages interaction and reinforces credibility with followers, allows targeting of certain niche or demographic groups more directly (via Facebook groups), allows outreach to untapped groups and broader geographic regions, and allows joining relevant conversations and receiving feedback from fans.

Twitter

Twitter is social networking website that is utilized by companies, organizations, and individuals. It is a micro-blogging service (so that text-based posts of up to 140 characters can be displayed) that allows users to send and read messages known as "tweets". These tweets appear on the author's profile page as well as the home pages of the author's subscribers (followers). There are different ways that organizations can effectively establish their presence on Twitter. Some organizations and companies use Twitter directly by posting corporate accomplishments, links to their websites, press releases, and other promotions. Although Twitter is an easy way to get started, organizations need to be aware that using Twitter for self-serving promotional needs can damage their "Twitter reputation". Due to the nature of the tool, a Twitter account would need to be updated daily or perhaps even multiple times each day, depending on the size of the following. Some organizations are not actively participating in Twitter but instead are acting as Twitter "listeners." Using search tools like search.twitter.com, Topsy, or desktop applications like TweetDeck or Hootsuite are easy ways to keep track of what's being said about your group, positive/negative feedback, or what similar organizations are doing. By monitoring these Twitter conversations, organizations can be alerted early to potential problems or issues and obtain feedback on their activities or ideas, and thus will be able to respond more appropriately and promptly. Twitter allows for a dialogue, which is different from Nixle, which is a community information service that EMS/FDs participate in nationally. Nixle allows individuals to register for receipt of customizable, real-time, geographically-focused, community safety alerts and other information via text message and email, including from EMS/FDs.

PHOTO SHARING

Using websites and applications, individuals and organizations can upload and share their digital photos online with others privately or publicly. Photo sharing sites usually group photos in galleries with directories based on a taxonomy or allow users to develop their own folksonomy to organize their images.

Flickr

Flickr is the most popular photo sharing site. As an image and video hosting website, Flickr has become a popular website for users to share personal photographs and is also widely used by bloggers as a photo repository. Photobucket, Snapfish, Shutterfly, and other photo sharing sites function in a similar manner. The advantages of using Flickr include that the basic account is free (although video access is only for paying members), many websites support it (which allows for broad exposure), photos do not have to be shared publicly (a privacy setting can restrict access to certain users), there is some site monitoring (so questionable material is removed), and Flickr uses Creative Commons licensing (so there is no concern of copyright infringement issues; however, this also means that anyone who has access to the photos you post can use them). There is a 1 terabyte limit to the amount of content that can be uploaded.

SOCIAL BOOKMARKING

Social bookmarking allows Web users to save and organize links to web pages of interest using tags (metadata). A user's bookmarks are most often public, but they can also be saved privately or selectively shared. If they are shared, the other users can usually view these bookmarks via a search engine or by category (tag) or date. Many social bookmarking sites provide lists of bookmarks arranged by category (tag). Subscribers to these sites can then view new bookmarks as they are saved, tagged, and shared by other users. Advantages

of social bookmarking include increasing the visibility of an organization's webpage through increased user traffic as people list the webpage as a "favorite" and share this within their friends circle. Also, visitors who mark a webpage as a "favorite" are more likely to revisit the webpage again. Widgets that allow users to bookmark a webpage are easy to add to a webpage and do not require any maintenance. Some of the top social bookmarking sites include Reddit, Dig, Delicious and Tumblr.

Pinterest

Pinterest is a hybrid of a photo sharing and a social bookmarking site. Users can "pin" images and other media content (videos, etc) onto boards that they create and manage based on themes such as events, hobbies, and interests. The images can be "pinned" directly from the Internet or by browsing other people's boards and "re-pinning" their content. In essence, it is an image bookmarking site. Pinterest has seen rapid growth since its launch in 2010. It broke the 10 million unique visitors mark faster than any site in history and now has over 70 million users.

MISCELLANEOUS SOCIAL MEDIA TOOLS

Wikipedia

Wikipedia is a free encyclopedia containing millions of articles that can be written and edited by anyone. Wikipedia is the most popular general reference website in the world and consistently appears as the top result in Google searches. Therefore, it is often the first place people search to find a quick fact, learn about an unfamiliar subject, or conduct preliminary research. Although the level of collaboration and amount of content that has been generated have allowed Wikipedia to flourish, the uncertain validity of the content is an obvious shortcoming. Anyone can edit Wikipedia, and although the "Wikipedia police" monitor content changes and require citations, the accuracy of the site is not assured. Despite this, millions of people still continue to get their information from Wikipedia, and therefore, it is necessary for an organization to strongly consider their presence on Wikipedia.

Blogs

A blog is a website that is maintained and regularly updated by an individual or an organization. The function of a blog can vary; some provide commentary or news on a particular subject, some are more akin to online diaries, while others include graphics, sound, or video (vlogs). One of the important characteristics of a blog is that it is interactive and allows readers to comment on a previous post. Once created, blogs require continuous attention and updating, which is a large time commitment for many organizations.

TRADITIONAL MEDIA

As EMS/FDs adopt the use of SM, they should not drop the use of traditional media, such as mass media (television, newspapers, magazines, radio, wire services, etc) or interpersonal media (e-mail, e-newsletters, e-postcards, text messaging, etc). All these forms of communication complement and reinforce each other.

