



## **Guidelines for Internet-based Health Communications**

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## 1. Introduction

### 1.1 Definition of Health Communication

The National Cancer Institute (NCI) and the Centers for Disease Control and Prevention (CDC) define health communication (HC) as “the study of communication strategies to inform and influence individual and community decisions that enhance health.”<sup>1</sup> HC can be used to raise awareness, increase knowledge, and/or change behavior regarding a specific health topic through a variety of media, from simple written brochures to flashy television advertisements. Despite the health topic or mode of communication, HC has always been an essential tool for health promotion and disease prevention. Today’s HC campaigns typically use multiple channels and often draw from techniques used in commercial marketing. Internet-based HC uses the Internet to communicate about a specific health topic.

Recognizing what HC can and cannot accomplish is an important first step. For example, HC can successfully raise awareness of a health issue, prompt interpersonal communication about a topic, or motivate further information seeking. In the absence of other support interventions, HC is generally less effective in changing fundamental behavior; however, it can trigger behavior change in audiences already predisposed towards a particular action. HC can also link people to health care services, such as screening for sexually transmitted diseases (STD). Outlined below are some of the capacities and limitations of communication-based interventions.<sup>1</sup>

Communication alone can:

- Increase the intended audience’s knowledge and awareness of a health issue, problem, or solution
- Influence perceptions, beliefs, and attitudes that may change social norms
- Prompt action
- Demonstrate or illustrate healthy lifestyles
- Reinforce knowledge, attitudes, or behavior
- Show the benefit of behavior change
- Advocate a position on a health issue or policy
- Increase demand or support for health services
- Refute myths and misconceptions
- Strengthen organizational relationships

Communication combined with other strategies can:

- Cause sustained change in which an individual adopts and maintains a new health behavior or an organization adopts and maintains a new policy direction
- Overcome barriers/systemic problems, such as insufficient access to care

Communication alone cannot:

- Compensate for inadequate health care or access to health-care services
- Produce sustained change in complex health behaviors without the support of a larger program for change, including components addressing health-care services, technology, and changes in regulations and policy
- Be equally effective in addressing all issues or relaying all messages because the topic or suggested behavior change may be complex, because the intended

audience may have preconceptions about the topic or message sender, or because the topic may be controversial

Public health programs can enhance their overall HC by using the Internet as a complementary or alternate platform for their current health campaigns. Well-planned use of the Internet and/or other technologies can expand reach to a much wider audience.

This guide has been developed to describe the various ways in which the Internet and other technologies may be used for public HC and provide some guidance on which web-based communication strategies may be most useful.

## **1.2 Health Communications and the Internet**

The Internet offers a wealth of possibilities for health communication. HC delivered over the Internet extends beyond local and regional boundaries while providing unique channels with which to reach online audiences. The Internet not only expands the reach of health messaging, but it also permits a higher degree of interactivity, targeted messaging, and tailoring of health messages for consumers. The ease of use, speed of communication, and general widespread accessibility of the Internet make it ideal for providing access to timely and detailed information in a form that is more personal and relevant to consumers than traditional HC.

Online HC efforts can be as simple as a banner ad on a single website or as extensive as a multilayered social marketing campaigns that incorporate multiple formats both online (banner ads, interactive websites, podcasts, videos) and offline (billboards, palm cards, and other promotional items). Skillful use of HC strategies on the Internet can allow for more widespread and finely targeted health education, disease prevention, and program promotion.

When designing and implementing an online HC campaign, programs should make every effort to work with other organizations within the local community, especially those with similar goals (but not necessarily the same goals). Engaging and working with other organizations will increase buy-in from the target community, allow for the sharing of resources, and broaden the reach of the campaign.

As discussed above, HC on the Internet can take on many forms, including but not limited to pop-up ads, banner ads, e-mail campaigns, websites, audio/video clips, podcasts, and user-generated content such as blogs and forums. It is important to note that technology, especially Internet technology, is continuously changing. Plans for adopting and making effective use of new tools and technologies should be developed as the new technologies emerge.

Regardless of the platform used, all HC should contain the following elements:

- 1.) Overarching health communication goals
- 2.) An underlying theory or combination of theories (Health Belief Model, Social Learning Theory, Diffusion of Innovation, Social Marketing Framework, etc.)
- 3.) A clearly identified target audience

- 4.) An in-depth understanding of the target audience's knowledge, attitudes, perceptions, and behaviors regarding their sexual health
- 5.) Knowledge of the barriers that may inhibit the desired goal
- 6.) Delivery information - based on audience research above
  - What the message will be
  - How the message will be delivered
  - When the message will be delivered
- 7.) Evaluation, evaluation, evaluation! This is the most overlooked, yet the most important, step of HC plans because an evaluation will be able to tell you why your efforts did or did not work and will inform future HC efforts.

### **1.2.2 Social Marketing**

Social marketing is one form of health communication that is particularly amenable to the Internet. Social marketing is the application of “marketing principles and techniques to influence a target audience to accept, reject, or modify a behavior or attitude for the health or social benefit of individuals or the public”.<sup>2</sup> Social marketing applies the “Four P’s” of commercial marketing (i.e., product, placement, promotion, and price) to promote a social good, rather than a product. It is a consumer-oriented strategy based on audience needs, wants, beliefs, and concerns. This requires an in-depth understanding of the target audience through qualitative research with consumers to determine how best to market a social good that will appeal to audience desires and values. Key elements of effective social marketing include understanding the target audience and integrating messages and programs into the community’s existing realities.<sup>2</sup>

### **1.3 Evaluation of Health Communication Activities and Programs**

The importance of evaluation cannot be over-emphasized. Using the Internet for public health activities is relatively new and as result there are few published evaluation studies of online health campaigns. Evaluation of any campaign is essential, but the evaluation of a campaign that incorporates the Internet is crucial because issues such as effectiveness and impact are likely to influence future Internet HC efforts and funding. Documenting and evaluating campaigns from the first step of the process through the final outcomes will assist programs in making decisions about, and changes to, future campaigns. Detailed evaluation also has the potential to assist others in the field. Additionally, evaluating online HC activities will help to ensure that a program is meeting its goals and objectives, that factual health-related information is being delivered appropriately, and that all related program policies and procedures are being followed. A successful evaluation can answer numerous questions including the number of people reached by the campaign, when they saw the campaign, where they saw the campaign online, whether the campaign reached its intended audience and whether it had the desired effect or elicited the desired behavior.

One of the first steps to creating a HC campaign is the development of a logic model. A logic model is an effective way of clearly outlining the steps and desired outcomes of a program. Logic models are also useful tools for evaluation efforts. For more about logic models, see *Appendix A*. Additionally, Appendix A contains information about several types of evaluation: formative, process, outcome, and impact.

The CDC developed an evaluation manual specific to STD programs called the *Practical Use of Program Evaluation among STD Programs*<sup>3</sup>. STD programs can use this manual to help develop and guide their evaluation efforts, including the creation of a logic model.

**Tip from the field**

Obtain a copy of the manual:

*Practical Use of Program Evaluation among STD Programs*

<http://www.cdc.gov/std/program/pupestd.htm>

A thorough evaluation can answer many questions about whether the intended goals and/or objectives of health communication campaign were achieved. It can also ensure that the proper steps are in place for the next campaign. Remember that evaluation activities should be planned and executed prior to implementation of the campaign so that all tools, data, etc are in place before the campaign is launched.

## 2. Websites

### 2.1 Description and Purpose

A website is a collection of web pages, images, videos, podcasts, or other digital assets accessible via the Internet. Websites on the Internet may be accessed through the use of a computer, a cellular telephone, a hand held device, game console, or other hardware device with connectivity and webpage browsing capacity.

The Internet represents an additional opportunity to reach at-risk populations directly through targeted messages, and indirectly by providing information, materials, and resources to the general public 24 hours a day, seven days a week.

For example, a website can provide:

- Information on STD clinics including hours, services offered, locations, and fees
- Information on STD symptoms, screening recommendations, and risk reduction strategies
- Health-related updates for health-care providers and/or at-risk groups
- Links to treatment guidelines and other tools for health-care providers
- Fact sheets, brochures, and other health information materials for use in schools, community organizations, and health-care venues
- Online training

Because the Internet has become integrated into American culture, most people will anticipate that any program, including a health campaign or agency will have a website. A website can be a valuable tool and can help support HC efforts. Online HC campaigns should have, at minimum, a web page dedicated to the HC campaign within an existing website or a stand-alone website to provide more information on the health topic.

Just as a storefront or an office space provides an atmosphere, a website will leave visitors with an impression of any program. Careful consideration should be given to the design of any website that is created for the purpose of HC and that the impression given by the site is appropriate for the campaign and the target audience. Additionally, users will seek information that is current, it is essential that the web site be updated when changes are made to the services, fee structure, or other information described on the web site.

## **2.2 Types of Websites**

There are various types of websites. Many websites are easily accessible to anyone with Internet access. Others require a subscription or membership to access some or all of their content, e.g., dating sites, message boards and/or social networking sites.

Website types include:

- **Personal Websites:** these are sites which belong to, and are usually maintained by, individuals and typically contain information about personal interests.
- **Photo Sharing Sites:** as the name suggests, these are sites where individuals can upload and share photos with other individuals. There are many such sites; Flickr, Snapfish, Picasaweb and Photobucket are popular examples.
- **Social Networking websites:** these are also called community-building websites and refer to a broad class of web sites that allow users to connect with friends, family, and colleagues online, as well as meet people with similar interests or hobbies. Some examples of popular social networking sites are MySpace and Facebook.
- **Mobile Device Websites:** these are websites that have been specially formatted so that the information is accessible via a mobile device, such as a cell phone. Many websites are now providing a mobile option for their Internet-based sites.
- **Blogs (short for weblogs):** these are online diaries or journals. The activity of updating a blog is "blogging" and someone who keeps a blog is a "blogger". Blog entries are generally created by one person or organization, and readers can comment or reply to each entry.
- **Informational Sites:** these are sites created to provide information on a specific topic. Sites such as HIVtest.org or CDC.gov/std are examples of such sites.
- **Online Business Brochure/Catalog:** these are sites that offer users the opportunity to view products or explore purchasing options without providing the option to make an actual purchase. These types of website are referred to as Online Brochures or Catalogs.
- **E-commerce Websites:** these are websites that exchange goods and services for money via the Internet, such as Amazon.com or Ebay.com.
- **Wikis:** Wikis are, typically, informational websites or pages that allow anyone who accesses the website/page to contribute to or edit the content on the site. Wikipedia.com is one of the most well-known wikis.

The type of website that can be created is limited only by a program's resources, local policies and imagination. There are many types of sites that can be created at low or no cost with open source software. Open source software is software that is available to the general public for use and modification free of charge. Using open source software is one of the least expensive ways to get information online. More advanced websites that include interactive and/or animated features will be more complex to develop and will require more time and resources to maintain.

Websites that are created using web 2.0 technologies (such as blogs, wikis, and social networking sites) often use their membership to generate at least a portion of the site's content. This is generally referred to as user generated content (UGC), user created content (UCC) or consumer generated media (CGM).

Some websites are a hybrid of both UGC and content provided by the website administrator. Hybrid sites allow user submitted content to supplement the main content. For example, on Amazon.com, users can submit product reviews, but Amazon.com controls the main e-commerce content.

### **2.2.1 News feeds**

A news feed (or web feed) is a regularly scheduled summary of information, often news, which is delivered on a website or in an e-mail directly to subscribers. When the news feed is updated, the new content is disseminated to the readers and sites that are linked to the feed.

News feeds often include headlines and links to full versions of content. News feeds, while not a type of website per se, reside on websites and can be a useful tool for disseminating the most current information in real time. RSS (Really Simple Syndication) "is a family of Web feed formats used to publish frequently updated works – such as blog entries, news headlines, audio, and video – in a standardized format<sup>4</sup>."

The icon shown below is commonly used to indicate a news or RSS feed.



There are many examples of news feeds on the Web; the CDC RSS feeds (<http://www2a.cdc.gov/podcasts/rss.asp>) are just one example.

Retrieved 10/08/08 from [www.cdc.gov](http://www.cdc.gov)

A news feed can be relatively simple to create and can be done by hand-coding, using a software program, or using an online service. Once a news feed has been created, it can be made available to others to embed on their websites.

## 2.3 Creating a Website

Before creating a website, a program should first determine how its website will support the mission and goals of the program, in addition to identifying the website objectives, target audience and content. It is also important to consider how the site will be maintained including who will maintain the site and how often the content will be reviewed and updated. Keeping the site current, updated, and fresh is critical to its success as a HC tool.

There are many options available when creating websites for a HC program or campaign. Sometimes, an agency's Information Technology (IT) department can create a page(s) within the agency's website specific to the HC campaign. Others might be able to create a stand-alone website. There are also many web-hosting companies that offer a multitude of services that can be used to quickly create low-cost websites.

**For more in-depth information on creating websites see Appendix B.**

## 3. Banner Advertisements

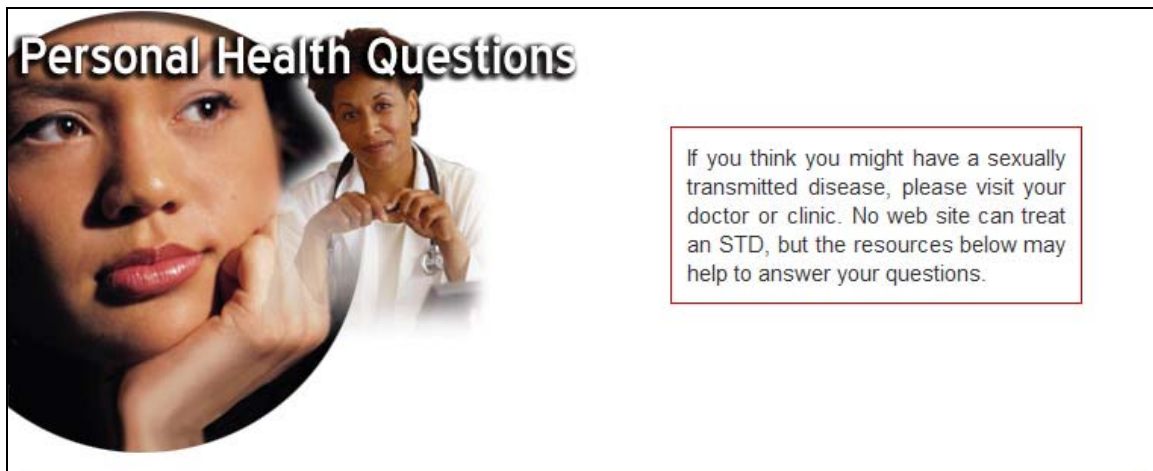
### 3.1 Description

A banner advertisement or “banner ad” is a graphic image (static, animated, or rich media) that is used on websites for the purpose of advertisement or promotion. Typically placed at the top, side, or bottom margin of a web page, banner ads serve the purpose of attracting attention to a specific issue. Banners can also serve to brand your program, campaign, or agency. Banners are usually linked to an informational website where more information on the relevant topic(s) can be found. Within public health, banner ads can and have been used to raise awareness about a specific health issue, to recruit participants into research studies, to encourage STD testing, and to link audiences to web-based, health resources.

