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A project of the American Association of Homes and Services for the Aging with funding from the Robert Wood Johnson Foundation.

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# Creating Senior-Friendly Web Sites

## ABOUT THIS BRIEF

Older adults are a rapidly growing segment of the on-line community. However, many sites are designed without their needs or characteristics in mind. This brief provides the basics for developing a "senior-friendly" Web site for your organization or program, including tips about design, layout and content.

## Why Create a Web Site?

In this information age, whether you are a nonprofit organization, such as an area agency on aging or a local caregiver support group, or a for-profit company selling books by the million or donuts by the dozen, a Web site is becoming a necessity.

Both for-profit and nonprofit agencies are realizing that their clients are as close as a browser.

Older adults are major consumers of goods and services of both for-profit and nonprofit organizations. The on-line community's growing popularity with seniors means that those who develop and maintain Web sites need to take seniors' interests seriously.

While e-mail is the activity in which older people engage most often, searching for information comes in second.<sup>1</sup> Thus, a Web site can be a great way to get information out to seniors and their families about your organization, your Medicare education program, or about the Medicare program itself!

### On-line consumer breakdown

Older adults (50+)	15%
Adults (19-50)	71%
College students	10%
Children and teens	4%

### Hours spent on-line each week

Older adults (50+)	8.3
Adults (19-50)	7.7
College students	7.8
Teens (13-18)	5.9
Children (2-12)	3.4

### On-line spending (in billions, 1999)

Older adults (50+)	\$ 2.3
Adults (19-50)	11.7
College students	0.8
Children and teens	0.1

SOURCE: Jupiter Communications, 2000

## GROWING NUMBERS

Estimates of those over 50 on the Internet range from 16% of users to 45%. Since November 1995, computer ownership has increased among older individuals; 4 in 10 seniors currently report having a personal computer at home compared to 29% in 1995. Additionally, 1 in 10 seniors without access to the Internet from home or from work say that they sometimes access the Internet from another place such as a friend's or relative's home or public library.<sup>2</sup> And once the baby boomer generation—most of whom are already computer-literate—becomes the Medicare generation, elder Internet use will skyrocket. Therefore, gearing Web sites toward this population becomes an important task.

**KNOW YOUR AUDIENCE**

Simply posting your information on the Web is not enough to attract and retain consumers. Just like any other form of advertising, Web sites must be designed with the target group in mind. While it may be true that “if you build it, they will come,” if your site is difficult for your target audience to use, they may not come back!

As the table below illustrates, as we age, the

functioning of many of our senses often declines. In most cases this does not dramatically hinder daily life, but it is important to be aware of these changes while designing your Web site.

While each of these possible impairments can affect the ability and motivation of older people to use computers and the Internet, they are easily handled through some adjustments to your Web site, which we will discuss in the next sections.

<i><b>Impairment</b></i>	<i><b>Effect on Computer Tasks</b></i>
<i>Visual</i>	
Focusing ability	Fast moving objects become harder to follow. Presbyopia (farsightedness) develops.
Seeing dark and light	Adaptation to dark decreases. Sensitivity to glare increases due to decreasing transparency of the lens.
Seeing colors	Colors in the green-blue-violet range become harder to distinguish.
<i>Intellectual</i>	
Response time	More time is needed to consolidate information. Response time is complicated by having to perform multiple tasks.
Learning rate	The rate of storing new information and retrieving old information may slow down.
Concentration	It may become harder to ignore irrelevant stimuli and thoughts.
<i>Hearing</i>	Hearing high frequencies and distinguishing speech may become more difficult.
<i>Motor skills</i>	Chronic conditions such as arthritis may make small movements, such as those needed for typing or using a mouse, more difficult.

## Senior-Friendly Page Design

**BACKGROUND.** Contrast between background and text is important. Usually this means having dark type or graphics against a light background (though sometimes the opposite can work fine with sufficient contrast). For example, black type on a purple background does not provide clear enough contrast to make your text easy to read; a medium gray makes both dark and light letters hard to see.



### Avoid Patterns

Sometimes the colors of the background and text of a Web site are distinct enough, but a patterned background (wallpaper) is used. Even with good contrast, the pattern in the background can distort the text in the foreground. If your primary audience is older adults, be safe: avoid patterned backgrounds, and use solid colors.

**FONTS.** Many older adults prefer 14-point type for text. However, bigger is not always better; type that is too large can also be hard to follow and may require more scrolling to read. Headings should be at least six points larger than the text in the body of your page so they can be easily differentiated. Use bold type to highlight key terms or section divisions.

**TYPEFACE.** For publication on the Web, sans serif faces (those without extra strokes in the letters) are generally considered easier to read. (Note: this differs from printed materials where serif fonts are considered to be easier to read.)