Historical Perspectives

Several EMS/FDs were early adopters of the use of SM. One well known example is the Los Angeles Fire Department (LAFD). Guided by its PIO, Brian Humphrey, the LAFD has received national acclaim for its highly effective use of online tools, such as Twitter and blogs, to interact with the community. It uses these tools to monitor events in real-time, allowing early identification of and response to emergency situations. It can communicate status reports and instructions during emergencies to citizens, so that they, as Mr. Humphrey points out, "don't have to wait until the top of the hour" to obtain vital information. LAFD uses these SM tools for important public education as well as for public relations, for example, by responding in a timely and sensitive manner to a negative comment about the department in a blog posting. The LAFD launched an official Twitter account in 2007 and has been a leader in utilizing a variety of SM tools.

Closer to home, the Washington Township Fire Department in Dayton, under the direction of its former PIO, Richard Palmer, pioneered the use of SM among EMS/FDs in Ohio starting in 2005. The department also launched one of the first known FD websites in 1995. Over time, blog updates were added, RSS feeds were developed, and in 2005, the department launched a series of podcasts known as "Home Safe 411" and "The Safety Beat", both produced by Richard Palmer. The department first started using Twitter in February 2008. This was initiated by Mr. Palmer, who had been one of the early adopters of Twitter in October 2006. Mr. Palmer currently has a personal Twitter account (@RichPalmer) and a fire education-specific account (@WTfire) with a combined Twitter following of over 2,500.

Washington Township Fire Department also uses cross-posting services, such as Posterous and Tumblr, to share information. These services post directly into Twitter, the FD Facebook page, and YouTube. The department maintains a blog and also shares video, audio and text messages as appropriate depending on the topic and communications goal. The department also uses Nixle to share information with subscribers via their email accounts, on-line, and text messaging to their mobile phones. Nixle is designed to help public safety organizations and local governments communicate more easily with their community members.

Current Status in Ohio

The current status of SM use among fire and EMS agencies in Ohio shows that adoption of SM tools is clearly increasing. An April 2013 search of Ohio fire and EMS agencies active on Facebook found 275 fire and fire/EMS agencies, 68 firefighter unions, 12 EMS agencies, and 47 other fire-related Facebook pages (such as the Ohio Fire Academy, fire investigators, auxiliaries, and clubs). This number is considerably higher than our original search of Ohio fire and EMS agencies in early 2012, which found fewer than 100 Ohio-based agencies on Facebook. This increase of Ohio-based fire and EMS agencies that use SM indicates that SM use is becoming more acceptable in this field. This also suggests that there is a desire to learn more effective ways to use SM and obtain quality information and educational materials to share with SM followers.

Several FDs in Ohio serve as examples of how Facebook can be used in beneficial ways for both an agency and community. The Cincinnati Fire Department's Facebook page has more than 3,000 followers and regularly posts information on community safety events, emergency preparedness, and other fire-related topics. Willoughby Fire Department, Madison Fire District, and OR & W Fire District all have greater than 1,000 followers on their Facebook pages, which is proof that even smaller towns and cities can benefit from using Facebook to interact with their communities.

Despite these examples of successful use of SM by Ohio EMS/FDs, there is still work to be done to convince many EMS/FD professionals that SM use is more than just a way to look up a former classmate or find out what friends and family are doing this weekend. The current project provided support to agencies that were using SM as well as information to others who needed help to convince skeptical EMS/FD leadership that SM use is an appropriate and useful investment of time.

Many of the current EMS/FD websites are basic in design without links to SM tools. With little effort, these websites can be upgraded and departments can begin to share podcasts and other educational materials and messages (provided free by this project to EMS/FDs for their personalization and use) via SM forums. EMS/FDs can establish a presence on Facebook, YouTube, and Flickr and enhance their interaction with local communities via blogs and microblogging (e.g., Twitter). Once an EMS/FD has Internet connectivity, the additional resources needed are not onerous. This project provided state-of-the-art, evidence-based injury prevention educational materials and messages, a "how-to" curriculum, and support to units/departments to allow them to enter into the SM realm with relative ease.

Regional and National Trends

SM use will increase as people become more comfortable with SM and new SM leaders in fire/EMS emerge. In addition to providing a useful tool for injury prevention, education and outreach, SM has proven to be a quick and easy way to share information in emergency situations. Unfortunately, we are seeing more examples of these situations around the world. One such example was the Boston Marathon bombing that occurred on April 15, 2013. Within minutes of the bombing, information started spreading on SM, and within hours the local fire, police and Red Cross were using SM to spread information quickly to a large population about this event. For many people near the site, phone lines were down and access to SM channels provided the only form of communication. Use of SM as a communications tool in such emergency events is likely to become more common nationally and globally. For examples of SM posts that were shared nationally related to the Boston Marathon bombing, see the PowerPoint presentation here.

Education and Training Considerations

There were two primary issues related to education and training that required consideration during this project. The first was the method of delivery. It was essential that the training be provided in a format that was easy to access and use given the often unusual schedules of fire/EMS agency personnel. The second issue was that people would come to this project with a wide spectrum of background knowledge and skills in SM. The project needed to address both of these concerns in order to succeed.