### 3.2 Types of banner ads

A banner ad in its simplest and most basic form is referred to as a “stand-alone” banner. Stand-alone banner ads are used to attract attention to a specific issue without the use of a supporting website. They usually contain more text and information as they are the only source of information for the subject being presented. For example, a stand-alone banner may be used to advertise a one-time event such as a local testing event at a bar. One benefit of using a stand-alone banner is that it can usually be created quickly and with limited resources. However, users have come to expect to be able to click on a banner ad and link to a website for more information. When creating a stand-alone banner, it is important to include as much relevant information as possible, preferably with resources for more information. However, care should be taken to avoid placing too much information into a small space as this can overwhelm the reader.

Below is an example of a stand-alone banner. This banner ad, found on a CDC website about STDs, is intended to advise visitors to seek health information from a medical provider or organization beyond the website-listed resources. This ad is not linked to an informational website or additional resources.



More commonly, banner ads will list a web address or link directly to a website where more information on the topic can be found. It is strongly recommended that the link transport the user directly to a web page containing the most relevant information. For example, a banner ad encouraging syphilis testing should link directly to a site that

lists, at a minimum, the locations of syphilis testing sites and if applicable, testing hours and costs. Too often, banner ads link to unrelated web pages, such as the home page of a health department website, forcing the user to search for the information that was being promoted. This is a common problem and frustrates users, which often results in their leaving the website before finding the relevant information. The more clicks a person must make to find information, the more likely they will leave the site and look elsewhere.

**Click Through Rates (CTR)** - The percentage of click throughs from a banner ad to a website. A 1% CTR means that 1% of each 1000 banner views (or 10 visitors) have clicked through to the linked website.

The following example of a banner ad is intended to draw the interest of the target audience so that they seek out more information. The banner contains just enough information to allow the audience to deduce that clicking on the banner will take them to more information about the flu vaccination. When the banner is clicked, the audience is taken to a webpage ([cdc.gov/flu](http://cdc.gov/flu)) within a website ([cdc.gov](http://cdc.gov)) with important information regarding the flu vaccination and tips on how to prevent the flu.



### 3.3 Appropriate uses of banner ads for STD/HIV prevention

It is appropriate to use banner ads to raise awareness of a current health issue or problem (e.g. Methicillin-resistant Staphylococcus aureus (MRSA)), provide access to resources such as testing sites, and to recruit participants into studies. There are several important considerations when deciding how best to use banners ads for STD/HIV prevention such as:

- Who is the target audience?
- What is the health topic or call to action?
- On what websites will the banner ad be placed?
  - What sections/pages of the website are most appropriate and affordable?
  - What days of the week will it be visible?
  - What time of day will it be visible?
- How long will the banner ad run?
- How will the impact or effectiveness of the banner ad be evaluated or measured?
- Does the banner ad provide a visual and/or textual bridge to the target site?

### 3.4 Maximizing Banner Traffic

Banner ads should be designed to entice readers to seek more information. There are many variables to consider when developing a banner ad such as the design, message, size, placement, saturation, and frequency of display. Because of the oversaturation of banner ads online today, a phenomenon known as “banner blindness” has evolved.<sup>5</sup> “Banner blindness” appeared soon after traditional banners started cropping up on the web. The term describes how users ignore banner ads even when relevant information is included. Online advertisers are constantly brainstorming ways to combat banner blindness. Placement of the ad itself is important. Through researching eye movements and tracking mouse clicks, scientists have discovered that most people look at websites in an F-shaped pattern. This means that users merely scan the top of the page before focusing in on the center of the page where the most important content appears.<sup>7</sup> Marketers are now attempting to add live video to spice up their banner ads, in addition to incorporating microsites, or smaller websites embedded in a larger website, to promote specific campaigns. Despite banner blindness, it is important to remember that banner ads generate responses, create brand recognition, and can be cost effective.<sup>7</sup>

Following are some tips to consider when creating a banner ad.

1. **Study examples.** When designing a banner ad, start by studying those banners that you find enticing or interesting. Visit popular sites that are supported by advertisements and examine the different banner ads. This will help identify current designs and techniques in marketing and which may be most useful for your campaign.
2. **Be clear.** Your objective is to motivate people and have them take a particular action after viewing your ad. A strong, clear message will help capture their interest. Clear communication requires that readers understand your message the call to action.
3. **Control the size.** To minimize user frustration, limit the file size of the ad to ensure it will display quickly and properly to all viewers.
4. **Less is more.** Using fewer words means that a larger font size can be used. Using bigger text may increase the impact of the message.
5. **Use power words/phrases.** These are single words or short phrases that immediately communicate an action or a desired behavior. “Hurry” is a common power word used in traditional advertising.
6. **Select images carefully.** Visuals must be chosen with great care. Too few will lead to a bland banner, while too many will destroy the desired effect.
7. **Use contrast.** Most banner ads include these elements: background colors, a bold text message, and a photograph/drawing, and/or animation. To be effective, contrast is needed between these elements. Contrast can be achieved by using different font sizes and bold colors.
8. **Limit use of different fonts.** When designing an ad, try to use no more than two fonts. Select fonts from different categories if using more than two fonts.
9. **Don't overdo animation.** Animation should draw a user's eye but not overwhelm them. When setting the animation speed, look for something that changes at a slow to moderate pace. It helps to set animations so that they stop after three cycles; and some sites may insist on this.
10. **Less really is more.** Less cluttered messages will make a stronger impact.

- 11. Be appropriate.** Posting a banner that is appropriate to the venue is extremely important. A banner ad on a swinger site should be created with a more mature audience in mind than a banner created for a social networking site. Study the graphics on the website where you intend to display the banner ad to determine what images will work best for the targeted audience.
- 12. Location, location, location.** A fantastic banner ad with crisp text and appealing graphics can still fail to meet the set objectives and goals. Instead of rushing back to the drawing board, check to make sure the correct audience is being targeted, at the most appropriate times, and that the banner is sitting in the right location on the website.
- 13. Stay in context.** Always design the banner ads while keeping in mind the context in which it will be displayed. While the message can be the same across different websites, try to choose colors and fonts based on the website on which the ad is to be displayed. Check other banner ads on the website to ensure that your ad uses colors that stand out from the crowd. Additionally, it is important to also consider the consistency between the banner ad and the website to which the banner ad is being linked. Users who click on a banner ad expect to immediately view relevant and appropriate material.

### 3.5 Logistics and Issues to Consider

Primary considerations for banner ads are: the budget, the design of the message, and the call to action or the goal of the banner. As mentioned previously, before designing a banner ad, the target audience should be identified as well as any supporting web pages or websites. Lastly, it is necessary to decide the best location (website) and viewing times for your banner ad. See *Appendix C* for additional considerations and tasks.

#### **Brand Recognition**

One study found that a banner ad can engender brand recognition as effectively as a TV ad. 40% of participants remembered a static banner ad vs. 41% who viewed a 30-second commercial.<sup>7</sup>

As mentioned earlier, it is important to remember that banner ads generate responses, create brand recognition, and are cost effective.

#### **Tip from the field**

“Click-through” rates (CTRs) are not the only or necessarily the best determinate of a banner ad campaign’s success or failure. There are other questions that can gauge success such as:

- Was the message delivered?
- Who clicked on the banner?
- Did the banner facilitate the desired behavior?
- When users landed on the target website, did they stay? Did they follow links? Spend time on each page of the site?
- Was our goal reached?

### 3.5.1 Funding

The creation of a banner ad can be relatively inexpensive. In most cases it will be necessary to involve IT personnel or other persons with computer graphics experience.

It may be determined that an external agency or contractor is needed. Professionally produced banners are typically more expensive than those created in-house and often will entail a lengthier creative process that may include steps like focus groups and peer review.

#### **Tip from the field**

Targeted ads get higher click-through rates (CTR) than contextual ads. For example, a banner ad for tennis rackets will typically have higher CTRs on a sports-related site than on a general website, though targeting banners to specific sites may result in higher marketing costs.<sup>8</sup>

Generally, the more popular, mainstream websites will charge large amounts to advertisers. It is an unfortunate fact that, in most circumstances, public service providers cannot financially compete with other advertisers that may be vying for premium ad space. Because of budgetary concerns, it may be necessary to establish a good working relationship with a website, and will most likely entail skillful rate negotiations. However, there are some sites that will run banner ads at little or no cost as a public service. Collaborating with website partners is a tricky endeavor and must be planned and pursued with care and caution. Collaborating and partnering with other organizations can also offset some of the costs.

#### 3.5.1.1 Duplication of campaigns

Duplication of previous health communication campaigns is a possibility and should be considered, as it provides a low-cost option to conduct health communication activities. Many programs and health departments have already created and evaluated websites and banner ads that other programs can use and adapt to their specific location and target audience. Get Tested Chicago ([www.gettestedchicago.com](http://www.gettestedchicago.com)), Boston ([www.gettestedboston.org](http://www.gettestedboston.org)), and Columbus ([www.gettestedcolumbus.com](http://www.gettestedcolumbus.com)) are prime examples of cities adapting an existing campaign to local needs.

Keep in mind that prior permission should always be requested and received in writing before using and adapting another program's banner. Unless it is a federally funded banner ad, the banner ad should not be considered public domain.

### 3.6 Examples of banner advertisements

#### 3.6.1 San Francisco

In 2003, the San Francisco Department of Public Health (SFDPH) and Internet Sexuality Information Services, Inc (ISIS) developed and pilot-tested 9 animated banner advertisements to raise awareness about syphilis among men who have sex with men (MSM) who sought sex partners online. The banner ads were placed in local, San

Francisco-specific chat-rooms, personal ad areas of Gay.com, and all member-created rooms (not geographic-specific) on AOL. The ads resulted in 32,270 (0.1%) click-throughs to SFDPH websites containing syphilis information. The cost per click-through varied from about \$0.05 to over \$10, depending on the Internet site and placement within the site. The cost of banner advertisements ranged from about \$1,000 per month (Gay.com) to \$10,000 per month (AOL). Banners on the personal ad area on Gay.com had the highest number of click-throughs.<sup>9</sup> No data beyond click-throughs were collected.

**LIKE TO SUCK?** [CLICK HERE](#)

(a) 

**SYPHILIS** IS BACK IN SAN FRANCISCO  
IT'S TREATABLE. GET CHECKED TODAY. [CLICK HERE](#)

remember the **70's?** and... **syphilis** [CLICK HERE](#)

(b) 

**Syphilis is back.** IT'S TREATABLE. GET CHECKED TODAY. [CLICK HERE](#)

**GOT A SORE OR A RASH?**

(c) 

**SYPHILIS** IS BACK IN SAN FRANCISCO  
GET CHECKED TODAY. >>>> [CLICK HERE](#)

**IT'S ON THE RISE...**

(d) 

**SYPHILIS** IS BACK IN SAN FRANCISCO  
IT'S TREATABLE. GET CHECKED. [CLICK HERE.](#)

**SAVE YOUR ASS...**

(e) 

**SYPHILIS** IS BACK IN SAN FRANCISCO  
GET CHECKED TODAY. >>>> [CLICK HERE](#)

Created by ISIS, San Francisco, CA

### 3.6.2 Massachusetts

#### Example 1:

In 2003, the Massachusetts Department of Public Health (MDPH), Division of STD, noted a rise in infectious syphilis rates among MSM in the state's morbidity data. In response, the MDPH adapted a banner ad campaign that was originally created for San Francisco by ISIS (see example above). The MDPH was granted the rights to use the banner, which was then modified for the New England region for a nominal fee. The campaign was designed to raise awareness about and encourage testing for syphilis among MSM. Because of its popularity among the target population and because it was named as a site by MSM patients with infectious syphilis, MDPH established a relationship with Manhunt through face-to-face meetings. Banner ads were then posted on Manhunt.net free of charge.

When the ad was clicked, the viewer was taken directly to a page on the health department website that provided a list of STD clinics in Massachusetts. The banner ad ran from October to December 2003 and was viewed over 400,000 times, in the combined New England states, with an average CTR of 2%, or about 8,000 visitors. The banner ad ran again from January to April of 2004 resulting in more than 590,000 ad views in the New England region with an average CTR of 0.46%, or about 2,700 visitors. No data beyond click-throughs were collected. The MDPH and staff at Manhunt.net determined that the ad had reached saturation and it became necessary to develop another online campaign. (D. Novak, personal communication, August 19, 2008).



Created by: ISIS, San Francisco, CA.

## Example 2

The MDPH ran a second syphilis-awareness campaign from May through October of 2004 on both Manhunt.net and Craigslist.com. This ad was similar to the commercially recognizable "Got Milk?" ad campaign, asking "Got Syphilis? Don't Know? Get Tested" and was modeled after a campaign from Chicago called "Get Tested Chicago". The campaign promoted syphilis testing at a mobile-testing van on specific dates. The ad was linked to GetTestedBoston.org, a website developed specifically for the campaign by The Medical Foundation ([www.tmfnet.org](http://www.tmfnet.org)). In addition to the online banner ads, the campaign was promoted through ads placed in the gay press, posters displayed over urinals in local bars, and through outreach workers who recruited men to be tested.