Serif Type

Sans Serif Type

Intensity refers to how thick your letters are. Type should be intense enough to read easily, but be careful of some bold types that are too heavy to distinguish.

Light Regular **Bold**

*Italics make words appear wobbly; underlining makes them blur.* *Fancier Fonts* may be used for headings but are too difficult to read as text.

**COLORS.** Your choice of color matters a great deal. Decreased sensitivity to color can make distinguishing between certain colors difficult for seniors, particularly red/green and blue/yellow combinations. Bright neon colors may also become annoying.

➤ **Links.** The default for hyperlinks in most browsers is blue; therefore it is very important not to have hyperlinks imbedded in blue or green type. If the links must be imbedded at all, make sure there is plenty of color contrast and enough space on either side so they will stand out.

➤ **Graphics.** Text and graphics should be understandable when the user has the browser set to black and white. Be aware that older computers with older video cards or monitors can display different colors from the ones you intended for your graphics. So if you use a graphic as a hyperlink, you should say “Click on the circle” rather than “Click on the red.”

**JUSTIFICATION.** Justification refers to how words are placed within the page margins.

Type that is centered is fine for headings but can be difficult to read in paragraph form. This type is centered.

Full justification (spread evenly between the margins) adds extra spaces or reduces spaces between letters and words. On shorter width text where there is less to change, full justification can make reading uncomfortable.

[This type is fully justified.]

**SPACING.** Another way to make your page easier to read is by effectively using “white space,” the space between letters, words and lines. The smaller the type size, the more critical it becomes to have each letter or line distinguishable from the ones around it.

➤ *Between letters.* Using condensed type (this is condensed) squeezes the letters together and makes them harder to read. While effective for squeezing more copy onto a page, too much of it together can appear blurry and cluttered.

➤ *Between lines.* Because they have less peripheral vision, older adults may have more trouble reading pages that are single-spaced rather than double-spaced. In particular, if bold type is used, it is better to add the extra space to improve both the ease and the speed of reading. An alternative is to format your paragraphs at 1½ spaces, or add a few extra points of space between lines; this “airs out” your text without using as much screen space.

**SCROLLING PAGES.** Because older users may have slower reading and word recognition rates, do not use automatically scrolling text on your page. This device has alienated enough people of all ages that it is utilized infrequently now—usually on pages targeted to very young users. If you absolutely must use scrolling text, offer a static text alternative as well.

## **Senior-Friendly Page Layout**

**SHORT PAGES.** While growing old does not necessarily mean that a person operates at a slower speed, it always does for a computer! Remember that many older adults have older computers that have been “handed up” from children or grandchildren. Even some early Pentium processors have difficulty with multi-media. These machines may use slower operating systems and browsers; pages with graphics or lots of text will require much longer to load, causing the user to lose patience or the system to freeze. Longer documents also require continuous scrolling to read; this operation can be tedious and difficult for someone who has problems controlling a mouse.

**CONSISTENT LAYOUTS.** Each page in a site should use the same design, same symbols and icons and same means of navigation. A consistent design not only facilitates the use of your site, but users are also more likely to learn how your pages are organized and become comfortable with your site. If the means of returning to your home page is on a side bar on some pages and at the bottom on others, users may become annoyed and leave altogether.

**SIMPLICITY.** As the number of items in an area increases, it becomes harder to find the object you are searching for. Your site may feature six programs that your agency sponsors and you want to have sufficient information about all six on your home page to entice every visitor to every feature. If some have nice photographs, another has a flashy logo, another has a list of services, etc., your audience will have great difficulty finding their subject of interest with so many detractors on the page. So keep it simple.

This also applies to the use of icons. Sticking to one style or design is not only less confusing, it also gives a cleaner, more professional appearance.

**MENUS.** Using a mouse or other pointing device may be difficult for people with arthritis or unsteady hands. Walking menus, those that lead from one pulldown menu to the next, require precise movements, which may be problematic for older users.

Items on the menu should be large enough to provide an adequate target for the mouse. Some of the most prestigious (and probably expensively designed) Web sites have menus to the left or right of the main screen in six-point type—some even smaller. People of all ages have to squint at the screen to see this miniscule type—imagine the difficulty for someone with a visual impairment!

**FRAMES AND TABLES.** The use of frames (separate small boxes on the screen that can be changed independently) is one of the latest Internet technologies; it is also the one feature that can make a Web site inaccessible. While frames can be useful navigation tools, older computers and slower browsers often cannot handle them; frames cause these older systems to lose information or freeze. If you would like to use frames, be sure to provide a text alternative Web site and have the means to access this alternative clearly labeled on your site.