A series of discussions with fire/EMS personnel, including a focus group, led to the decision to create a website tailored for project participants. This website served as the information hub for this project. Content and design experts worked together with fire/EMS advisors in the development of the features and content of the site. The website served as a venue for participants to receive complete educational lessons and information, review resources, obtain sample SM posts such as tweets and Facebook posts, and find evidence-based injury prevention materials created by experts.

The benefits of having all of this information housed on a website are numerous. The freedom of a website that can be accessed anywhere, including on mobile devices, allows participants to complete lessons and read materials as their schedules allow. This flexibility was found to be an important factor during discussions with fire/EMS personnel because their schedules are often unpredictable. Furthermore, many fire/EMS agencies either do not have Internet access or do not allow staff to access SM channels while at work. Participants could choose to visit the project website at home, on their phone or tablet, or at a local wireless hotspot if they did not have Internet or SM access at their station. Moreover, using a website avoided the costs of paper and printing. Housing the content on a website rather than a SM site also avoided the barriers that could arise if potential participants were not already using that SM tool.

To address the second issue, the project was designed to attract agencies covering the entire spectrum of SM use, including those that were already using SM for community education as well as agencies who had never attempted SM use. The lessons of the SM curriculum developed for the project were written to provide both fundamental information for those that are new to SM and more complex resources for agencies that are already utilizing SM and are ready to move on to more advanced skill-building. For example, Lesson 5 is about SM metrics, evaluation, and analysis. Beginners can feel comfortable learning about simple metrics, such as tracking followers, likes, and hits to determine their SM reach. More experienced users can focus on learning how to use advanced tools such as Google Analytics or Klout scores. Users can decide if they want to focus on one particular SM channel or learn about several different types of SM. Participants can also take the lessons in order or choose to skip around to topics that are interesting or relevant to their own needs. This allows participants to focus on aspects of SM and injury prevention that are important to them.

Because it is not feasible for every local EMS/FD in Ohio to have expertise across the multiple fields of injury science, public health, health education, and communications, this project developed pre-packaged, professional-quality educational materials to ensure accurate, practical, evidence-based messaging. EMS/FDs can personalize these materials with their own branding and contact information and make them available to their local communities through SM channels. These educational materials are shared on the project website and include a wide range of injury and fire safety-related topics.

With its knowledge of injury science, CIPA developed the content of these injury prevention materials with input from project team members, including health educators and injury research scientists. Injury prevention messages and recommendations are consistent with those of the Centers for Disease Control and Prevention, National Highway Traffic Safety Administration, American Academy of Pediatrics, Ohio Department of Public Safety, Ohio Department of Health, United States Fire Administration and other national and state authorities on these topics.

Data and Information Considerations

RECRUITMENT

To be eligible to participate in this project, participants had to be employed or volunteer at an Ohio fire/EMS agency. Participants could be at any level of SM experience, from beginner to expert. Recruiting materials were developed based on input from the project advisor and focus group participants. These materials included messaging to let potential participants know that there was no cost to participate and that the curriculum was self-paced and therefore could be completed on their own timeline.

Recruitment methods included:

- Announcements posted on CIPA's website, Twitter, and Facebook page describing the project and benefits to participants.
- Rich Palmer (@RichPalmer), an Assistant Chief and Fire Safety Educator Supervisor at the Ohio Division of State Fire Marshal, retweeted CIPA's project recruitment-themed tweets to his audience of ~2000 followers.
- CIPA staff gave a presentation on the project at the Fire Educator's Seminar at the State Fire Marshal's Office on April 27, 2012 and allowed interested parties to sign up during the seminar.
- In-person visits were made to stations around the Central Ohio area.
- Networking at community events where fire/EMS personnel attended, such as:
    - Fireworks Press Conference at the State Fire Marshal's Office on June 27, 2012
    - Farm Safety Day Camp in Ross County, Ohio on July 31, 2012
    - Project CODE Press Conference, Fire Station #10, Franklinton, Ohio on October 22, 2012.
- Ohio Fire/EMS agencies that were found to have SM accounts were contacted about the project (via Twitter and Facebook) to see if they would like to participate or if they knew of other agencies that would benefit from the project.
- Websites/groups that serve Ohio EMS/FDs were contacted and asked to share project information, including the Ohio Association of Professional Fire Fighters (Facebook page and website), Ohio Fire Department Network (Facebook page), Ohio Fire Corps (monthly newsletter), Ohio Firefighters (website), Ohio State Firefighters Association (website/publication), and the Ohio Fire Chiefs' Association (website/publication).
- A statewide mailing disseminated information to more than 1,200 fire/EMS agencies (list obtained from the Division of Ohio State Fire Marshal). The mailing included a project informational flyer, including project staff contact information.
- The PIO Office in Columbus was contacted to share project information.
- Flyers were posted on bulletin boards and distributed in classes held at the State Fire Marshal headquarters.

REFLECTION ON RECRUITMENT

After all of the recruitment efforts described above, the project recruited 51 participants and compiled a network of almost 1,300 fire/EMS personnel. Throughout the recruitment process, project staff worked with key fire/EMS professionals to increase the number of participants. One project limitation is that the majority of project participants were already using or interested in SM. It was very difficult to convince agencies that were not already using SM to participate. The project had hoped to enroll a wide cross-section of SM experience levels, including novices

and non-users, but this proved more challenging than originally anticipated.

