

Chapter 32

Building a Digital Home

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As with any marketing strategy, a website should be planned, reviewed, and updated (maintained) at regular intervals.

About two-thirds of people using the Internet have searched for information regarding specific health conditions for themselves or someone they know (Fox, 2013). “The ability to obtain accurate health information online quickly, conveniently, and privately provides the opportunity to make informed decisions” (Porter, 2007). Early Hearing Detection and Intervention (EHDI) programs are in the unique position to help families, healthcare providers, interventionists, Part C providers, and audiologists understand infant hearing loss. They work with federal, national, and state agencies and organizations to provide infant hearing loss identification, timely and appropriate intervention, family support, and effective tracking and data management systems (American Academy of Pediatrics, n.d.). A website that is comprehensive and user-friendly is an effective tool to reach out and meet the needs of stakeholders (see *Table 1*).

Each state’s EHDI program has its own mandates and requirements. The priority of managing and maintaining the state’s online tools is determined by the

program’s goals. As with any marketing strategy, a website should be planned, reviewed, and updated (maintained) at regular intervals. Ensuring that an EHDI website is content rich, organized, and well developed has many benefits. The

Table 1

A Comprehensive and User-Friendly Website

Benefits of a Website

- Provides information when it is convenient for the stakeholder.
- Expands the program.
- Reaches more people.
- Serves as a marketing tool.
- Stores educational resources and printable materials.
- Can quickly update to the newest information.

Challenges of Maintaining a Website

- Cost
- Time
- Bureaucracy
- Staffing
- Technology

challenge is to provide opportunities for coordinators to learn about and improve upon their online tools to create a reliable digital home that is referenced, explored, and recommended to others.

of the EHDI process (see *Tables 2 and 3*). Depending on the audience's needs, other content might include special resource pages for trainings, news, blogs, links to associated organizations, and secure access to the tracking and data management system.

Content

Each state EHDI program is focused on infant hearing loss and deals with a diverse community of stakeholders. A content-rich site provides relevant information for families, healthcare providers, and interventionists, along with an explanation

Quality of Content

The quality of content is determined by how current it is, whether it's consistent with other primary organizations (such as the state chapter office of the American Academy of Pediatrics, the state Academy of Audiology, early intervention staff,

The quality of content is determined by how current it is, whether it's consistent with other primary organizations, and whether users understand the material presented.

Table 2
Content for Stakeholders

Families	Healthcare Providers	Interventionists
<i>Parents, guardians, and/or caregivers</i>	<i>Hospital providers/midwives, medical homes/primary care doctors, and audiologists/ENTs</i>	<i>Part C early interventionists, schools for the deaf, private therapists, and audiologists</i>
<ul style="list-style-type: none"> • Importance of having a child's hearing screening completed before 1 month of age. • What to do if you don't know your child's newborn hearing screening results. • Simple explanation of screening result terms, such as "pass," "fail," "refer," or "incomplete." • What to do if you have concerns about your child's hearing. • Importance of continued hearing screenings for your child throughout their childhood. • Way to email questions and/or links to access resources (pay for services, parent support groups, technology). • Information on where to find an audiologist. • Information and resources in other languages: PDFs, brochures, and web content. 	<ul style="list-style-type: none"> • The role of providers in conducting screening and/or following up on screening. • The role of providers in reporting results to EHDI and reporting procedures. • How to deliver and explain hearing screening/diagnostic results to families. • Referral sources for rescreening, diagnostic evaluations, and early intervention, including contact information for these services. 	<ul style="list-style-type: none"> • The role of interventionists in screening and diagnostic evaluations—how to partner with Part C. • The role of providers in reporting results to EHDI—how to do it. • The importance of audiological follow-up—how to partner with audiologists. • Contact information/links for families for various agencies and pediatric audiologists in the community. • Information about EI resources for children who are deaf/hard of hearing: Family organizations, resource guides to help families learn about communication options, etc.