Created by: The Medical Foundation, Boston, MA

The advertisement above was posted on Manhunt for about a week prior to the van screening date. The banner was viewed over 37,700 times in Massachusetts alone. Approximately 346 people, a CTR of 0.92%, clicked on the banner ad and were linked to the testing website (see below). Of the 108 men screened for syphilis at the mobile van, 54% were recruited by outreach workers, 26% came as a result of seeing the banner ad on Manhunt.net, 15% from gay press, and 6% from posters. (D. Novak, personal communication, August 19, 2008).

# GOT SYPHILIS?

DON'T KNOW? GET TESTED

HOME | SYPHILIS Q&A | TESTING SITES

**Let's beat syphilis.**  
Syphilis is spreading fast among gay and bisexual men in Boston. You can help stop its spread by [learning more](#) about the disease and [getting tested](#). This site provides the information you need.

**Make syphilis testing part of your routine.**  
If you're sexually active, make testing part of your routine. You have many testing options:

- Free, safe, and confidential testing this summer and fall at the BPHC Health Van, the 2nd Thursday of each month through October: June 10, July 8, August 12, September 9, and October 14, in the South End (corner of Berkeley and Columbus), 4:00 to 9:00 p.m.
- Visit a [testing site](#) for free or low-cost testing
- Get tested at your own doctor's office or health center

**Syphilis is curable.**  
Syphilis is treated with antibiotics and can be cured – but it's important to be tested early. Untreated, syphilis can cause blindness, heart problems, and brain damage. Routine testing can help you and your partners stay safe.

**FREE SYPHILIS TESTING  
SAVE THE DATE**

Visit the BPHC Health Van on the 2nd Thursday of each month through October 2004

**June 10  
July 8  
August 12  
September 9  
October 14**

South End (corner of Berkeley and Columbus), 4:00 to 9:00 p.m.

Created by: The Medical Foundation, Boston, MA

### 3.6.3 Los Angeles

In 2006, the Los Angeles Gay & Lesbian Center released the “HIV is a gay disease. Own it. End it.” campaign, both online and via traditional media spots such as in magazines and on billboards. The campaign caused a great deal of media “buzz” and the ensuing public discussion was plentiful and often heated.<sup>10-11</sup>

Controversial banners and campaigns can generate a great deal of “free” press regarding an issue; however, it is difficult to scientifically evaluate this type of campaign and track its results. The ultimate determination of the success of such a campaign may be based on anecdotal observations, such as an increase in testing at a certain location or by a population not usually seen in a certain location, rather than through detailed data that can be collected and measured.

Controversial campaigns can also attract the attention of policy makers who can influence laws or funding around an issue. The long-term positive and negative effects (i.e., gay community awareness of the risk of contracting HIV among their community vs. negative stereotypes reinforced to the general public) of a campaign should always be

taken into consideration before deciding to create a campaign that may be viewed as controversial.



In summary, banner ads can be an effective way to increase awareness, promote a service or resource, create brand recognition or recruit participants. Care and time must be taken not only when developing the “creatives” for the banner ad itself, but also when determining the target audience, the call to action or goals of the banner ad, when and where the ad will run, and how success will be measured i.e. how the banner ad will be evaluated.

## 4. Podcasts, Videos and Blogs

### 4.1 Description

A podcast is “a series of audio or video digital-media files which is distributed over the Internet by syndicated download, through Web feeds, to portable media players e.g. iPods and personal computers. Though the same content may also be made available by direct download or streaming, a podcast is distinguished from other digital-media formats by its ability to be syndicated, subscribed to, and downloaded automatically when new content is added.”<sup>12</sup> Video podcasts are sometimes referred to as vodcasts. For the purposes of this document, podcasts refer to both audio and video formats.

Video sharing sites are websites where users can upload and distribute their own video clips. There are dozens of video sharing sites but the most popular example of a video sharing site is YouTube.com.

Blogs and video blogs, also known as vlogs, are online diaries or journals used for commentary on any subject. Blogs are in written text form and vlogs are in a video format. Most blogs have a comment feature, which allows readers to make and post comments. For the purposes of this document, the terms blogs refers to vlogs as well.

## **4.2 Who is using Podcasts, Videos and Blogs**

### **4.2.1 Podcasts**

The estimated percentage of Americans listening to podcasts varies by survey. According to a 2008 report from the Pew Internet & American Life Project, 19% of adult American Internet users have downloaded a podcast, up from 12% in 2006.<sup>13</sup> However, a 2008 survey conducted by Pricegrabber.com comparing technology use among four generations found that 50% of Generation Y (born after 1979), 49% of Generation X (born 1965-1979), 38% of both the Baby Boomers (born 1946 – 1964) and 38% of The Greatest Generation (born before 1946) are listening to podcasts.<sup>14</sup> Despite the increasing numbers of Americans downloading and listening to podcasts, podcast users are still more likely to be younger (18-29 years old) and male.<sup>13</sup>

Predictions are that podcast use will continue to increase as mobile devices (iPods, MP3 players, cell phones) become more sophisticated and affordable. By 2012, one marketing firm predicts an increase in the podcast audience by 250%, or 65 million Americans.<sup>15</sup>

### **4.2.2 Video sharing sites**

According to a 2008 study conducted by the Pew Internet & American Life Project, traffic to video-sharing sites such as YouTube nearly doubled between 2006 and 2007 with 48% of Internet users reporting having ever been to a video-sharing site. Although there has been an increase in traffic to video sharing sites across all demographics, it is still most popular among men and younger adults under 30 years of age.<sup>16</sup> Of note, more than 57% of online video watchers report sharing online videos with others, contributing to the viral spread of videos online.<sup>17</sup>

### **4.2.3 Blogs**

Data from a 2006 Teens and Social Media survey found that 28% of online teens have created their own blogs, nearly doubling the percentage reported in 2004. Online teen girls are more likely to blog than their online male counterparts; 35% compared to 20% respectively. The survey also found that those teens with social networking profiles (see section 5 for more information on social networking sites) were more likely to be bloggers than those without a SNS profile. Of these social networking teens, 70% report reading the blogs of others and 76% report having posted a comment to a friend's blog.<sup>18</sup>

More recent data (2008) show that 57% of Generation Y and 49% of Generation X have engaged in online blogs, either writing and/or reading blogs. However, while primarily the domain of the young, 36% of Baby Boomers and 36% of The Greatest Generation report engaging in blogs as well.<sup>14</sup>

It is worth noting that there are more blog readers than there are blog writers<sup>19</sup> and that a blog exists on the web for almost any health issue.

**The Pew Internet & American Life Project** studies the social impact of the Internet and other emerging technologies on the lives of Americans. It is a great resource for understanding, and staying abreast of, how target audiences are using the Internet and new technologies. Readers can sign up to receive email notifications of new reports.

<http://www.pewinternet.org/>

### **4.3 How Podcasts, Videos and Blogs can be used for STD/HIV Prevention**

Audio/video applications and blogs can be used in a variety of ways to communicate with and educate patients, clients, health care providers, and other health professionals.

#### **4.3.1 Podcasts**

Podcasts have been used to provide information and education directly to various audiences from the general public to health care providers. Podcasts make receiving information easy, since users only need to subscribe once to have the information delivered automatically. Many colleges and universities have begun using podcasts as a way to provide information to their students by making such things as lectures and audio recordings of text books available for download. Some medical schools are even providing high resolution audio of heart and respiratory sounds available via podcasts.<sup>20</sup>

Other ideas for possible podcast topics could include: tutorials on how to take the sexual histories of patients, how to conduct a partner notification interview for new DIS officers, how to talk with sex partners about STD/HIV status disclosure, or how to correctly put on a condom. Continuing education credits could be offered to health care professionals to encourage listenership.

#### **4.3.2 Video sharing sites**

A quick search on Youtube.com for HIV or any STD related topic demonstrates the various ways that video sharing sites are being and can be used for STD/HIV prevention. Videos can be tailored to target populations such as youth or physicians or can be used to address a specific health topic. They can be simple informational videos, providing facts and pictures or can be more detailed, how-to videos such as how to put on a condom or how to conduct a sexual history. Videos can also be used to share trainings, lectures and other learning opportunities.

### 4.3.3 Blogs

Blogs can be a great way for individuals or groups to exchange health related information. Whereas podcasts and video sharing sites provide one-way information flow, blogs allow for information to flow bi-directionally because of the comments feature found on most blogs. This feature also allows the writers of blogs to gather information informally about their readers such as their concerns, interests, and opinions. Essentially, it allows the blogger (or blog writer) a “pulse check” of their readers.

### 4.4 Logistics and Issues to be considered

Audio/video applications and blogs are convenient ways to deliver information at a low cost. One of the most considerable issues with these distribution channels is the time it will take to regularly compile, write and produce new material. Once the podcast, video or blog is created though, there is little or no cost for dissemination outside of promotional costs. Links to the material can be easily shared with other websites, blog writers and online networks.

The University of Missouri wrote and disseminated a White Paper on Podcasting & Vodcasting (March 2005) in which the basics of developing a podcast and/or a vodcast are explained.

[http://edmarketing.apple.com/adcinstitute/wpcontent/Missouri\\_Podcasting\\_White\\_Paper.pdf](http://edmarketing.apple.com/adcinstitute/wpcontent/Missouri_Podcasting_White_Paper.pdf)

Another significant challenge with these applications is how to reach and retain the target audience. The information will need to be readily and easily accessible, as well as have compelling content so that users will want to subscribe and listen to, read, and/or watch the information.

Typically, these technologies allow users to comment on content, which can be useful tool for gathering feedback and monitoring attitudes, beliefs and knowledge. However, comments may need to be monitored, as some users may include malicious comments, profanity, and other inappropriate remarks.

Evaluating the success of information delivered via these venues may also be challenging. Process measures such as number of podcast downloads, number of blog comments and their content, CTRs, etc. are simple to collect. However, mechanisms for tracking knowledge, behavior or attitude changes among participants will be much more difficult and costly, often involving qualitative and quantitative surveys.

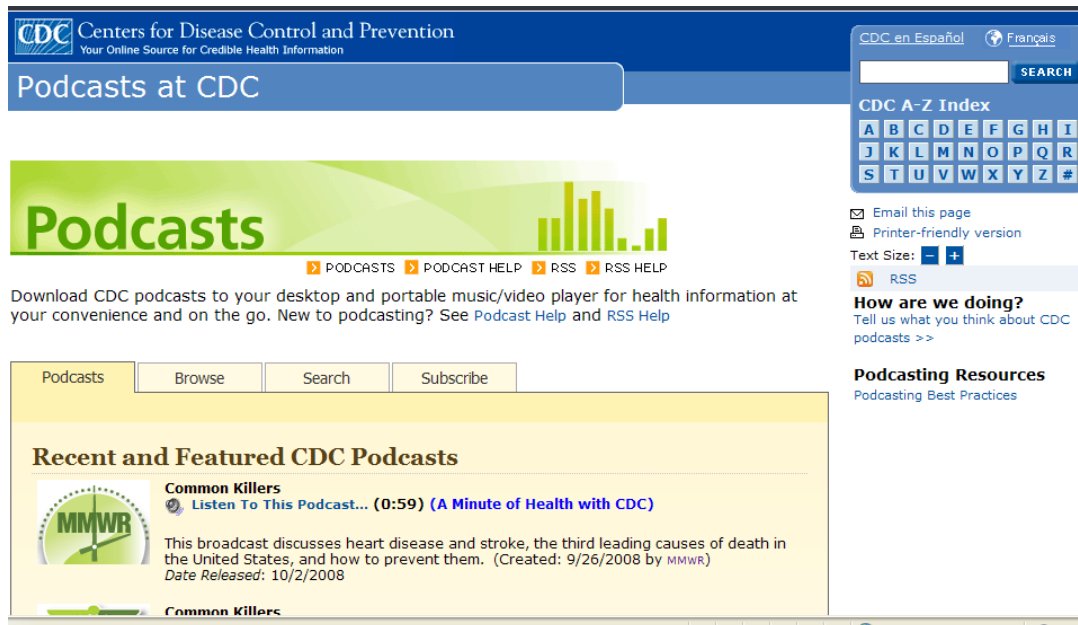
### 4.5 Examples of Podcasts, Videos and Blogs

#### 4.5.1 Podcast example

A good example of a variety of podcasts, in both audio and video formats, produced for varying audiences are those produced by the CDC, which are available at <http://www2a.cdc.gov/podcasts/index.asp>. There are hundreds of accessible podcasts

ranging in topics from emergency preparedness to sickle cell anemia; over 40 of these podcasts are specific to STDs & HIV.

The Division of STD prevention was the first division at the CDC to record a video podcast. The video podcast highlighted the release of the 2006 STD Treatment Guidelines and was intended as quick way for STD providers to learn about the most recent changes and additions to the guidelines.



Retrieved from [www.cdc.gov/podcasts](http://www.cdc.gov/podcasts) on October 3, 2008

#### 4.5.2 Video sharing example

The Safe in the City videos are an excellent example of a video sharing site that can be used to disseminate useful HIV/STD prevention materials including, in this case, an effective intervention.

The Safe in the City study found that showing a brief video in the waiting rooms of STD clinics reduced subsequent new infections in viewers by nearly 10% compared to non-viewers.<sup>21</sup> DVDs of the videos have been made available to STD clinics nationwide, but by uploading it to Youtube.com, the researchers have expanded the video's reach to a much larger and more diverse audience.

Retrieved from [www.Youtube.com](http://www.Youtube.com) on October 3, 2008.

### 4.5.3 Blog example

AIDS.gov maintains a blog specific to HIV/AIDS (<http://blog.aids.gov>). The blog discusses ways in which the prevention field can use new media and technologies and is an excellent example of how a blog can be used to reach and educate a professional audience.