In our discussions with fire/EMS personnel during the development of and recruitment for this project, several issues commonly arose that limited participation in the project. First, many fire/EMS agencies are short-staffed and have personnel with multiple duties, who have little time to dedicate to additional responsibilities. In most of these cases, SM was considered to be an "additional responsibility." While some agencies have a PIO or communications person on staff, this is not true for every agency, especially smaller volunteer stations. Adding another staff responsibility, such as learning and managing SM, was often deemed to be infeasible. This was particularly true when the station either did not have access to the Internet or blocked access to SM sites, because use of SM channels would require personnel to do the work from home or off-site.

Other fire/EMS professionals expressed concern about the type of information they could share via SM to avoid revealing personal or protected information. Concerns related to HIPAA violations were often related to sharing photos or discussing details of motor vehicle crash scenes. This concern of unknowingly releasing sensitive information to the public seemed to be shared by EMS staff and their managers alike. Some individuals indicated that it would be incredibly difficult to have an organizational SM site because of the multi-layered and time-consuming process they would need to go through to get approval for "every post/response." This would conflict with the immediacy required to appropriately interact through SM.

Finally, some fire/EMS personnel expressed concern about the possible implications of a post on the agency's SM page by a community member that was negative or less-than-favorable about the agency. This fear of revealing negative comments about their agency prevented some individuals from even considering SM use. Although lessons in the project online curriculum specifically address these concerns (e.g., Lesson 2: Creating a Social Media Plan, and Lesson 6: Managing a Social Media Crisis), agencies with these fears unfortunately may not have signed up for the project in the first place, therefore precluding the opportunity to allay their concerns.

Despite having helpful project resources in one easily-accessible, convenient, and cost-free format, reactions from fire/EMS professionals to the concept of the project were mixed. Most of the professionals we contacted agreed that SM could be extremely valuable to their agency. Many already used SM in their personal lives. However, most were reluctant to propose that their agency use SM and were uncertain about who would manage it. They believed that their chief or PIO were the ones who needed to make the decision to incorporate SM use into the agency's communications tool box. Some thought that their leader would not appreciate the benefits of SM use and did not want to be the one to rock the boat by proposing it. Although information was provided by the project that would help participants articulate the advantages afforded by SM and why their agency should use SM (found here), fire/EMS personnel were more hesitant to propose SM use to their superiors than we anticipated. In hindsight, a better approach may have been to emphasize that fire/EMS personnel could participate in the project without actually establishing a SM account(s) for their agency. Simply learning the skills and making preparations in case SM use would be allowed in their agency in the future would have been beneficial. However, fire/EMS professionals who worked with leaders who were opposed to agency SM use might have been hesitant to be involved at all in the project. This was a limitation of working with fire/EMS personnel who were not the decision-makers regarding SM use by their agency.

PROJECT WEBSITE

Despite the unexpected recruiting challenges, we were able to enroll an enthusiastic group of participants. Participants first completed a pretest so we could determine their existing SM use (professional and personal), attitudes/knowledge/beliefs regarding professional SM use, and benefits of/ barriers to SM use in their agencies. Once this pretest was complete,

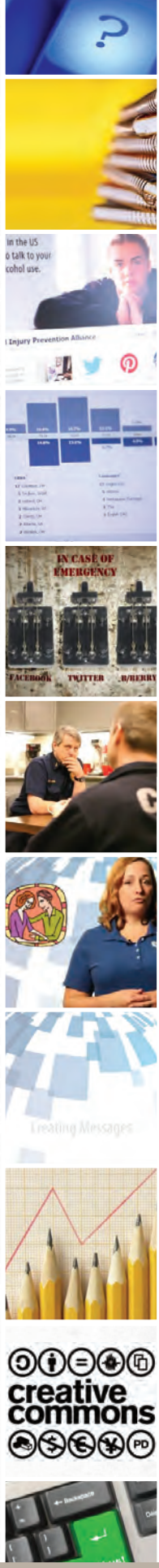
participants were given access to the project website. The project website was not open to the public during the study period to ensure that all tracked views could be attributed to project participants. The website is now accessible to anyone (found here) and was built by project staff using Google Sites. Google Analytics was utilized to provide metrics and tracking information on site usage and viewing behaviors.

The website includes eight project lessons designed to teach fire/EMS professionals about SM basics and how to use SM effectively to educate their communities on injury prevention topics. Each lesson includes relevant videos, linked articles and publications, additional resources, and learning checks (quizzes) on the following topics:

- Project Intro video
- Lesson 1: What is social media?
  - Lesson 1 video
- Lesson 2: Creating a social media plan
  - Lesson 2 video
- Lesson 3: Choosing a social media channel
  - Lesson 3 video
- Lesson 4: Creating messages for social media
  - Lesson 4 video
- Lesson 5: Evaluating your social media program
  - Lesson 5 video
- Lesson 6: Managing social media crises
  - Lesson 6 video
- Lesson 7: Using Creative Commons materials
  - Lesson 7 video
- Lesson 8: Storytelling
  - Lesson 8 video

In addition to the lessons, the website also includes the following sections:

- SM resources specific to fire/EMS, including examples of fire agencies nationwide that have been successfully using SM to educate and stay involved in their communities
- Information on how to sign up and use popular SM channels:
  - Blogs
  - Facebook
  - Google+
  - Pinterest
  - Twitter
  - YouTube
  - Choosing a Social Media Channel
- Infographics on various injury and SM topics, including information on how to create an infographic
- Information on how to get support for SM use in your agency
- Sample SM posts available for participants to share with their audience:
  - Sample Facebook Posts
  - Sample Twitter Tweets
- Videos of fire/EMS "success stories":
  - Lawrence County Smoke Alarm Project
  - Rome Volunteer Fire Department Social Media Use
  - The Role of Firefighters in Community Education
  - The Role of Firefighters in Teaching Smoke Alarm Response
  - Fire Prevention First Hand-- Lt. Castle
- Resources on injury and fire-related injuries created by project staff, including:
  - Videos related to injury prevention topics:
    - Children and fire
    - Fire extinguishers
    - Fireworks safety
    - Kitchen fire safety
    - Kitchen utility safety
    - Microwave oven safety
    - Putting kitchen fires out
    - Smoke alarm awareness
    - What does poisoning prevention look like



- Fact sheets on injury prevention topics:
  - Bicycle safety
  - Burns and scalds
  - Children playing with fire
  - College fire safety
  - Cooking safety
  - Fire escape plans
  - Fire safety for children
  - Fireworks safety
  - Holiday safety
  - Home fire safety
  - Poison prevention
  - Prescription drug-related poisonings
  - Pool safety
  - Smoke alarms
  - Types of smoke alarms

In addition to receiving information from the project website, participants also received regular emails from the project coordinator containing new resources, current events related to SM, fire and injury topics, and opportunities to provide feedback to improve the project website and its function.

Research Findings

This section features data collected from project participants via online pre- and post-project participation surveys as well as Google Analytics metrics used to analyze project website visits.

PARTICIPANT SIGN-UP QUESTIONNAIRE/PRETEST

As part of the sign-up process, participants were asked several questions to assess their current SM usage. The majority of participants reported that their agency was already using some type of SM (Figure 1).

Figure 1 Does your fire/EMS agency currently use any type of social media?

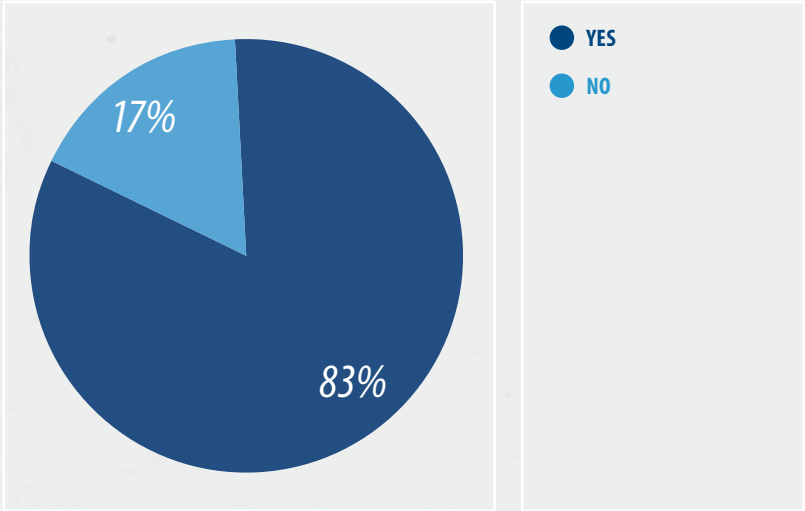


Table 1 Participants' Attitudes, Perceptions, and Beliefs about Social Media Use and Their Agency

	Agree	Disagree	Unsure	Total
Social media such as Facebook and Twitter are helpful tools to educate our community on safety and injury issues.	100%	0%	0%	100%
It is the responsibility of fire stations and EMS units to educate the community on safety and injury.	93%	0%	7%	100%
I feel confident in the ability of our station/unit to educate the community on safety and injury issues.	86%	0%	14%	100%
Our station/unit does an effective job of educating the community on safety and injury issues.	31%	38%	31%	100%
If our station/unit had a better understanding of how to use social and traditional media to do community education, we would do more community education.	93%	7%	0%	100%
Our community would be open to receiving educational messages from our station/unit on safety and injury issues using social media.	100%	0%	0%	100%

Numbers are rounded.

Participants agreed that it was their job to educate the community on health and safety topics, and that the community would be open to receiving these messages through SM (Table 1). Participants were less confident in the ability of their station/unit to offer effective education and noted that they would conduct more community education if they had a better understanding of how to use traditional and social media.

Participants were also asked about the perceived benefits and barriers to their station/unit using SM for injury prevention education (Table 2). Given that these questions were asked of people who had already signed up to participate in the project, it is not surprising that few barriers were reported. It was our experience that if fire/EMS personnel perceived that there would be barriers to SM use, they did not sign up to participate in the project. The biggest barrier for this group was that SM sites could not be accessed at their station/unit, which agrees with comments we heard from our project advisor, network, and focus group participants. Some comments from our participants on barriers included:

> *"[Not being] computer savvy"*
>
> *"Many of the relevant sites are still blocked by my employer requiring me to do a lot of work at home or coffee shops."*

Table 2 Perceived Barriers and Benefits to Using Social Media for Injury Prevention Education