Design choices should be made with a purpose and the arrangement of elements to encourage users to research and “apply what they find to their situation.”

or schools for the deaf and hard of hearing), and whether users understand the material presented. Health-related websites tend to rely on text to explain health conditions. Individuals who are not fluent in healthcare language or have difficulty reading for long periods can be overwhelmed.

Accessibility of Content

Website content must be easily accessible for all users.

- Videos and audio files must have accurate captioning and/or a detailed script.
- Images require alternative text or “Alt Text” to allow screen readers to describe an image or read text included as an image.
- Colored text that conveys information needs to have another descriptor to make it recognizable (example: [links](#) are blue and underlined).

Media Content

Visual media highlights primary concepts and breaks up large blocks of text. “Many concepts are communicated more effectively with the addition of illustrations, graphics, videos, and photos [which are] used to convey important information or provide visual enhancement on a site (see *Table 4*). Choose visual media that shows racial and cultural diversity of children, families, and healthcare providers to reflect an inclusive EHDI program” (National Center for Hearing Assessment & Management [NCHAM], 2011a).

Design

Design of an EHDI website is used to meet the program’s goals and provide optimum usability for the stakeholders. Tanian Schlatter, a well-known medical website designer, notes that design choices should be made with a purpose and the arrangement of elements to encourage users to research and “apply what they find to their situation” (Schlatter, 2011). Website design encompasses visual styles, layout, and the overall impression of the site.

Table 3 EHDI Process

Screening

1. Explain why screening is important for children.
2. Define screening and rescreening.
3. Describe when hearing should be screened and rescreened.
4. Describe who conducts screenings.
5. Provide information on where to obtain a screening.

Early Intervention

1. Define early intervention.
2. Identify who to contact (i.e., early intervention services).
3. Provide information on a variety of communication options.

Family Support

1. Define family support.
2. Discuss why it’s important.
3. Provide information on family support organizations and other resources.

Diagnosis

1. Define diagnostic evaluation.
2. Describe when diagnostic evaluation is needed.
3. Describe who conducts diagnostic evaluations.
4. Provide information on where to obtain diagnostic evaluation.
5. Provide information about how it can be paid for (insurance, public programs).

Audiological Intervention

1. Describe hearing assistive devices (hearing aids, cochlear implants).
2. Communicate the importance of consistent, routine monitoring of assistive devices.

Surveillance

1. Discuss the role of the state EHDI program in surveillance to ensure children are screened.
2. Discuss the role of healthcare providers in reporting to the EHDI program.

Table 4 Website Visual Media

Flowcharts

Flowcharts explain steps in a process.

Videos

Videos give users a chance to listen to explanations or watch presentations.

Aesthetic Imagery

- Convey emotions
- Provide color or design

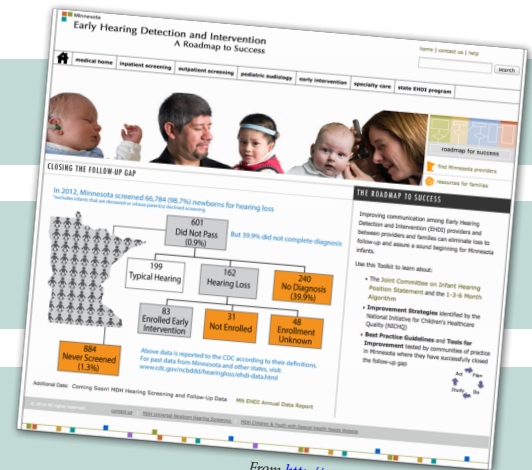
Photo and Graphic Images

Photo and graphic images, for instance, are used to educate:

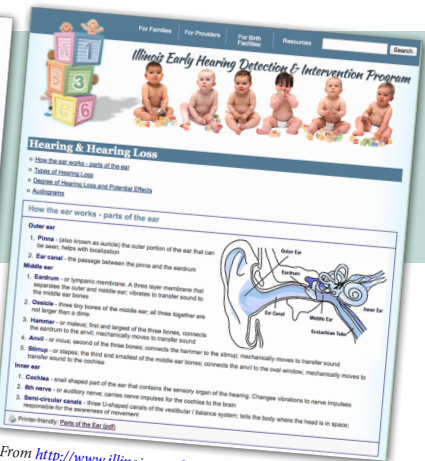
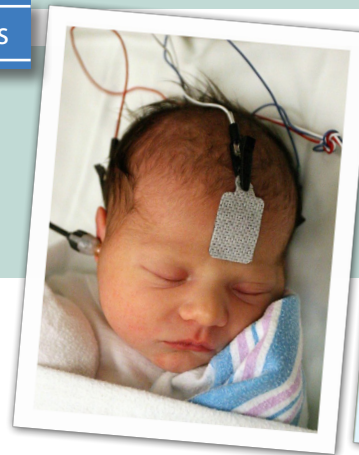
- Show where to place probes.
- Diagram of the ear.

Successful businesses and organizations put a lot of money and thought into their website design for marketing purposes. An EHDI program's web design is geared towards its stakeholders. Creating an aesthetically pleasing site helps it appeal to its users, while different aspects may trigger emotion and affect how users think about and use the site. First impressions play an important role for users and how they interact with the site. Stanford University found that the credibility of a website is assessed in part by the perception of the visual design (Stanford University, n.d.).

Consistency of all design elements is critical to keep the viewer focused on content. It is a mechanism to unite all the pages in the site together. If one webpage is drastically different from the last, users may wonder if they have left the EHDI program pages. In effect, altering user perception of the site.



From <http://www.improveehdi.org/mn/>



From <http://www.ilinoisoundbeginnings.org/page.aspx?item=8>

Visual Styles

The visual elements and style of presentation can help to highlight higher-level content and increase a user's ability to locate information. All elements work together to create an appealing site.

Color is used to evoke emotion and convey a message about the organization to the user. Each color will mean different things to each individual and cultures. It even carries a variety of meanings or symbolism in our own culture.

A user's attention is directed to colorful areas first. On webpages, color provides contrast between different elements,

Creating an aesthetically pleasing site helps it appeal to its users, while different aspects may trigger emotion and affect how users think about and use the site.

distinguishing areas such as navigation from content or links from main body content. To make webpages accessible, information conveyed with color must also be available without color. For example, linked text that is blue may also be underlined to signify that it is a [link](#). Also, webpages need to provide sufficient contrast between text and its background. White text on a bright yellow background,

for example, is not desirable as it provides very little contrast to distinguish what is written.

white or light text on a yellow background is difficult to read!

Darker text on a yellow background provides sufficient contrast to read!

Typography is the visual appearance of text and a subtle design element. It impacts how readable a webpage is. Typography includes fonts, font size, alignment, and colors used to differentiate between headings, body text, links, and navigation. A hierarchy of text is created with headings to label each section and guide users through the content. Sans-serif fonts are commonly used for body text because the characters are easier to identify. Providing consistency in the typography allows readers to focus on content and not the formatting. Designers recommend using two font types (Mellas, n.d.)—selecting one for the main body text and another for the headings.

Layout

Page structure is determined by the purpose of the page. In general, websites employ three page layouts that use consistent styles:

Home Page

- Provides an introduction to the state's EHDI program and summarizes what people will find throughout the website.

Content or Landing Page

- The primary content of the EHDI program is found on these types of pages. Users can read information, access PDFs, or click on links to navigate to another page or source.

Contact or Form Page

- Interactive pages of a website. Users can fill out and submit forms to request more information. Online surveys use form pages to gather data.

Every state EDHI website is unique in its overall design. However, users expect to find the following elements on any health-related website:

Header Section

The top-most section is the same top across every webpage.

- Logo
- Site search bar

Navigation Mechanisms

Location and types vary per site.

- Universal navigation: Primary links don't change from page to page.
- Local navigation: Secondary links that navigate to the content in specific sections.
- Breadcrumb trails: List pages back to the home page.

Content (Informational) Areas

Center or prime space of a page.

Footer Section

The bottom-most section is the same top across every webpage.