Retrieved from <http://blog.aids.gov> on October 3, 2008

## 5. Current Trends

### 5.1 Online Social Networking Sites (SNS)

#### 5.1.1 Description

A social networking website (SNS) is a virtual community created for the purpose of connecting people who are interested in a particular topic and providing a virtual space for people to socialize. Members create profiles, which allow users to share personal information and pictures. SNSs also allow members to interact with one another through public messaging, private emails, blogging, instant messaging, etc. Many social networking sites offer small applications (also known as *widgets*) that users can install on their profiles or send to their friends. These applications (widgets) encourage users to remain online and use the website for longer periods of time and can come in various forms such as a game, survey, or virtual trinkets like buttons or bumper stickers.

While not a new phenomenon, SNSs have achieved great popularity. Friendster ([www.friendster.com](http://www.friendster.com)) was one of the first social sites appearing in 2002, followed by MySpace ([www.myspace.com](http://www.myspace.com)) a year later. MySpace was originally launched as a place for bands to promote themselves to a larger audience, but became extremely popular with teens and now has a varied, multi-generational audience. In 2004, two years after MySpace premiered, Facebook ([www.facebook.com](http://www.facebook.com)) debuted. Facebook initially limited its membership to college students only but later welcomed everyone.

There are noteworthy distinctions between social networking, dating, and ‘hook-up’ sites. All SNS are created to connect people with similar interests, but “general purpose” SNS such as Facebook or MySpace are primarily intended for meeting new people or enhancing existing relationships. Dating and hooking-up can result but is not the primary focus. Dating sites such as Match, eHarmony or JDate are primarily for people looking for a romantic and/or long term relationships though friendships and/or hook-ups can happen. Hook-up sites such as Manhunt and Adam4Adam are sites for people looking to find sex partners. Friendships or serious relationships may occur among members on these sites but that is not the primary mission of the website.

#### 5.1.2 Who is using social networking sites?

In 2007, the Pew Internet & American Life Project reported that approximately 55% of teens between the ages of 12 and 17 used an online SNS such as MySpace and Facebook. Forty-eight percent of these teens reported accessing these sites on a daily basis or more often.<sup>22</sup> More recent data indicate that among online Americans, as many as 85% of 13 – 24 year olds are on a social networking site, followed by 71% of 25 – 41 year olds, 59% of 42-60 year olds and 59% of 61 – 75 year olds.<sup>14</sup> Although most often used by the younger generations, SNS are no longer the sole domain of the youth.

MySpace and Facebook are currently the most popular SNS, but SNS for niche populations are growing in popularity. Some companies are even creating internal, private social networking applications for their employees. Recognizing that the STD/HIV prevention and sexual health communities needed a way to communicate and share information, the Denver-based Internet and STD Center of Excellence (COE)

developed, [www.STDPreventiononline.org](http://www.STDPreventiononline.org), a social networking website for sexual health professionals. To date, there are over 2000 members of the website.

### **5.1.3 How it can be used for STD/HIV Prevention**

Providing STD/HIV prevention and sexual health information on SNS is an example of the program philosophy of “meeting patients and clients where they are.” Profiles on SNSs can provide simple information such as clinic location and hours or can be more complex e.g. staffing the site with outreach workers who can answer STD/HIV-related questions, advertise available services, and provide referral information. Groups and sub-groups can also be created on SNSs for people with similar interests, be it members of the target population or professionals connecting with each other. On Facebook, for example, a group was created to connect organizations focused HIV research from all over the world. Additionally, SNS can be used to advertise a health message or campaign such as HIV testing day through the development and sharing of applications and widgets.

Anecdotally, SNSs have been used to recruit participants into research activities, conduct focus groups with youth and perform partner notification. In today’s world, it is important to have your organization’s information available in various media, including social networking sites.

### **5.1.4 Logistics and Issues to be considered**

The same logistics and issues addressed in the Outreach and IPS sections of The Guidelines regarding confidentiality, cultural and linguistic competency, etc., apply to SNS as well. Confidentiality is a priority, as is the provision of accurate information and timely responses. (Please see chapter 3 of the Outreach section – Principles of Outreach and chapters 2.2 and 3.2 of the IPS section – Principles of Partner Notification and Confidentiality and Ethics, respectively).

It is important to remember that, when joining a social networking website, established community norms exist. To be effective within a social network, programs must understand and adapt to the social norms established. Each SNS is different so it is important for agencies and programs to explore the SNS of interest prior to actually using the SNS for STD/HIV prevention efforts.

When joining any site, programs must agree to the site’s Terms of Services in order to access the site. Users may also be required to add pictures or provide some personal information. Any posted data should represent the public health worker’s agency, where applicable. All profiles must clearly identify program names and clearly state the sole purpose of the profile. Organizational/work email addresses should be used rather than personal email accounts. Images posted on the site should be agency logos or logos agreed upon by the program. If a website requires detailed information such as interests and activities, organizations should choose the healthiest and safest options. It is imperative that a clear boundary is maintained between one’s online professional work and one’s personal online life.

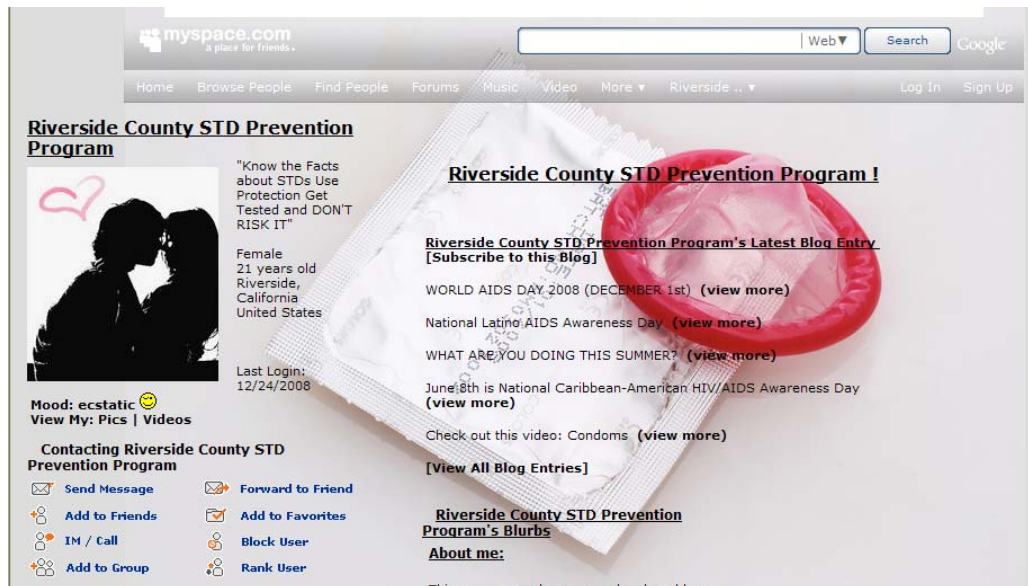
Staffing and maintaining contact within the virtual community require time and manpower. E-mail must be read and responded to, and images and information should be

updated on a regular basis. These tasks require time and staffing. If a staff member cannot check the organizations SNS profile daily, then that should be noted in the profile in addition to a time frame when messages will be responded to, e.g., messages will be returned within 48 hours.

Each agency or program must determine if using an online social network is the best use of funds and staff time.

### 5.1.5 Examples

Several health departments have ventured onto the social networking scene. The Riverside County (California) Health Department created an STD Prevention page on MySpace (see below) in 2006. The page offers information on STDs, contact information for the health department, and links to and information about a variety of resources. The profile is checked approximately once a week; more often if an event or health fair has occurred. On average, the profile receives about 15-20 visits a week; or more after community events. (F. Odubela , personal communication, October 16, 2008).



Retrieved from [www.myspace.com/stdprevention](http://www.myspace.com/stdprevention) on December 29, 2008

The CDC has also ventured into the world of SNS. The division of e-Health Marketing at the CDC created both MySpace and Facebook profiles to provide information on different health related topics. ([http://www.myspace.com/cdc\\_ehealth](http://www.myspace.com/cdc_ehealth))



Retrieved from [www.myspace.com/cdc\\_ehealth](http://www.myspace.com/cdc_ehealth) on December 29, 2008

Both users and other entities have created groups to raise awareness about sexual health issues on these, and other social networking sites.



Retrieved from [www.facebook.com](http://www.facebook.com) on August 28, 2009

## 5.2 Video games

### 5.2.1 Description

A video game is an electronic game that requires a player to interact with a controller to generate feedback on a video screen. Video games can be played on many devices such as computers, arcade consoles, home television sets (such as Wii, Playstation, and Xbox), handheld game machines (such as the PSP) and mobile phones.

The types of electronic or online games that can be played range from “casual” games such as Scrabble or Sudoku, to role playing games (RPG), where users take on the identity of characters or avatars, to “serious” games, which are usually educational or political in nature. Video games can also be played by individuals or large groups of players. A massively-multiplayer online role-playing game (MMORPG) is a type of online RPG in which a large number of players interact with one another in a virtual, persistent world. In RPGs, players create and assume the role of an avatar, a virtual representation of oneself, although the avatar does not have to be an accurate representation of the user. MMORPGs are distinguished from single-player or small multi-player RPGs by the large number of players and the game’s persistent world, that is, the game continues to exist and be played even when some players are away from the game.

Gaming has also garnered the attention of the marketing industry. According to research from Nielsen, in-game ads, such as a billboard on the side of the road of a driving game, can help increase brand recognition by 64%, brand rating by 37% and can boost purchase consideration by as much as 41%.<sup>23</sup> Expenditures for in-game advertising is expected to reach \$1.94 billion worldwide by 2011, with the US spending \$696 million of the 2011 total.<sup>24</sup> Because of the increasingly social nature of online gaming, the rise in the popularity of RPGs, and evidence that in-game ads can have a significant influence on gamers, gaming has become a new frontier for health communication.

### **5.2.2 Who is playing video games?**

In North America alone, 40% of households have a video game console.<sup>25</sup> Approximately 53% of American adults<sup>26</sup> and 97% of American teens play video games,<sup>27</sup> according to the Pew Internet & American Life Project. Among adult players, younger adults (18 – 29 years) are far more likely than older adults to play games, and men (55%) are slightly more likely than women (50%) to play games. Blacks and Latinos are significantly more likely than their white counterparts to play video games on portable devices like mobile phones and hand held gaming units.<sup>26</sup>

As already mentioned, nearly all U.S. teens play video games and most are playing a variety of different games. The 5 most popular game genres are: racing, puzzles, sports, action and adventure. However, game preferences do vary by gender as well as age. Girls tend to be more interested in puzzle, racing and rhythm games while boys prefer action, sports and first-person shooter games. In terms of age, younger teens (12 - 14 years) play video games more frequently than older teens (15 – 17 years).<sup>27</sup>

### **5.2.3 How it can be used for STD/HIV Prevention**

The use of video games as a vehicle for health improvement or promotion is a field that is still very much in its infancy. This genre of games, sometimes referred to as “games for health” or “serious games,” explores ways in which video and computer games can be used to improve health and health outcomes. As of yet, there have been few games developed specifically for STD/HIV prevention and awareness. However, there have been a few games, although not STD/HIV related, that have shown demonstrable results in regards to health related outcomes. For example, HopeLab, a non-profit organization ([www.hopelab.org](http://www.hopelab.org)) created a 3-D, shooter video game for adolescents and

young adults with cancer called Re-Mission. The game takes place in the bodies of young patients with different kinds of cancers and the players assume the role of a nanobot named Roxxi. The objective of the game is to destroy cancer cells and bacterial infections while managing the realistic side effects associated with cancer. A randomized controlled research study evaluating the efficacy of Re-Mission found that participants who played the game had improved treatment adherence and increased self-efficacy & cancer-related knowledge.<sup>28</sup>

Video games could be used to increase health-related knowledge and skills among the general public and health professionals in the areas of prevention, adherence, self-care, disease management, health decision-making, clinical care, and emergency response.

## 5.2.4 Logistics and Issues to be considered

Creating and developing a game is an incredibly time consuming and expensive endeavor, therefore, public health groups should probably look to collaborate with game developers to enhance or modify existing games, rather than attempt to develop a game themselves.

## 5.2.5 Examples

### 5.2.5.1 Catch the Sperm

Catch the Sperm, and its most recent rendition, Catch the Sperm 2, was developed by Sweden's Phenomedia for the Swiss Federal Office of Public Health's STOP AIDS Campaign. The game can be played on a computer or mobile telephone and was designed with open source software so that it could be distributed for free internationally. The player shoots a condom gun at oncoming sperm and viruses. The purpose of the game is to raise awareness about the risks of engaging in unprotected sex.<sup>29</sup> The game can be downloaded for free from <http://www.softpedia.com/get/Others/Home-Education/Catch-the-Sperm.shtml>



Screen shot retrieved on November 19, 2008 from [http://www.fileplanet.com/59022/50000/fileinfo/Catch-the-Sperm-2-\(Free-Game\)](http://www.fileplanet.com/59022/50000/fileinfo/Catch-the-Sperm-2-(Free-Game)).

### 5.2.5.2 CDC in Second Life

In 2006, the CDC entered Second Life and created the avatar, Hygeia Philo. Within this metaverse, the CDC is able to offer interactive health information and engaging promotional items to the “residents” of Second Life. The CDC site/island in Second Life also offers links to CDC websites, free podcast downloads, real-life public health updates and access to CDC-developed virtual spaces, such as virtual meeting spaces & laboratories. To access the CDC island in Second Life, visit coordinate 191,86,21.



Screen shot of the virtual CDC campus, 2008.



Screen shoot of CDC avatar, Hygeia Philo, in Second Life, 2008.

### 5.2.5.3 American Cancer Society in Second Life

In 2005, The American Cancer Society<sup>®</sup> held its first-ever virtual Relay for Life<sup>®</sup> in conjunction with their annual fundraiser. Taking place in the virtual world of Second Life, avatars of the participants in the Relay for Life took part in a cyberspace walk-a-thon around a virtual 96-acre park. The event was considered a success with a few hundred avatars participating, raising almost \$5,000 for the American Cancer Society<sup>®</sup>. The virtual event has been held every year since then. In 2007, the event raised more than \$118,000 and attracted more than 1,700 avatar participants.<sup>30</sup>



Screen shot retrieved September 2, 2008 from [http://www.cancer.org/docroot/GI/content/GI\\_1\\_8\\_Second\\_Life\\_Relay.asp](http://www.cancer.org/docroot/GI/content/GI_1_8_Second_Life_Relay.asp)

### 5.2.5.4 CDC in Whyville

Whyville.net is an online, educational, virtual world for boys and girls, ages 8 to 15 years. In this virtual world, Whyville citizens or “whyvillians” can socialize with one another and participate in educational activities and games that allow them to earn “clams”, the in-world currency, to purchase virtual products.