	% Selected
BARRIERS	
There are no barriers to my agency using social media for community education purposes.	80%
Social media sites such as Facebook are blocked/not accessible in our agency.	13%
Our fire chief/leader is opposed to the use of social media in our agency.	7%
In our agency, there is no interest in using social media to do community education.	0%
We do not have time to keep up with social media.	0%
It is not our responsibility to do community education on safety and injury issues	0%
BENEFITS	
There are no benefits to my agency using social media for community education.	0%
Using social media to educate our community can help reduce injuries.	93%
Using social media will help our agency to connect to our community.	93%
Using social media to educate our community can help to show the work that our agency does in the community.	86%
Using social media will allow us to keep up with local injury and safety trends and issues.	71%
Using social media will allow us to access younger generations of community members.	71%

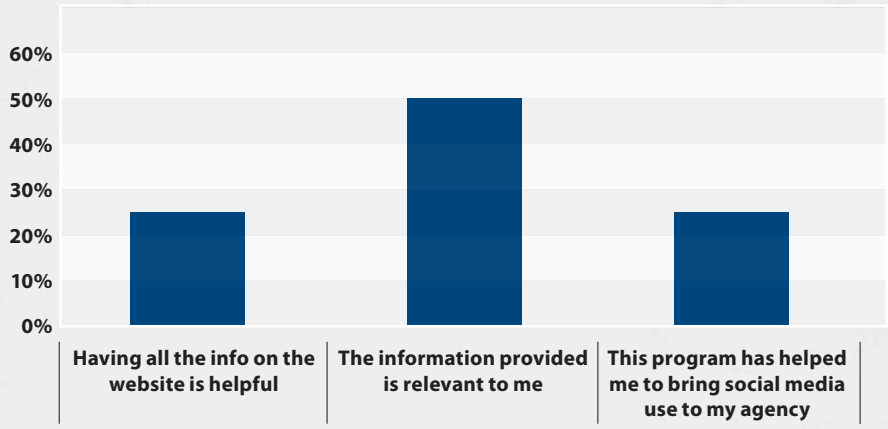
Numbers are rounded.

In terms of benefits, the majority of participants felt that SM use would not only prevent injuries in their community, but would help them connect with their community and be a way to showcase the work they were doing (Table 2).

EXIT SURVEY

Upon completion of the project, participants were asked to complete a brief exit survey. Importantly, all participants completing this exit survey indicated that they had been able to use what they learned from the project in their current job. Their top 3 favorite things about the project were 1) it provided relevant information, 2) the information was located on a helpful website, and 3) it enabled them to bring SM to their station/unit (Figure 2, next page).

Figure 2 Top 3 Favorite Things about the Program



They indicated they would use the project website even more if:

> *"Information was easier to reproduce onto our website and Facebook pages."*
>
> *"If I had more time."*

Based on the feedback from the surveys and phone calls with the participants, the project website was modified in April 2013 to streamline the information, make it more user-friendly, and make the information easier to find – especially if it was being viewed on a mobile phone.

PROJECT WEBSITE ACTIVITY ANALYSIS

In addition to analyzing participants' answers to the exit survey, Google Analytics was used to examine how participants really used the website (Table 3). During the project period, 222 unique visitors came to the site. While there, they viewed an average of 7.5 pages per visit, staying for more than 12 minutes per visit on average. The bounce rate, which is the percentage of people who visit your site (either directly to the home page or to another linked page within the site) and leave without clicking on/visiting another page, was relatively low (31%). The average bounce rate for most websites is between 40 – 60%. This underscores that when people visited the site, they tended to stay and interact with it. During the project period, more than 3,250 pages were viewed by participants.

Table 3 Summary of Project Website Activity

METRIC	NUMBER
Pages per visit	7.47
Unique Visitors	222
Average Visit Duration	12:23 minutes
Page Views	3,256
Bounce Rate	31.42%