- Additional links
- Contact information



Content structure is how information is organized and displayed. The visual styles of “true headings” (styles coded with <h1>, <h2>, etc.) break large blocks of text into sections. Users should be able to navigate content quickly by looking at the section headings. Individuals who use screen readers or interact with a webpage using a keyboard may scan a page for content by skipping (tabbing) through the headings.

Other Considerations

Before creating the site, designers will often analyze an organization and its audiences—finding elements that work well together. Consideration is given to branding, who is hosting the site (stand-alone or part of a state’s health department website), how the site will be maintained (content management system [CMS] or hand-coded), and which devices may be used to view the website (desktop computer, tablet, phone).



Designers typically use HTML and Cascading Style Sheets (CSS) to create websites that are supported by browsers and mobile technology. The display of a webpage is affected by which browser is being used to view it. What might look great in Firefox can vary in its appearance when viewed with Internet Explorer, for example. Individuals may set up their browsers to match their viewing preferences. The best sites make all content accessible to all users and don’t deny an individual’s control of the web experience. For example, a good site uses real text instead of an image of text, allowing users to modify their viewing size of different fonts.

Accessibility

Accessible websites are critical for people with disabilities, and making

a site accessible improves usability for all individuals. The Americans with Disabilities Act (ADA) was implemented “to make sure that people with disabilities can have an equal opportunity to participate in programs, services, and activities” (U.S. Laws, n.d.). Webaim, Laws requires “federal agencies to make their electronic and information technology (EIT) accessible to people with disabilities”(U.S. Government, n.d.). EHDI programs are funded by government organizations and need to meet or exceed these standards.

Accessibility should be taken into consideration during the design phase of a website and implemented in the development phase. Adding accessibility later can take more time than if it was initially set up. (Resources available to learn about web accessibility, [W3C—Web Accessibility Initiative \(WAI\)](#), [WebAIM.](#))

Putting It Together

Teams are necessary to build and maintain a functional website that is content rich, easy to use, and aesthetically pleasing. Content is derived from the EDHI program and hearing loss professionals. Designers and developers work together with the program coordinators to create a user-friendly design and layout.

Expanding the EHDI program digitally is a process. Analyze the state EHDI program’s website to determine a need for change or improvement. This is found by comparing the desired outcomes with the website and what the state’s EHDI website currently accomplishes. The gap where the current state of the



State websites serve as the foundation for the EHDI program's digital presence. Stakeholders are able to explore the site to learn about hearing loss, the EHDI process, and current research—all in the privacy and comfort of their own homes.

website doesn't meet its desired goals can provide a focus for improvement. Determine the cause of the gap before making a plan of action; otherwise the selected improvement method may not be the best solution to attain the desired results. Knowledge of a state's and webhost's guidelines and policies is important. Some changes might be difficult to implement due to limited resources. When plans are finalized, make changes to the website. After some time, evaluate the changes made to verify that the desired outcomes are being met. If the website is not meeting its expectations for the change, revise the plan of action (NCHAM, 2011b).

NCHAM recognizes the importance of having a well-developed website and created the [Website Resource Guide](#) to provide guidelines for the EHDI initiative in developing well-rounded websites that “[ensure] the availability of accurate and user-friendly information pertaining to hearing screening, diagnosis, and early intervention services” (NCHAM, 2011c). They have also established the “Best EHDI Website of the Year” award to encourage programs to be proactive in providing and maintaining a quality website.

Reaching Out

State websites serve as the foundation for the EHDI program's digital presence. Stakeholders are able to explore the site to

learn about hearing loss, the EHDI process, and current research—all in the privacy and comfort of their own homes. Healthcare providers have a place to find forms and training opportunities. Coordinators have an electronic means to reach out to audiences and refer them to the website as an informational starting point.

In the United States, 12,000 babies are born annually with some form of hearing loss (American Speech-Language-Hearing Association, 2010). Families need a lot of reliable information in a short amount of time. Healthcare providers need to have up-to-date information about technology and changes in the law. The EHDI program is a primary source of information, because it exists to ensure that infants are screened by 1 month of age, diagnosed by 3 months, and are provided with early intervention by 6 months, if needed. Making information available online to everyone—anytime they need it—supports EHDI in this goal.



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