In 2006-2007, the developers of Whyville and the CDC collaborated to create a virtual campaign to raise awareness about the flu vaccine. During the virtual campaign, a “Why-Flu” was released into Whyville. If a Whyville citizen caught the virtual flu, red spots would appear on their avatar’s face and sneezes would interrupt their chatting. However, citizens could be virtually vaccinated at an in-world, CDC clinic. During the six-week activity, almost 20,000 unique Whyvillians were vaccinated.

The campaign was replicated again in 2007-2008; this time additionally targeting grandparents. Whyvillians who were virtually vaccinated were encouraged to send an invitation to their grandparents inviting them in-world to be virtually vaccinated. During the 6 week campaign, more than 40,000 unique Whyville users and 1800 of their grandparents were virtually vaccinated.<sup>31</sup>



Screen shot of Whyville, courtesy of CDC, 2008.

## 6. Mobile Phones

### 6.1 Description

The term “mobile devices” refers to portable communication technologies such as cell phones, personal digital assistants (PDAs) and “smart phones”, devices that combine the functionalities of cell phones with those of PDAs, e.g., the Apple iPhone. Mobile

phones are ubiquitous in today's world because of their portability, affordability and capacity to provide instantaneous communication regardless of geographic boundaries. The sophistication of mobile devices is continually growing, allowing users to do more than just talk. One of the most popular features of cell phones is the ability to send text messages. Mobile-phone users can also now access the Internet, take pictures, play video games, and record and watch videos.

## **6.2 Who is using mobile phones?**

In a word, everyone is using cell phones. Nearly nine out of every ten adults in the U.S. have a wireless phone,<sup>32</sup> as do 71% of teens<sup>33</sup> and 46% of 8-12 year olds.<sup>34</sup> In fact, according to a study conducted by the Nielsen company, on average, kids get their first cell phone between the ages of 10 and 11.<sup>34</sup> Furthermore, federal government statistics indicate that the number of wireless-only households, those homes without a telephone landline, has been steadily increasing since 2003. In 2008, more than one out of every 5 American households had only wireless telephones.<sup>35</sup> That equates to about 41 million adults (~18.4% of all adults) and nearly 14 million children (~18.7%) living in households without a landline but with a wireless phone. There are also some notable demographic differences among wireless households. Adults living in or near poverty are more likely to be living in a wireless household as are adults living in the South and the Midwest, in addition to Hispanic and Black adults. Younger adults are more likely to live in wireless households as are men.

Texting remains a popular feature on mobile phones among young and old alike although text messaging is more common among youth than older users.<sup>14</sup> Mobile phones are also being used to connect to the internet. Thirty two percent of all Americans have gotten online via a mobile phone.<sup>36</sup>

Mobile users are even using their phones for dating and sex seeking. In the U.S., 3.6 million users accessed a dating service from their mobile devices<sup>37</sup> and online dating sites are now offering mobile features, such as accessing profiles and sending messages to potential matches from their phone. Moreover, "sexting" or the sending of sexually explicit language and/or photos via a mobile phone has gained recent media attention largely due to a study that found 39% of teens and 59% of young adults reported having sent a sexually suggestive message electronically, including mobile phones.<sup>38</sup>

Mobile devices can also be used to connect to chat lines. Chat lines are fee-based, phone services that connect callers with others for the purposes of conversation, dating, or sex. Unlike the Internet, there is little published literature on chat lines; however there is some evidence to indicate that at-risk and/or high risk populations are using chat lines for sex seeking.<sup>39</sup> For example, three percent (3/116) of primary and secondary syphilis cases interviewed in Washington, DC in 2006 admitted to using chat lines to meet sexual partners. That number increased to 7% (13/178) in 2007. (Unpublished surveillance data for Washington, D.C., B. Furness, personal communication, September 3, 2009).

## **6.3 How it can be used for STD/HIV Prevention**

Mobile devices have great potential for STD/HIV prevention. They can be used to disseminate health information and resources, provide psychological and social support,

and can help patients monitor their own health by improving access to personal health information and for specific tasks like reminders for medication adherence. Mobile devices can serve as a system for streamlining clinic services by providing patients with testing results or reminding them about upcoming appointments. They can assist in medical diagnoses, and aid in data collection. Mobile phones have already been shown, in specific instances, to aid physicians in STD diagnoses<sup>40</sup> and have inadvertently been used for STD partner notification.<sup>41</sup>

### **Cell phone use**

“There are notable numbers of cell phone owners who know about and want access to the new applications that are being installed in cell phones – Internet browsing (especially for maps and directions), music playing, gaming, photo sharing, video watching, and, of course, instant messaging and texting. As we look into the future, it is possible to see how the cell phone might become the Swiss Army knife of media and communications for a considerable number of users.”

Rainie, L. & Keeter, S. (2006, April). Pew Internet Project Data Memo RE: Cell phone use. Retrieved from [http://www.pewinternet.org/pdfs/PIP\\_Cell\\_phone\\_study.pdf](http://www.pewinternet.org/pdfs/PIP_Cell_phone_study.pdf)

A 2001 letter to the editor of the *Journal of Sexually Transmitted Infections* described a clinic patient presenting for STD testing at a health clinic due to a text message sent to him from his girlfriend. The text message included the woman’s clinic number and a diagnosis of Trichomoniasis and, as a result, the man was successfully treated. The authors posit that mobile phones and text messaging should be considered for partner notification.<sup>41</sup>

In 2005, another letter to the editor of the same journal reported an instance where a patient used the video and camera features on his cell phone to take pictures of lesions on his penis, which aided physicians in diagnosing the patient with genital herpes.<sup>40</sup>

Mobile phones are also proving to be a useful means of data collection in the field, particularly in rural areas and developing countries, as a result of its portability and increased accessibility. Anecdotally, the use of cell phones has helped to decrease overcrowding at rural clinics and overcome a lack of infrastructure by allowing health care providers to monitor patient information in the field.

Researchers in South Africa have found cell phone technology to be a cost-effective, user-friendly way for health care workers in the field to provide care to their HIV/AIDS patients. The non-governmental organization, Cell Life, designed a cell phone menu that allows the health care workers to capture relevant HIV data such as medication adherence and medication response. These data are then relayed to a central database. The manager of the database can also respond to field workers’ questions and/or provide them with relevant information.<sup>42</sup>

Similarly, in Rwanda, an information technology system called TRACnet was developed and is used for the purpose of collecting, storing and disseminating critical health information in addition to managing the care of HIV/AIDS patients and the

distribution of medication. TRACnet has allowed for the dissolution of cumbersome paper –based systems and allows health care providers to monitor data in real time.<sup>43</sup>

Mobile video has great potential for STD/HIV prevention. Research shows that there are 8 million mobile video viewers in the United States.<sup>44</sup> Informational videos could be created for clinic visits, STD pictures could be provided by patients or providers, public service announcements could be distributed, and weekly mini soap operas could be developed specifically for mobile devices with video capability.

It is important to realize that information can travel both ways; programs can not only send information to patients, but patients may also send information back. Patients may send photographs of a sore or symptom, or in the event of partner notification or other emergency situation, may even send photographs of contacts, to the health department. When using mobile phones for prevention, keep in mind that people often like to interact and communicate rather than simply receive information.

## **6.4 Logistics and Issues to Consider**

Mobile applications are still relatively new to public health. Few programs have utilized mobile technologies; however, with the worldwide adoption of mobile devices, it is worth exploring mobile application in public health.

As with any technology, however promising, there are limitations and logistics to be considered. Most important is the issue of privacy and confidentiality. Mobile phones, and the information contained within, can easily be used by others. Additionally, the faces of many phones are open, thereby allowing others besides the intended recipient to see and read such things as text messages. Further away, the text messages sent and received from a given phone are often stored for up to six months on servers owned by the mobile phone service thus, however unlikely, it is possible that a third party can view text messages sent by a health department to a client. It is therefore important to obtain the user's permission to send text messages.

Another logistical point to consider is the up-front footwork and set-up for a mobile based program. Organizations need to hire knowledgeable staff or consultants to create and maintain these types of programs as well as consider the immediate and long term financial costs.

And lastly, is the issue of actual mobile phone limitations. For example, most text messages are limited to 160 characters, including spaces, so it can be a challenge to get a detailed message or adequate information into the allotted space. Or the target audience may not have phones with access to the Internet or that are equipped to play videos so these types of prevention efforts may not reach those they are created for.

## **6.5 Examples**

### **6.5.1 SexINFO**

SexINFO is a cell phone sexual-health text-messaging project developed in response to the rising rates of Chlamydia and gonorrhea, specifically among San Francisco's

African-American youth. It is a collaboration of ISIS and the SFDPH, STD Prevention and Control Branch and is based on a similar project out of the UK by the Brook Center ([www.brook.org.uk](http://www.brook.org.uk)).

The program works entirely through cell phone text messages. When a user texts the five-digit number (36617) or Metro PCS users text 917-957-4280, they are instantly “texted” back with 11 different options, including, “Text D4 to find out about HIV,” “Text B2 if u think ur pregnant,” and “F10 if someone’s hurting you.” (The full script can be found at the companion website—<http://www.sextextsf.org>.) Additionally, users can text personal questions that can be answered individually via the Internet by trained staff.

An evaluation of the project found consistent, positive-associations demographic-risk factors for STIs and campaign awareness, specifically among African-American youth, youth living in target neighborhoods, youth aged 12-18 years, those without college education, and those with the least expensive cell phone provider (MetroPCS)<sup>45</sup>.

### **6.5.2. The Internet and STD Center of Excellence**

The Denver-based Internet and STD Center of Excellence (COE) has developed and is piloting two, opt-in text-messaging programs for STD clinic patients. The first seeks to increase the number of patients receiving their test results. Patients who test positive for chlamydia or gonorrhea but who have not called the clinic to receive their results within seven days are sent a text message urging them to call the health department. The second texting project is aimed at increasing the number of patients with positive Chlamydia or gonorrhea tests to return to the clinic 3 months later for rescreening, per the CDC STD Treatment Guidelines.

The COE conducted focus groups to determine what information would be acceptable to send via a text messages. Based on user feedback as well as regulatory mandates regarding privacy, the following message is sent to patients who have opted to receive a text-message reminder, “Please call Denver Health for an important health message at xxx-xxx-xxxx from 1:00pm to 3:00pm M-F.” Launched in the fall of 2007, results have been positive thus far, but data are still being collected and analyzed.

## **7. Summary**

Health communication is an integral part of any prevention program. It increases knowledge, raises awareness, disseminates information and resources, and promotes desired behaviors. With the advent of current technologies, the target population -- and arguably, the general public as a whole -- desires and expect health information to be available and accessible on all mediums. To effectively reach our audiences, it is important that the field of public health incorporate new technologies into health communication activities.

Successful communication programs and campaigns will incorporate an array of tools in order to expand its reach and cast a wider net. Clearly establishing goals, objectives

and evaluation components at the inception of a health communication program or campaign will help determine how best to incorporate the Internet and other technologies into health communication activities.

While the various websites and communication platforms covered in this document are popular and in wide use today, it is important to acknowledge that trends and technologies will certainly change. The arrival of new, currently unknown, technologies can be expected as can the use of these new media by our target populations. As such, it is important that public health professionals stay aware of, even track, how our target populations are using the various technologies and continually strive to meet them where they are. At a minimum, a periodic assessment of how your target audiences use electronic media is suggested.

The field of sexual health and STD/HIV prevention is undoubtedly up to the task. The field has proven time and time again that they are quick to identify, acknowledge and adapt to our changing world. This will certainly continue to be the case in the future.

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## **Appendix A**

### Types of Evaluations

There are several types of evaluation: formative, process, outcome, and impact, but process and outcome evaluations are conducted most often.

#### **Formative Evaluation**

A formative evaluation “ensures that a program or program activity is feasible, appropriate, and acceptable before it is fully implemented. It is usually conducted when a new program or activity is being developed or when an existing one is being adapted or modified.”<sup>3</sup> For example, if a health department wanted to raise awareness about a syphilis-testing event among online, sex-seeking men who have sex with men (MSM) through the use of banner ads, a formative evaluation could help the health department develop health messages for the intended audience and assist in determining the appropriate websites for distribution, associated costs, and a tentative timeframe.

#### **Process Evaluation**

A process/implementation evaluation “determines whether program activities have been implemented as intended.”<sup>3</sup> A process evaluation takes place during implementation and helps a program determine if the message is being disseminated as planned to the intended audience and if it is eliciting the desired response or call to action.<sup>1</sup> Following the example started above, a process evaluation would determine if a banner ad was being displayed as planned; including the time of day the banner ad was displayed, how many views and click throughs, it received, and if the message was reaching the targeted audience.

#### **Outcome Evaluation**

An outcome/effectiveness evaluation “measures program effects in the target population by assessing the progress in the outcomes or outcome objectives that the program is to achieve.”<sup>3</sup> Outcome evaluations would determine how many MSM showed up to be tested for syphilis as a result of the banner ads. It would also identify the number of positive syphilis cases as a result of the testing, how many cases were linked to services, and how many cases were successfully treated.

#### **Impact Evaluation**

An impact evaluation “assesses program effectiveness in achieving its ultimate goals”<sup>3</sup> such as changes in morbidity, mortality, or other general indicators of health status among the target population. Following our example, an impact evaluation would determine if the overall syphilis morbidity decreased and/or syphilis awareness increased among online MSM as a result of the Internet campaign.

## Logic Models

One of the first steps to creating a HC campaign is the development of a logic model. Logic models are an effective way of clearly outlining the steps and desired outcomes of a program. Logic models are also useful tools for evaluation efforts. Following are examples of logic models.