Time Period: June 1, 2012 - May 31, 2013

LOCATION OF PROJECT WEBSITE VISITORS

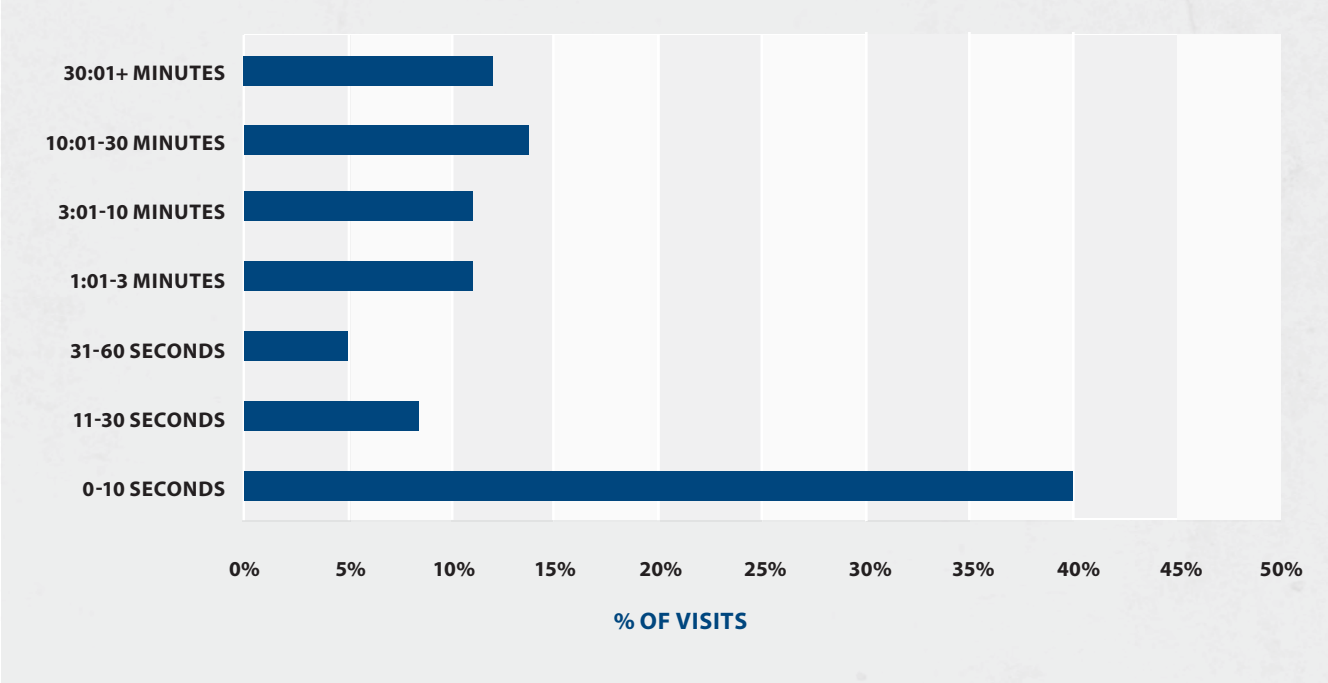
The most common geographic location of visitors to the project website was Columbus (Table 4). However, this information is drawn from the IP address of the user, which may not be the same location where the fire/EMS professional is employed. Since some stations have SM blocked, or are without Internet access entirely, some of the Columbus visitors could have been in a location away from their fire/EMS station when they were viewing the site.

Table 4 Location of Project Website Visitors*

	Unique Visitors	Pages per Visit	Avg. Visit Duration
Columbus	185	8.98	00:15:29
New Albany	10	2.90	00:02:05
West Chester	7	4.14	00:01:36
Circleville	6	2.67	00:01:36
Springboro	5	2.40	00:05:20
Washington Court House	3	2.00	00:00:45
Loudenville	2	5.00	00:21:59
Pataskala	2	2.50	00:02:39
Englewood	1	3.00	00:34:25
Galloway	1	9.00	00:04:21

*Since the end of the project, there have been more than 150 new unique visitors to the site.