**MEMORY CUES.** It is a good idea to label each page with the name of your site, preferably using the same design and location on every page. If your Web page offers a variety of choices, place a toolbar at the top of the page to assist your users. These visual cues provide environmental support to compensate for memory lapses.

Site maps are very effective in helping users understand where they are in relation to other Web pages and how to move quickly to these pages. However, many new users may not be sure what a “site map” is, so an explanation may encourage them to use it. Also, be careful not to make your site map more complicated than your regular navigation system!

**THE MOUSE.** For those with unsteady or arthritic hands, using a mouse can be difficult. As you design your page, be conscious that minimizing the number of clicks needed to access information will make it more user-friendly. There are a number of pointing devices designed for persons with disabilities; however, it is likely that the older adult you are trying to reach may not have these special implements. And creating a site that is easier for those using a normal mouse will make things even easier for those using special technology.

## Help and Information

There are two types of help that you should provide—assistance with the technical use of your Web site and assistance with content. Your page should offer a help menu with several means of getting assistance in both areas. Context-sensitive help is an assessment by the help program of where users are on the page so that it may offer assistance. Pop-up boxes of text appear when a mouse lingers over a key word or phrase. Both keep users from having to search through long lists of items.

- **Locating help.** Some sites target the older population in order to offer assistance for those experiencing physical or cognitive impairments. For these providers, it is even more vital to have alternative sources of information. If possible, offer a telephone number for those who cannot manage alone or who would prefer to talk to a live person. If forms are used, provide alternative means of communication (phone or e-mail) so that orders or requests for information can be processed in the manner the consumer prefers.
- **FAQs.** A Frequently Asked Questions section is a good idea as well. This should not only cover the technical problems that users might encounter on your site but also address content questions. Make sure that this page stays current and really reflects the feedback you get from your visitors.
- **Entry errors.** If your site requires an entry activity like registering or submitting an e-mail address, offer constructive advice when errors occur. Provide more than just the same screen popping up over and over saying that the information could not be processed or, worse, just returning to the entry screen without any explanation. Try to explain that a certain field was not completed correctly (“Your phone number should have 10 digits.”).
- **Searching.** Different search engines operate on different logic; for example, some require punctuation between terms, others will not operate with it. The user needs to be given extremely brief instructions on the system you are offering to them. If a user’s search for information yields very few hits, consider giving hints on how to improve results.

**NAVIGATION.** Navigation is the path that your users take to move around your site as well as to link to other related sites. The larger your site is, the simpler it should be. Web sites with many pages can be confusing; users may move from one page to another, then to several levels of subordinate pages. And sites that are confusing to all users can be hopeless if someone has a memory impairment. *Always provide an easy way to return to your home page.*

➤ **Hyperlinks.** Try to use icons as hyperlinks rather than underlined text, which can be difficult to read. Links should not be too close together or some access software for the visually impaired may read two separate URLs (Internet addresses) as one. Avoid links requiring precise mouse control; larger buttons, icons or linked text makes a better target for mouse pointers. If possible, use features that allow keyboard movement in addition to the mouse.

Links should be clearly labeled—not only identifying that they are links but also giving the user an accurate idea where they lead. **It is also very important to test the links from your site continually and remove or repair those that no longer work.** After several dead ends, it is your site that appears untended.

➤ **Icons.** Buttons and icons should be large, not only to make easy targets for mouse functions but also so that the icon labeling the button is easy to identify. It is not necessary to have an icon or graphic for every button. (*Hint:* Complex icons and buttons are also more work when it comes time to update your page.) Only use a navigating icon or clip art graphic if it leads to a better understanding of your button label. When using icons, make sure they are recognizable to the user. Think about symbols that do not need a label to be understood—things like a telephone for contacting, a printer icon to print the page, magnifying glass for searching, envelope to send e-mail and so on.



*This icon obviously provides an exit from the area the user is in.*

*There is no apparent meaning for this icon.*



## Senior-Friendly Page Content

**ORGANIZATION.** Again, keep it simple. If your Web site offers a variety of information, clearly label each section—preferably with a menu at the top—so that users can quickly locate items of interest. Older adults do better if they finish one task before starting another, so organize your Web page so that each item is displayed or discussed completely before presenting the next.

➤ **Long documents.** If you are providing a lengthy document, try to break it into sections with each labeled and accessible from a menu—this not only makes retrieval easier, but also assists your audience with finding the information they want without having to wait for the whole page to load. It is also helpful to provide a summary of long documents at the top of the page so users can quickly determine if this is what they are looking for.