**Logic Model Template**

Goal/Situation:

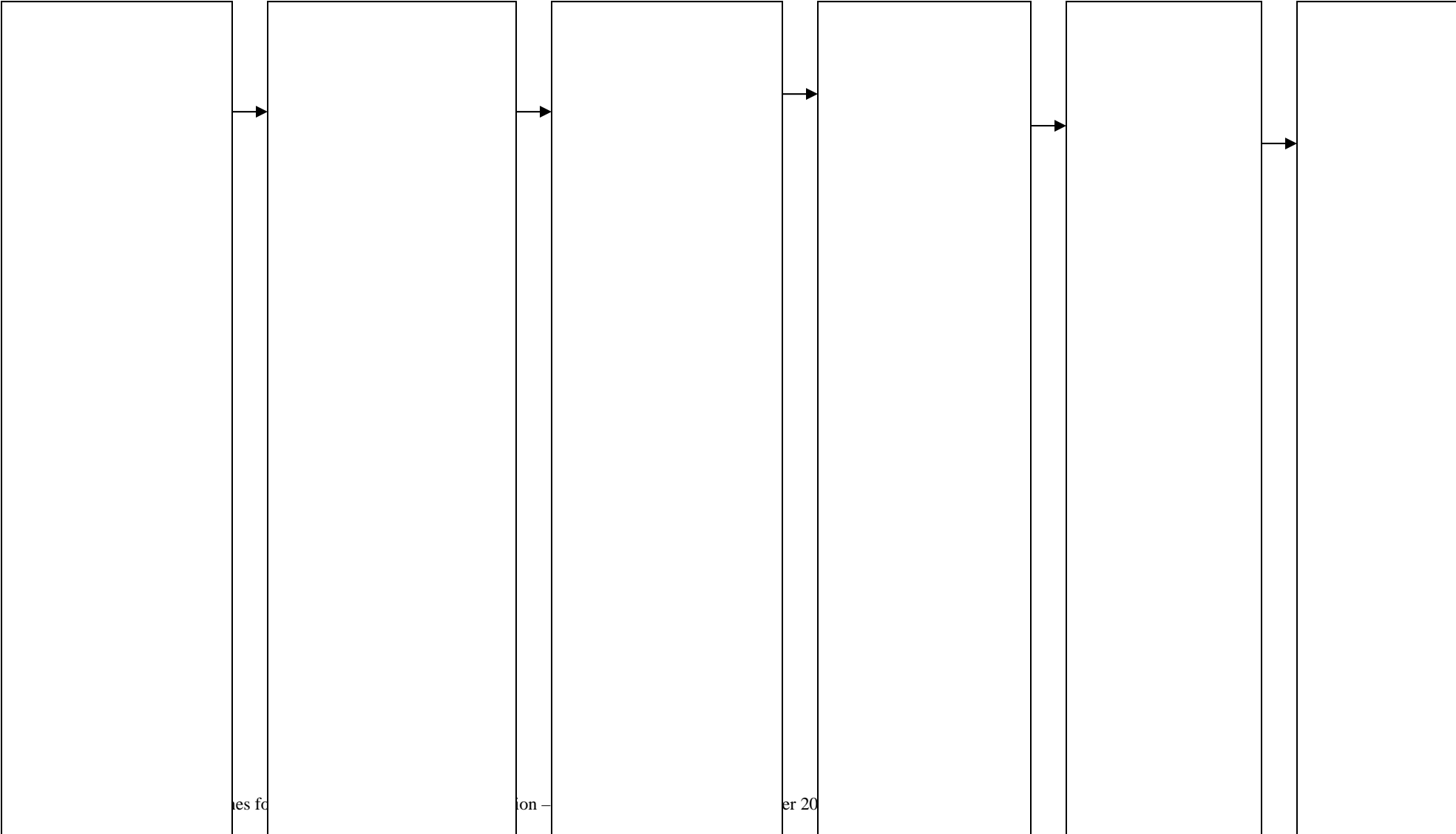
**Inputs**

**Activities**

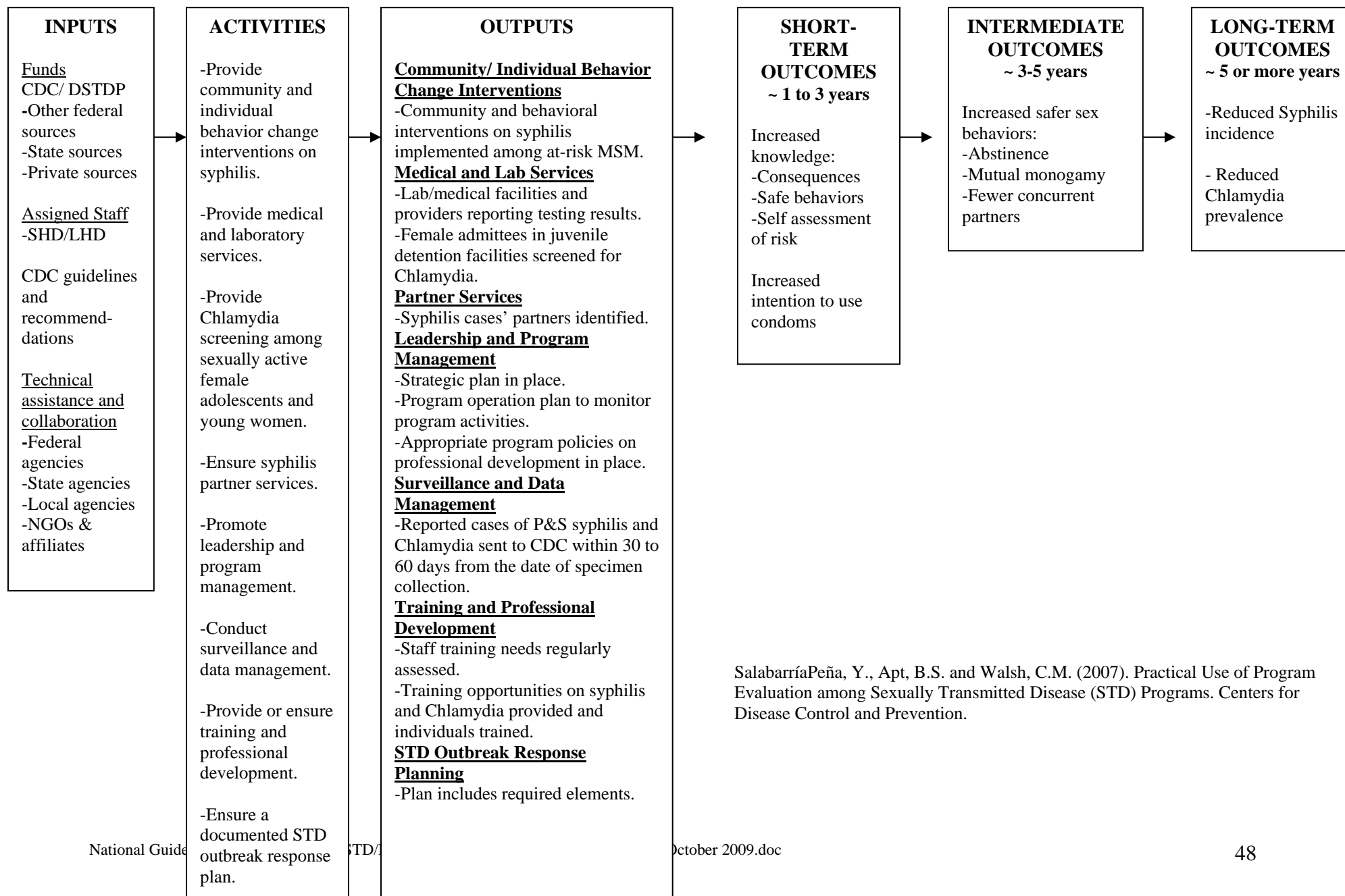
**Outputs**

----- **Outcomes** -----  
**Short**      **Intermediate**

**Long**



## Logic Model for State X Comprehensive STD Prevention Systems (CSPS) Program



## **Appendix B**

### Creating a Website

#### **Setting Goals**

To build an effective website, clear and practical goals must be established. These goals should be based on what your agency is trying to accomplish. It is easy to get excited about all the information that a website can provide or about the many features and technologies that are available but advanced features and flashy designs may not help your agency reach the program's goal. Clear goals should define your target audience. Knowing your target audience will help to shape how you will develop the site. For example, if your agency is working on a syphilis outbreak among MSM, you should develop a website that is specifically targeted for MSM or for health-care providers that serve MSM. A website focused on MSM should contain images and use language that is meaningful to that community.

#### **Domain Name**

When creating a website the first practical step is to come up with a Uniform Resource Locator (URL), also known as a domain. Domain names may be purchased from several locations on the Internet. Websites such as GoDaddy.com and NetworkSolutions.com can provide domain registration and website hosting at low costs. If you engage a development team, your vendor may be able to provide you with your domain name and webhosting.

In selecting a domain name, it is important to consider the impression that the name will have on the target audience. Website users may evaluate the credibility of your site in part, based on the domain name you have selected.

Extensions such as .com, .org, .gov, or .info are part of the domain name you will choose. Each extension is an abbreviation of a phrase indicating a particular type of website. The most common extensions include: .com for a commercial website, .org for organizations, .edu for educational institutions, and .gov for websites representing government agencies. The extension that best represents your program or agency should be chosen. Most agencies or programs will choose .org, and states and federal programs may choose .gov. It is important to remember that the extension is part of the domain name, for example: cdc.gov is a different domain than cdc.com.

#### **Hosting a Website**

Web pages must be hosted on a server that is connected to the Internet to be part of the World Wide Web. Usually your webhost will manage your server software, settings, and site backup.

## **Hosting Options**

### **Agency/In-house**

If your agency currently has a server that hosts a website, hosting another website on the same server may be your most cost-effective option. Talk to your agency's Information Technology (IT) staff and explore web hosting possibilities with them. The terms "service level agreement" and "software requirement" are often used when working with IT staff. These documents will describe what the technical group will do and what time frame you can expect

A working relationship with IT staff is critical to the success of any web project. When creating websites, the possibilities are limited only by your imagination and budget, but having an IT staff that is willing to find a 'work around' for challenging issues and that has an investment in the success of the project is key to the overall success of the development process.

### **Educational Institutions**

If you work with or are affiliated with a college or university, it may be possible for you to obtain free or low cost server space to host your website. Universities generally provide server space to all students and faculty. If you work with university IT staff, it is likely that they will be members of your target audience and you will get better results if you can get them involved in your project.

Even if you have no association with an educational institution, it might be possible to obtain website design help from a college, university, or technical school. A professor teaching web design might be willing to use your site as a design project in class or a competition in the department.

### **Internet Service Provider**

Most Internet Service Providers (ISP) such as Comcast, Verizon, or Qwest, that provide access to the Internet may also provide space on a web server as part of their Internet package. If you are planning a simple website such as a listing of STD Clinics, locations, services provided, hours, fees, and contact information, you may be able to house an information only website on your ISP. Be aware that the amount of space offered is usually limited and may require banners ads that are placed on the site by the ISP. Many ISPs will also offer products to create websites from a template and provide a step by step process for creating a basic website.

### **Decision Tree: In-house versus Contractor**

The following questions need to be addressed:

- Are there restrictions that require all web development to be done in-house? If not, are there restrictions regarding vendors, sole sourcing, etc. that need to be considered before you send out a bid to contractors?
- Is it better to have the authority of a government agency behind your content (medical experts, etc.)? Or are you building a community-oriented site where acceptance by target audience is more important than medical authority?
- Will there be information exchange and/or any potential privacy issues? If yes, working in-house on the government server is likely to be the more secure environment.
- Does the firewall at your agency prohibit certain software or block access to or from particular sites? If yes, there may be workarounds, but it might be simpler to host the site through an external web host.
- Is there a standard look and feel to all of the current content on your server? Are you required to conform to the same look and feel? Does that look and feel meet the needs of your target audience?
- If there is no standard look and feel, are there in-house designers who can create something that will appeal to your target audience? If no, will your IT staff be willing and able to build a site designed by a sub-contractor?
- Will the timeline for your IT department match the timeline for your project?
- Is the in-house IT staff accessible to your department for updates, changes, re-designs, maintenance, etc. on a regular basis after the site is launched?
- Will you need to conduct focus groups? If so, does your staff have the expertise to conduct focus groups, develop content, oversee design and navigation, conduct beta- and usability testing, and perform the maintenance of the site?
- If you have limited staff resources, consider a firm or organization that has expertise in sexual health issues, or that can hire a health educator to assist with content development and delivery.
- Is there funding available (and adequate vendors) to contract all services out? If not, consider what skills you have available in-house. (Costs include, but are not limited to; design, engineering, market research, content development, web hosting, and social marketing).
- Before beginning any work on a website, spend time surfing on the Web to examine the competitive landscape and to find sites that have navigation and designs that you like. Write down the name and any contact information about the designers of the site, and keep track of the sites to show to any designers you may contract with.

- Work closely with the developers to create content that is appropriate to your target audience. Allow contractors to translate your content to be web-friendly.
- Whether you work in-house or contract out, conduct extensive quality assurance and usability testing with your target audience before launching the site.

### **Creating a well designed website**

User-centered design is based on a set of usability principles developed from research into how people use websites. The focus of user-centered design is on how the user will experience the website. Ideally, websites should be rigorously tested for usability. Testing will ensure that users are able to find information and complete tasks easily and efficiently. Site designs should be revised and retested as needed to ensure user satisfaction. Even if funding will not allow full usability testing, it is valuable to think of the development of a website from a user-centered perspective and incorporate usability principles. For more information on usability see the Health and Human Services (HHS) “Research-Based Web Design and Usability Guidelines” at <http://usability.gov/pdfs/guidelines.html> and “Usability Basics” at <http://usability.gov/basics/index.html>.

### **Defining target audience**

In the goal you established for your website you should have identified a target audience. That audience is the users for whom you will design your website. To begin, you need to collect and identify all the information you can about that target audience. How old are they? What are their education levels and/or reading levels? Are they web novices or experienced web users? How fast is their Internet connection? Usability practice suggests that you create one or more personae to represent your audience.