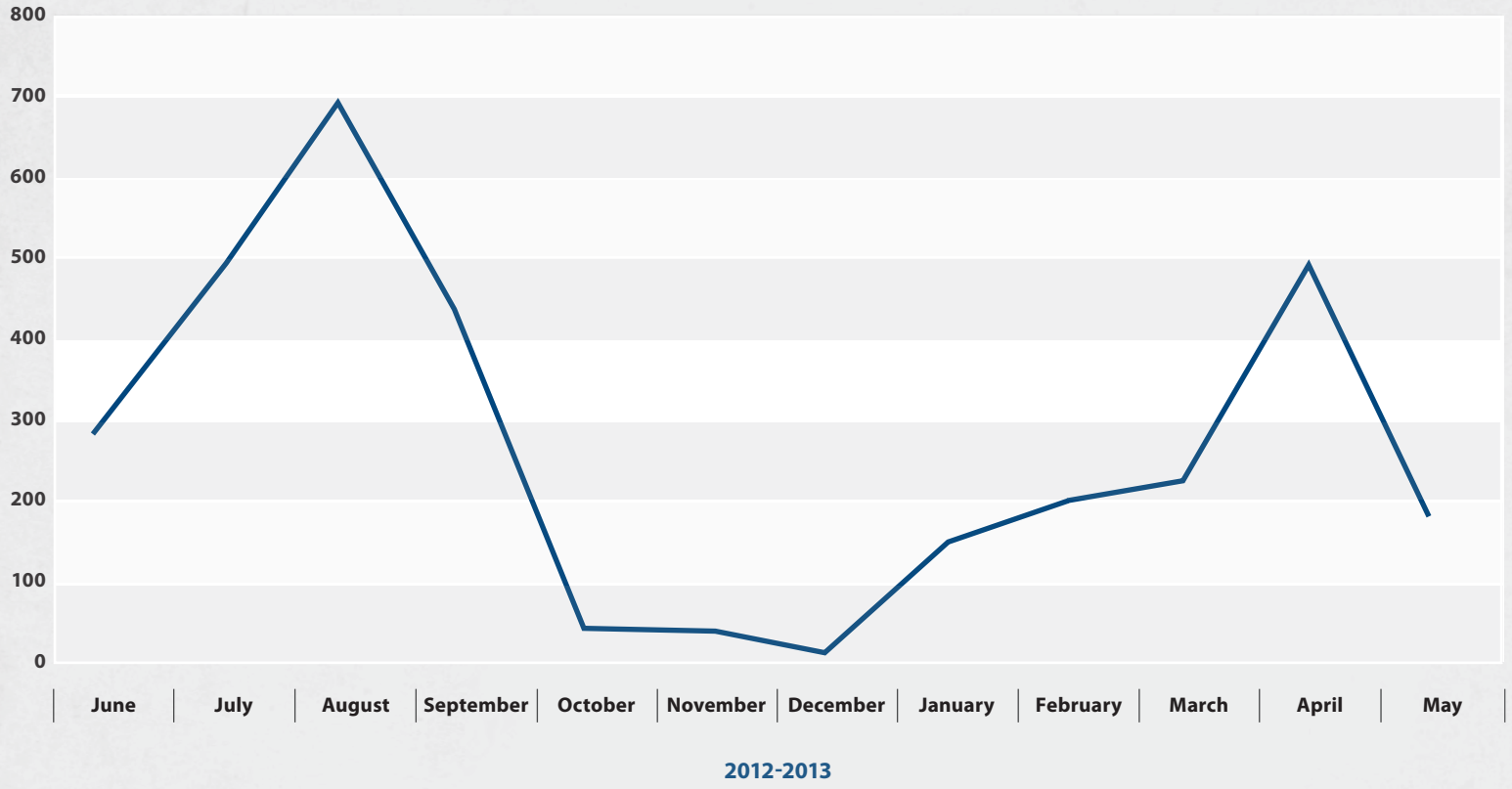
Figure 3 Time Spent on Project Website



TIME SPENT ON PROJECT WEBSITE

Figure 3 demonstrates the amount of time visitors spent on the project website. Not surprisingly, the largest proportion of visits to the site was less than 30 seconds in duration. These visits likely represent curious quick visitors, project participants pulling up the site to show to others in their agency/unit, and brief visits to look for specific information. This is common for most websites. If you put those visits aside, you will see that many visitors stayed on the site for quite awhile. More than one-fourth of the visits lasted more than 10 minutes. This is likely a combination of people interacting with multiple sections of the site and people spending extended time on one section.

Figure 4 Page Views by Month



PAGE VIEWS ON PROJECT WEBSITE

Given that the project website launched in June 2012 with participant recruitment peaking in August 2012, it is not surprising that the number of page views was heavy at the beginning of the launch (Figure 4). Views slowed over the holidays and then peaked again as new information was added and the site was redesigned (and re-launched in April 2013) to incorporate feedback from participants.

Table 5 Top 20 Most Visited Pages of the Program Site (in order)

	Page Views	Unique Page Views	Avg. Time Spent on Page
Landing page	505	342	00:02:41
Lesson 1: What is social media?	202	106	00:02:32
Lesson 2: Creating a social media plan	141	79	00:02:58
Fire/EMS agencies on social media	140	95	00:02:32
Your guide to getting started	140	81	00:02:01
Lesson 3: Choosing a social media channel	124	66	00:02:38
Lesson 4: Creating messages for social media	86	57	00:01:44
Getting Support for social media use in your agency	81	51	00:02:11
Lesson 5: Evaluating your social media program	77	55	00:02:22
General social media resources	73	52	00:01:47
Lesson guide	72	51	00:00:36
Lesson 7: Using creative commons materials	69	51	00:04:11
Sample Facebook posts	67	54	00:02:16
CIPA's social media links	66	52	00:01:41
Lesson 6: Managing social media crises	65	47	00:03:16
Injury & fire safety resources	61	46	00:02:07
Injury resources: bike sfety	54	33	00:01:43
Infographics	51	29	00:01:47
Sample tweets	50	38	00:01:31
Facebook resources	46	32	00:01:45

Table 5 details the most visited pages of the project website. The names of the pages in the table are hyperlinks to the pages. Not surprisingly, the landing page received the most page views, followed by Lesson 1, Lesson 2, the "Fire/EMS Agencies on SM" page, and the "Your Guide to Getting Started" page. These pages were also the ones that visitors were most likely to come back to on future visits because these pages had information that helped participants understand how to work with the project. The "Fire/EMS Agencies on SM" page showcases fire/EMS agencies that have been successful using SM; the high number of visits to this page demonstrates the interest of participants in examples of SM in action by agencies similar to their own. All of the pages had more overall page views than unique page views, which means participants were visiting pages multiple times.

Recommendations for Future Activities

From the beginning, one of the main goals of this initiative was to create a project that was sustainable long after the initial funding ended. This was achieved by establishing a project website that will remain live indefinitely. The website was designed to ensure that adding content to the site is a simple process, so additional lessons and other content can easily be added as the need arises. The website also can easily be revised to reach other audiences in Ohio and nationally.

Another option that could be pursued is collaboration with EMS accrediting bodies. If the SM curriculum developed by this project were offered as a continuing education unit (CEU) opportunity for EMS personnel, it could attract even more participants. There is a large potential audience that could benefit from the project nationally.

In planning for the future, the Child Injury Prevention Alliance (CIPA) has already begun to research how fire/EMS agencies in other states are using SM. CIPA was invited by Safe Kids Pennsylvania to speak about this project at its annual conference, Pennsylvania Childhood Trauma and Injury Prevention Conference: Collaboration is Key. CIPA's presentation focused on SM use by EMS and ideas for expanding this project from a state-wide pilot to a successful national project. The audience for this presentation included Pennsylvania-based injury prevention experts and EMS professionals. To see the presentation, click here. Since SM is constantly evolving, it is important to stay abreast of new trends, platforms, and information to stay relevant. CIPA is doing just that, so that any future expansion of this project will be as up-to-date and timely as possible.

Conclusions

Putting SM tools and information into the hands of fire/EMS is crucial to keep them connected with their communities and help them share injury prevention messages that can reduce injury-related morbidity and mortality. This project piloted a model that has the potential to be modified and expanded to other fire/EMS agencies in Ohio and nationally.

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