**LANGUAGE.** Easy to understand vocabulary is beneficial for all users, but especially for older people. Avoid using techno-language since older adults may not have a background in software or hardware terms. Other subject areas such as law or medicine may also have terms that are either unknown or confusing to the average reader. When the use of these terms cannot be avoided, be sure to provide a glossary.

**ILLUSTRATIONS.** If your Web page gives instructions on how to fill out a form, find information, locate an office, or any other step-by-step operation, both older and younger adults will perform better with both written and illustrated directions. For older adults, the more realistic the illustration, the clearer it will be to understand. Animated instructions provide an even greater means of retaining information; however, they should always be accompanied by text for those users unable to view graphic images.



## Using Graphics Well

➤ **Alternative text.** There are several reasons why you should provide alternative text for images or have available descriptions of graphics. Visually impaired people may have speech synthesizers to read text; without a written description, they have no way of using your information. Owners of older, slower computers or modems may not be able to download images or may have their browsers set to ignore large graphic files. If your graphic contains the name of your organization, the site menu, log-in information or any other information necessary to use the page, these users will lose this information.



For example, the map above might ask the user to click on the section of Canada in which he or she is interested. Obviously, without the ability to see the map, the consumer may leave your site to search for a friendlier environment.

➤ **Animation.** Animation is another fun piece of technology, but it can also make it harder for an older person to use your page. Both visual problems and older technology interfere with seeing many of the files. In addition, repetitive motion can be so distracting that users may miss your real content. This little dog is amusing until he runs across the page continuously and becomes an annoyance. This also applies to blinking text. It can be irritating to everyone but provides a serious distraction to persons with visual difficulties.



Therefore, despite how good your company logo looks with flashing lights or rotating in 3-D, tone it down if your page is targeted toward older adults or persons with disabilities.

## Using Audio Well

Audio has high potential on Web pages for older adults, particularly those with vision problems. However, older computers not only have trouble with graphics, they also often have difficulty playing sound files. Many will not have a sound card installed at all, others will not have the RAM to handle an additional operation. Therefore, you should only use sound if it is important to the subject of your Web page and if you provide alternative text or a description of the audio information.

For many older adults who have problems hearing distorted speech, computer-generated voices may be hard to understand. Limit your sounds to one at a time; for example, speech over music may be hard to distinguish. If you use a sound to highlight a section, make sure it only plays once. A music or event sound that repeats over and over can become annoying. (Imagine the little dog running around your screen AND barking!)

## A Final Check

Your Web site designer should solicit a neutral party to evaluate the accessibility and friendliness of the final product. A comprehensive assessment is performed by the Center for Applied Special Technology (CAST) through an on-line tool called Bobby<sup>3</sup>. Bobby analyzes Web pages for their accessibility to people with disabilities and displays a report indicating any accessibility or browser compatibility errors found on the page. Once your site receives a Bobby-Approved rating, you are entitled to display a Bobby-Approved icon on your site.



You should also arrange for your own evaluation. Once you have completed the design of the site, ask some older adults to view your pages and then ask them what they think. Try to enlist current clients as well as outsiders to your organization for these reviews. Here is a checklist for how they might evaluate your site.

### Checklist for a Senior-Friendly Web Site

#### DESIGN

- ✓ Is the background attractive without interfering with the information?
- ✓ Are the colors easy to see and distinguish?
- ✓ Is the text a good color, size and font?

#### LAYOUT

- ✓ Do the pages load quickly enough?
- ✓ Do the pages on the site use the same style throughout?
- ✓ Are the buttons or icons large and clear enough?
- ✓ Are the pages and the information clearly labeled?
- ✓ Does each page have easy-to-use menus?

#### CONTENT

- ✓ Is the information easy to find and understand?
- ✓ Are the words common to everyday language?
- ✓ Is there plenty of help available in accessible ways?
- ✓ Can the user tell who is sponsoring the page?
- ✓ Do searches result in enough (but not too many) hits?
- ✓ Are instructions understandable? Do they have illustrations?

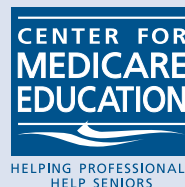
#### MULTI-MEDIA

- ✓ Are graphics useful, pleasant and easy to recognize?
- ✓ Is audio clear, useful and non-intrusive?

<sup>1</sup> Research on Seniors' Computer and Internet Usage: Report of a National Survey. Commissioned by Charles Schwab & Co. for SeniorNet, 1998.

<sup>2</sup> Computer Ownership and Internet Use Soars Among Older Americans. Accessing Financial News and Monitoring Accounts Top Activities for Online Investors. SAN FRANCISCO, Oct. 19 /PRNewswire.

<sup>3</sup> Use of Bobby Logo approved by CAST, March 13, 2000.



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