A persona is a description of a person who represents a segment of your audience. Often it includes a picture. Working with a persona allows you to think more clearly about how a user will approach your web site. For example, say you have decided to make a web site to provide information on local outbreaks to health care providers. Here is a sample persona you might use.

## Persona Example



Dr. Samuel Miller is a 50 year old dermatologist in private practice. He also consults at the local public hospital. His urban practice includes many MSM who have insurance. Dr. Miller is conscientious about staying up to date in his field and sets aside an hour every night to read medical journals. Dr. Miller wears reading glasses.

Dr. Miller has a new computer in his office with a high speed Internet connection. He uses it primarily for email but at a colleague's recommendation, he recently completed an online training. He printed out many of the pages for future reference. He also has a computer with a slow DSL connection at home that his wife bought to keep in touch with their son who is in college in another state. Dr. Miller used it recently to make airline reservation for his vacation but he checked his credit card statement carefully for two months afterward to make sure he had not suffered from identity theft.

So how would you use this persona to develop your web site? For Doctor Miller, you want to avoid small fonts and provide pages that print so he can take them home to read. He is relatively inexperienced with the web so you might want to consider using terms from other sources such as medical journals. He would know what a table of contents was but possibly misunderstand main menu. You might want to consider using an email notification when you add new updates to your site. Since Dr Miller has high speed connections and new equipment, he can probably access large files if need be but you would want to provide him with clear instructions about how to download files or install any required plug-ins.

## Content

The most important consideration when creating a website is the content. A website will be successful only if the content is useful to the target audience. It is necessary to plan for the layout and structure of the site's content prior to designing the web pages. Content on a website should try to be unique or organized in a way that distinguishes it from other websites with similar information.

When developing content, your perspective should be that of those you are attempting to reach through the site. Would your target audience find the information on your website that he/she needs? What necessary content is missing? What questions would your audience have after reading the website? Can additional content be provided to answer these questions? If funding permits, focus group testing may answer many of these questions. If funding is limited, the website creator should consult with peers, co-workers, family members, or others familiar with the target audience to get their input on these questions.

Much of the content on your website will be unique and generated by you or the development team, but keep in mind that there are fact sheets available on many topics (e.g., fact sheet on an STD for a general audience), and they are readily available through the

Internet. Not all content on the internet is free; avoid copyright issues by obtaining permission to reproduce content when required.

A source for website content can come from the website creator's agency. In some cases the material can be used as is. However, it may be necessary to rewrite the information for the target audience.

Creating new content for a website can be time consuming. Writing well for a target audience at an appropriate reading level is a specialty that takes time to master. If the website budget permits, hiring a contractor to write for the website can be a good investment. Provide the contractor with the necessary information to include on the website and as much information as possible about the target audience. Ask for samples of the contractor's work for similar audiences to ensure that he or she can provide the necessary content.

For more information on writing for the Internet please refer to [http://www.usa.gov/webcontent/managing\\_content/writing\\_and\\_editing.shtml](http://www.usa.gov/webcontent/managing_content/writing_and_editing.shtml).

Writing for health-care providers may be an exception to the general rules of Internet writing. Medical writing has its own conventions and following those conventions increases credibility with health-care providers. Collaboration with a physician or someone very familiar with the medical field may be necessary to develop a website for this target audience. The website creator might be able to provide an easily scanned summary of medical information that follows the rules of web writing; however, it may also be necessary to provide the complete medical article with footnotes and a bibliography to satisfy this target audience. For complex content on a website, it is also a good idea to provide a printable version.

## **Clearance**

Develop a clearance process within the agency for any information that is included on the website. An effective clearance process ensures that the information provided is accurate and appropriate to the agency's mission. Consistently accurate information is the foundation of credibility for a website. Even in an urgent outbreak situation when it is necessary to distribute information quickly, it is important to follow the established clearance process. Accurate information at noon is more valuable than incorrect information posted on a website three hours earlier. Document website-content clearance with a form or with an agreed upon e-mail chain and save all documentation. The clearance process should include someone in agency management who is in a position to evaluate the impact of the web content on the agency's mission. Hyperlinks to content on other sites should also be cleared for accuracy, and the site should be reviewed to ensure the link does not appear to be endorsing a commercial product or an inappropriate point of view. Government sites often use a link disclaimer, like the following, when linking to non-government sites.

Non-CDC Link Disclaimer: Links to non-Federal organizations found at this site are provided solely as a service to our users. These links do not constitute an endorsement of these organizations or their programs by the CDC or the Federal Government, and none

should be inferred. The CDC is not responsible for the content of the individual organization web pages found at these links. From <http://www.cdc.gov/std/hpv/default.htm>

Even with a disclaimer, a hyperlink suggests that content on the linked website is worthwhile. Therefore, it is important to ensure that an excellent explanation about proper condom usage does not appear next to an inappropriate advertisement.

## **Organizing content-Navigation**

Content on a website is organized by menus. Menus on a website form a system of navigation, a way to move from one page to another. Menus that appear on every page of a website are called persistent navigation. Persistent navigation should appear in the same place on every page in your website so that web visitors can learn how to go from page to page. The words used in your menus and persistent navigation should match what your web visitor will see when he/she clicks and opens the page. For example, if you have a menu item “STD Clinics,” the web visitor should see STD Clinics at the top of the page when they click that link.

As you organize your content, think about the tasks a web visitor will want to complete on your website and look at how easy (or hard) it would be to complete these tasks. For example; how many clicks will it take to find STD Clinic hours or information on a new outbreak? The most important information and links to the most frequently used material should be featured most prominently on the page.

## **Testing**

Testing your website with members of your target audience before it goes live can increase the site’s effectiveness but can be expensive and time consuming. If your budget and time frame allow, testing can help to ensure the overall success of your site. Extensive Testing is particularly important if you are trying to encourage a behavioral change in your target audience. There are many types of testing you might use to improve your site.

- **Focus Group Testing** – Early in the development of your site, you might use focus groups to explore your audience’s current understanding of a topic, to discover what language they use about it, and how they respond to different ways of presenting information.
- **Formal Usability Testing** – In a formal usability test, members of your target audience are asked questions about their impressions of the website and then asked to complete specific tasks on the site, talking aloud about the process as he/she completes the task. After completing the tasks, the participant is again asked their opinion of the website. Test results measure successful completion of tasks and how long it takes to complete tasks, as well as user satisfaction.

Usability testing allows you to see what your web visitors will actually do so you can modify the site to overcome any unanticipated difficulties they experience.

The number of participants that are enlisted for a usability study ranges from 5 – 30 and is based on your budget, the complexity of the site, and target audience's level of expertise.

- **Online testing/surveys** – Before you begin to market the website, conducting online testing and/or surveys to get feedback on effectiveness will help to ensure that the product is ready for a full-scale release. This can be a less expensive way to do usability testing. Software is available that allows visitors to view the web page and answer questions about it in a separate section of the page and records time elapsed and users' movements around the site. Alternatively, survey software can ask more general questions about the site. After the site is launched, occasional user surveys can help to determine your audiences' changing needs.
- **Informal Testing** – If the budget does not permit formal testing, you can still do a great deal to improve your site with informal testing with family, friends, and co-workers. Select people as close to your target audience as possible and ask them to help you figure out if the site works. Ask the kinds of questions described in the methods above and listen carefully. It is very important not to become defensive because it will shut down the feedback.

## Marketing the website

Launching a website is the first step toward the success of your program. Once launched, you must market the site to increase traffic and reach your target audience. If your website is part of a campaign, it is useful to mention the site address in printed materials, posters, and radio and TV spots. In an outbreak situation, it might be possible to get TV stations to mention your address for more information or to include it on the TV stations' websites. You can also request that sites that serve a similar audience link to your site. You might distribute a simple flyer with your web address and a brief outline of what's available on your site at STD clinics. E-mail announcements can be an effective marketing tool with some audiences. For example, if your site targets physicians, local medical associations or insurance organizations might be willing to include information about your site in e-mails to their members.

It is easier to promote the website if you have a simple, easy to remember domain name, the shorter the better. For example, the CDC STD site used to use the web address <http://www.cdc.gov/nchstp/dstd/dstdp.html>. To simplify promotion of the site, the address was changed to <http://www.cdc.gov/std/>. If it is not possible to use a simple address, it might be possible to set up an alias that is simple. Talk to your server administrators to see if an alias can be set up.

**Search Engine Marketing** – In Internet marketing, search-engine marketing (or Search Marketing) is a variety of methods used to increase the visibility of a website. Your website can be enhanced to be more visible to search engines and increase your rating in the search results. Search-Engine Optimization is the process of choosing targeted keyword phrases that are related to your site to help ensure that the site shows up in search results. Optimization involves making pages readable to search engines and emphasizing key topics related to your content. Basic optimization may involve nothing more than ensuring that a site does not unnecessarily become part of the invisible Web (the portion of the Web not accessible through Web search engines). Advanced optimization may include significant research into every element of page design, site structure, and off-the-page criteria.

Before pages can be optimized, research must be done to determine which keywords to target. This involves finding relevant keywords, determining their popularity, assessing the amount of competition, and deciding which keywords can be best supported with quality content.

Paid Placement and Paid Inclusion are also part of Search Marketing. Google AdWords, Microsoft adCenter, and Yahoo! Search Marketing are all examples of 'paid' Search-Engine Marketing.

It is possible to use tools such as Metatags that will optimize your pages and make it more likely that search engines will find your site. Metatags are code included in the head of a web page that does not display but can be read by the crawlers that search engines use to find pages. The three most important metatags for marketing purposes are title, keywords, and description. For example, here are the metatags for the STD main page on the CDC site:

```
<meta name="description" content="Information, statistics, and treatment guidelines for sexually transmitted diseases (STD) from CDC's Division of STD Prevention" />
<meta name="keywords" content="STD, STDs, STD prevention, sexually transmitted diseases, prevention, venereal disease, VD, chlamydia, LGV, gonorrhea, syphilis, human papillomavirus, HPV, herpes, HSV, trichomoniasis, bacterial vaginosis, BV, surveillance, treatment guidelines, sexually transmitted infection, STI" />
<title>Sexually Transmitted Diseases - Information from CDC</title>
```

Here is how this information will show up in a Google search:

**[Sexually Transmitted Diseases - Information from CDC](#)**

Information, statistics, and treatment guidelines for **sexually transmitted diseases (STD)** from CDC's Division of **STD** Prevention.

The title tag is used as the hyperlink (it would also be used as the text of a bookmark or favorite) and the description tag is picked up as the description. The search engine matches the users search to the keywords it finds in the keywords in the pages metatags.

For more information on Google search, see <http://www.google.com/webmasters/>

For information on Yahoo, see

<http://tools.search.yahoo.com/about/forsiteowners.html#webmaster>

For information on Bing search, see [http://help.live.com/help.aspx?project=wl\\_webmasters](http://help.live.com/help.aspx?project=wl_webmasters)

## Measuring impact

One of the most common ways of measuring the impact of a website is to look at usage statistics for the site. There are two main ways that such statistics can be generated:

1. From Internet-server logs
2. From code added to each page and recorded on a third-party server

See an article on web analytics in Wikipedia for more information,

[http://en.wikipedia.org/wiki/Web\\_analytics](http://en.wikipedia.org/wiki/Web_analytics)

Software to analyze web traffic can be quite expensive, so if your server has something available, you will probably want to use it. If no analysis software is available, your server administrators might be willing to give you access to server logs. Google offers a product called Urchin Web Analytics. Version 5.0 is free but all subsequent versions will charge for a license. If nothing else is available or affordable, you can add page counters to each of your web pages to measure traffic. It is more professional if the counters are invisible and just report to you either by e-mail or by recording results in a file on the server. To find free counters, search the Internet for “page counters.”

You may want to know more about how your site is being used and to look at the page views (or page loads) rather than just the hits for your web pages. A web page is made up of multiple files, generally an htm file plus many graphic files. Hits count each file separately and give an inflated and possibly distorted idea of traffic. Page views measure how many times the web page is viewed, including the related graphics. So, if a web page has one htm file and 20 graphic files, one person viewing it would count as 21 hits but only one page view. Visits (the number of visitors, including repeat visitors) and unique visitors (one visitor counted once only) are also useful in determining the success of your site. For more information and a detailed explanation of these terms, please see *Appendix E* for definitions. Measuring unique visitors usually requires that the website create a permanent cookie on the users' computer. If you are working on a government website, creating permanent cookies is forbidden by federal privacy regulations.

When using web usage statistics to measure impact, it is important to select a set of measurements that you can repeat in the same way for different time periods. You don't want to have page views for one month and visits for another. Plan what you will measure as you are setting up your website.

Web-usage statistics tell you if people are using your website, which is a necessary first step, but you may want to measure other types of impact depending on the goals of your website. If your goal is to increase STD testing at clinics or at a special event, you need to collect data at the clinic or event on how people found out about the services. You might be

able to provide some sort of coupon or incentive, such as mention the website to get a discount or giveaway or to move up in the line.

If your goal is to increase understanding of the topics you are presenting on your website, you might want to use an online survey to measure impact. If tools to conduct an online survey are not available on your server, there are many inexpensive sites that you can use to conduct custom surveys that you would link to your site. Search the Internet for “online surveys.” Online surveys are also useful to measure customer satisfaction and identify ways to improve your site.

## **Maintaining the site**

To keep your website effective, it needs to be reviewed and updated regularly (at least annually). For content that doesn't need to change, you might want to add a recent reviewed date so that your audience will know this is still current. Older content can be deleted or, if you think it may have some historical value, you can move it to an archive section. All hyperlinks on your site need to be checked regularly to make sure that they are still valid links and to ensure that the content is still useful. A monthly hyperlink check is usually effective.

## **Design**

Effective design holds a web visitor on a web page long enough to see your content. It is the blend of color, images, font choices, and placement on the page that creates the emotional tone of a web page. Effective design incorporates all the elements of usability but it is more than just following usability rules.

Consider the two following pages:

- Jakob Nielsen's Alertbox, April 17, 2006: F-Shaped Pattern For Reading Web Content - [http://www.useit.com/alertbox/reading\\_pattern.html](http://www.useit.com/alertbox/reading_pattern.html)
- San Francisco City Clinic - <http://www.sfcityclinic.org/>

Jakob Nielsen is an authority on usability and his site certainly follows all the rules (The article also has valuable information about how web visitors view a page.). The San Francisco City Clinic site also follows the rules of usability but, in addition, it is well designed. Consider your reaction to the two pages. Which page makes you want to keep reading?

Design is not a one size fits all undertaking. The web design that would work best for treating physicians is not the same design that would be most effective with urban MSM. Share with your designer information about your target audience and look for a designer who has experience creating sites for your audience.

If possible, hire a professional web designer to create your site. If the budget is tight, investigate working with a local design school or web courses at a university, as discussed

earlier. A professional web designer could also create appropriate banners to draw attention to your message and bring visitors to your website.

## **Design/Things to avoid**

- Welcome to the (Agency Name Here) Home Page followed by an explanatory paragraph. If the page is well-designed, the Internet user will understand immediately which website he or she is accessing. Internet users scan pages and leave quickly if they do not find desired information.
- Page Under Construction or Coming Soon: Do not post a website until it has content. The only exception to this rule is if specific content will be published on a specific date and the agency is getting inquiries about when the information will be posted. For example, if a funding announcement will be published on September 2 (and that is a firm deadline), the web page designer may want to post a funding announcement page with the information that the announcement will be published on this page on September 2.
- New content with an old publication date: It can be valuable to mark new additions to your website in some way. Publication dates for specific content can be useful; however, it is essential to ensure that content designated as NEW is actually new web page content.
- Blinking/flashing text or images
- Alphabet soup: If acronyms are used, be sure that definitions are clearly spelled out somewhere on each web page. Be particularly careful about acronyms you use frequently in your agency. For example, many people may not know that STD stands for sexually transmitted diseases.

## **Technical Considerations**

### **Handicapped Accessibility**

All Federal websites or websites created for the public with federal funding must meet the requirements of Section 508 of the Rehabilitation Act (29 U.S.C. 794d). To read the regulations for websites, go to: <http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Web> . While the regulations look daunting at first glance, it is not generally that difficult to make your website handicapped accessible. For further training and information, visit <http://www.section508.gov/index.cfm>. To test a web page's accessibility, see <http://www.cynthiasays.com/> .

## Screen Resolution

Web pages display differently depending on the screen-resolution settings on the computer. Resolution is a measurement in pixels of what displays horizontally and vertically on a computer screen. To see what resolution you are using, right click on a blank area of your desktop and select “Properties” from the menu. Click on the “Settings” tab and you should see the screen resolution you are using. A resolution of 1024 x 768 is common as is the lower resolution of 800 x 600. The latter will display less of a web page at one time. This can be a problem if a web page (or a graphic on a page) is wider than 800 pixels because it causes a user to have to use the horizontal scroll bar to see the entire e-page. In general, this should be avoided. You should test your pages at least down to 800 X 600 to make sure your users do not have to scroll horizontally. Additionally, your web server administrators may be able to give you information about the screen resolutions in use by your web visitors from the server logs.

## Cross-browser compatibility

A browser is the software installed on a computer that displays web pages. Different browsers display pages differently and you need to test your web pages in the major browsers that your web visitors will use to make sure they display as you intended.

Below is a table that shows the top eight browsers and the percentage of the web audience in the first nine months of 2009 on the CDC web site. The second column shows the percentage of the audience for other agencies and businesses that use the same web statistical software, Omniture.

<b>Browser</b>	<b>% Visitors CDC Web</b>	<b>% Visitors Omniture Customers</b>
Microsoft Internet Explorer 7.0	29.3%	37.2%
Netscape Navigator 4.0	27.1%	0.1%
Microsoft Internet Explorer 6.0	18.7%	16.6%
Mozilla Firefox 3.0	11.0%	8.4%
Microsoft Internet Explorer 8	4.9%	13.6%
Safari 3.2.1	1.3%	0.5%
Safari (unknown version)	1.2%	6.5%
Mozilla Firefox 3.5	1.0%	9.9%
<b>Totals</b>	94.5%	92.8%

The report this table was drawn from listed 267 different web browsers or versions that were used to visit the CDC web in 2009, but it is not practical to test in 207 browsers. Web pages need to be tested in the most commonly used browsers to serve as high a percentage of web visitors as possible. Testing in these eight browsers would cover 94.5% of CDC's audience.

As the table shows different web sites may attract a different mix of browsers, so if possible you need to find out what browsers your web visitors are using. The administrators of the web server that is hosting your site may be able to give you that information. If not, you can get information on browser usage for the Internet in general from sites like this [http://www.w3schools.com/browsers/browsers\\_stats.asp](http://www.w3schools.com/browsers/browsers_stats.asp) . This site also shows clearly how browser usage changes over time. It is a good idea to review the browsers you select at least annually.

### **Printable pages**

Many Internet users print web pages to read later or share with friends and colleagues. Web pages can be coded to print easily, usually with a separate print style sheet. For long documents or fact sheets and brochures, it is a good idea to make an Adobe PDF version so that viewers accessing the website and document can have numbered pages and greater control over print output. If there are PDF files on the website, it is useful to Internet users to include a link to download Adobe's free PDF reader, <http://www.adobe.com/products/acrobat/readstep2.html>.

## Appendix C

### Banner Ad Considerations

- Establishing realistic goals and discussing your methods of evaluation before you start.
  - Time management; be sure to give yourself plenty of time, especially if you need to create a relationship with a website.
- Defining your budget will help in determining what sites will be available to you for advertising. Your available resources may also determine the location for the banners within the site and the frequency of display, as cost is often associated with these two factors.
- What are your abilities and needs?
  - Do you need professional assistance with your banner ad? It is possible to create a simple informal banner ad with imaging software (e.g. Photoshop or PhotoImpact) without employing professionals. Should you choose to “create your own,” be aware of image rights and potential copyright issues.
- The design:
  - Will you seek to duplicate (re-purpose) an existing campaign from another jurisdiction or agency or create an entirely new campaign?
  - Will you need to customize the banner for your audience or make the banner culturally appropriate?
  - What technology will you use (animated banners, banners that have multiple screens and move or change, have multiple advantages over static or single-screen banners)?
  - Will you seek the input of your target audience or intended users to inform the design?
  - Banners should be small and fast loading. It's important to “grab the eye” as the page loads.
    - Five seconds should be the maximum amount of time it takes for animation to play.
  - Text length & legibility:
    - Too much text can overwhelm users, and they will be less likely to read.
    - A sans serif font will display better at smaller sizes than a serif font (e.g., Sans serif font = Helvetica).
  - Brainstorm ways to create a banner that can effectively compete with other banner ads.
    - Be aware of other banner ads.
    - Be different through the use of images or catch phrases not normally seen on a specific website.
    - Be CREATIVE.
- What message do you want to deliver?
  - Is your message going to an audience that may be over saturated with other versions of the same message?

Can you deliver your message in the available space of a banner?

○ Location:

A relationship with the website will need to be established; keep in mind that some websites will be more willing to establish a relationship than others. Review the site you are targeting. Is there another health banner on the site? If so, you may want to contact the producer of that banner and ask them about their relationship with the website. Don't be discouraged, it may take many months to establish a friendly, working relationship with a website. In some instances, a relationship may not be possible; you must know when to accept this and move on. Size, shape, color, and images should all be taken in context. You should be familiar with the selected location and determine what will make your banner ad stand out and get attention on the location you have chosen. Banner ads that closely mirror the look and feel of the host site have the highest "click-through" rates. You may also want to try a banner design that stands out on the site to see if it produces better results. Some reports indicate that bright colors such as blue, yellow, and green banners have a higher click-through rate than black and white.

Is your chosen location already overburdened with banner ads? Is "banner blindness," a term that refers to an audience that has become "blind" to banners due to oversaturation, a consideration?

○ Length of campaign:

A decline in click through rates can help determine the how long you decide to run a banner ad

Consider refreshing and/or changing your banner frequently.

○ Evaluation:

How will you determine the campaign is a success?

- Try to tie actual outcomes to your health communication efforts. For example, if the goal of the campaign is to increase testing for a particular STD, adding questions to intake forms or printable coupons can provide numbers of people testing as a result of seeing the health messages.
- Another way to evaluate awareness, albeit limited in its generalizability, is through street-intercept interviews. People are randomly intercepted on the street, at the mall or other such location and asked about their awareness of a certain campaign and the perceived goals & objectives of the campaign.
- Bear in mind, evaluation activities need to be planned prior to implementation of the campaign so that all data collection tools, e.g. questions added to intake forms, are in place, and, if appropriate, baseline data collected before implementation.

How will you distribute the results of your campaign to others?

## Appendix D

### Health Communications Planning Tools

#### **CDCynergy**

CDCynergy is a multimedia CD-ROM used for systematically planning, managing, and evaluating public health communication programs. It guides users through conceptualizing, planning, developing, testing, implementing, and evaluating health communication activities, while promoting accountability and the importance of evaluation.

For more information, please visit:

<http://www.cdc.gov/healthmarketing/cdcynergy/index.htm>

#### **National Cancer Institute – Making Health Communication Programs Work**

This book describes a practical approach for planning and implementing health communication efforts. The planning steps in this book can help make any communication program work, regardless of size, topic, geographic span, intended audience, or budget. (Intended audience is the term this book uses to convey what other publications may refer to as a target audience.) The key is reading all the steps and adapting those relevant to your program at a level of effort appropriate to the program's scope. The tips and sidebars throughout the book suggest ways to tailor the process to your various communication needs.

For more information, please visit: [www.cancer.gov/pinkbook](http://www.cancer.gov/pinkbook)

## Appendix E

### Definitions/Glossary

**Animated image** – An image that moves or changes.

**Audio/Video (A/V)** - Refers to equipment and applications that deal with sound and sight. The A/V world includes microphones, tape recorders, audio mixers, still and video cameras, film projectors, slide projectors, VCRs, CD and DVD players/recorders, amplifiers, and speakers.

**Banner Ads** - Generally known as a graphic image (static, animated, or rich media) that is used on websites for the purpose of advertisement or promotion.

**Chat lines** - Phone-based services that charge a fee in order to set singles up with other singles for the purposes of conversation, dating, or sex.

**Click Throughs** – The act of clicking on a banner ad and transferring to a website.

**Click Through Rate (CTR)** – The percentage of click throughs from a banner ad to a website. A 1% CTR means that 1% of each 1000 banner views (or 10 visitors) have clicked through to the linked website.

**E-mail** – Messages sent through an electronic network to specified groups or individuals. Though e-mail is generally text, users can attach files that include graphics, sounds, and video. E-mail is not ‘real time’ and relies on the recipient to open the e-mail to read it.

**Games for health** - Games that apply health-promotion and health-communication strategies, along with the pedagogical strategies used more generally in games for learning, in order to produce better health outcomes.

**Health Communication** – The study of communication strategies to inform and influence individual and community decisions that enhance health.

**Hits** - A request for a file from the web server.

**Hypertext Transfer Protocol (HTTP)** - HTTP is an application protocol that defines how files on the World Wide Web are transferred. HTTP is the framework for how browsers will display and use file formats. When you enter in a URL with HTTP at the beginning, you are requesting a web page that can contain other elements (such as pictures) and links to other resources.

**Internet** – The vast collection of inter-connected networks that are connected using the TCP/IP protocols and that evolved from ARPANET of the late 60’s and early 70’s. The Internet connects tens of thousands of independent networks into a vast global Internet and is probably the largest Wide-Area Network in the world.

**Page View** - A request for a file whose type is defined as a page in log analysis.

**Massively-Multiplayer Online Role-Playing Gamer (MMORPG)** - A type of online computer role-playing game (RPG) in which a large number of players interact with one another in a virtual world.

**Mobile devices** - Portable communication technologies such as cell phones and personal digital assistants like BlackBerrys.

**News feed** - A regularly scheduled summary of information (often news) that is delivered on a website or in an e-mail directly to subscribers. News feeds often include headlines and links to full versions of content.

**Podcast** - A method for distributing media over the Internet. Podcasts can contain any type of digital media, including audio, video (Vodcast), and text. Radio and television programs are commonly made available as podcasts.

**Protocol** - A standard way of communicating across a network. A protocol is the "language" of the network, a method by which two dissimilar systems can communicate.

**Rich Media** – Rich media is typically used to describe digital, interactive media

**Social networking site** – A social networking site (SNS) is a website that uses various tools and features that assist in the connecting of individuals that share similar interests. SNS provide features and tools that help to indicate the ways in which members of the site are connected through various social familiarities ranging from casual acquaintance to close familial bonds.

**Static image** – An image that cannot be manipulated, changed, or moved.

**Street intercept interviews** - This is where people are randomly asked about whether or not they are aware of a certain campaign and what they think the objectives or goals of the campaign are.

**Text-messaging** - Messages sent through a wireless mobile network to specified groups or individuals. Though messages are generally text, users can attach files that include graphics, sounds, and video. Texting is not 'real time' – relying on the recipient to open the text message to read it.

**Open Source Software** – Open source software refers to source code that is free to the general public for use and/or modification. ADD a definition

**Uniform Resource Locator (URL)** - A string of characters used to represent and identify a page of information on the World Wide Web that is used by a web browser such as Internet Explorer to resources on the Internet.

**Video game** - A video game, also called a computer game or electronic game, is any interactive game operated by computer circuitry.

**Visit/Session** - A series of requests from the same uniquely identified client with a set timeout. A visit is expected to contain multiple hits (in log analysis) and page views.

**Visitor/Unique Visitor/UniqueUser** - The uniquely identified client-generating requests on the web server (log analysis) or viewing pages (page tagging) within a defined time period (i.e., day, week or month). A Unique Visitor counts once within the timescale. A visitor can make multiple visits. Retrieved from 8/9/07 from [http://en.wikipedia.org/wiki/Web\\_analytics](http://en.wikipedia.org/wiki/Web_analytics)

**Web hosting** – Providing the storage, connectivity, and services necessary to serve files for a website.

**Website** – The entire collection of web pages and other information (such as images, sound, and video files, etc.) that are made available through what appears to users as a single web server. Typically, all the pages in a website share the same basic URL.

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