CDC’s Digital First Approach: Enhancing User Experience on CDC’s Vaccines Site

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Part I: Digital First...
Lessons from Zika

- Lots of “high value” print materials (PDFs, Infographics, fact sheets, etc.) buried on site.
- Not optimized for a mobile experience.
- Long complex content – “wall of text”
Think “Digital”

Digital First

Optimized Content

Good UX
CDC’s Digital First Approach

CDC uses a digital first approach to make digital content more usable, effective and accessible on multiple devices.

- With digital first, we optimize our content for digital delivery from the very beginning, recognizing that digital is the primary way our audiences access CDC information.
Part II: Vaccines for Your Children Website
- Redesign the site using a “digital first” approach.
Background

Primary Audience: Parents who wanted more information on vaccinations for their children or teenagers

Key Message: Vaccinate your children from potentially life threatening diseases

Primary method of delivery: 60% + Mobile devices

Concerns:
- Great content “locked away” in PDFs
- Non-intuitive navigation
- Text heavy, content not optimized for mobile presentation
Part III: Top “Digital First” Techniques

What worked well....
12 Top Techniques

1. Design for Mobile
2. Optimize Page Titles
3. Use Descriptive Headings
4. Write Short Page Summary
5. Identify and Prioritize Key Messages
6. Structure Content Based on User Goals
7. Highlight Key Content with Callout Boxes
8. Chunk Text for Easier Scanning
9. Make Key Links Stand Out
10. Design Navigation to be Clear, Concise, Easy to Understand
11. Use Images that Add Value and Support Key Messages
12. Optimize Infographics for Digital Consumption
1. Design for Mobile

- Prioritize content in order of importance.
- Place most important information within the first 1-2 screenfuls of the page.
- Avoid pushing key content too far down on the page.
- Avoid placing features, fact sheets, PDFs, and other resources above critical content.
- Ensure links are easy to scan and easy to tap on mobile. Lists, buttons, and other large target areas make mobile links easier to tap.
1. Design for Mobile

The redesigned Digital First version begins the page with key information about the vaccine and answers key questions about when children should receive the vaccine.
2. Optimize Page Titles

- Write clear page titles that accurately reflect the page content.
  - Lead with most important key words.
  - Consider SEO (search engine optimization) in the development of page titles.

The Digital First page title is more concise and easier to understand. Page title could be revised to “Measles Vaccine”.

Recommendations for Digital First Design
3. Use Descriptive Headings

- Use headings to
  - Break up text.
  - Set expectations: Users are willing to scroll, but in order to do so, they need confirmation that the information they are looking for is included on the page. Headings should be used to quickly and clearly communicate page content.

- Use mixed case (first letter capitalized) for headings.

- Write descriptive headings that answer key questions. This helps users who are scanning (on desktop) or swiping (on mobile) quickly to take away critical messages.

- Avoid questions as headings (when possible).
3. Use Descriptive Headings

The Digital First page uses sentence case for headings within body content to help make the headings easier to scan and read. See “How vaccines prevent disease”. The Digital First page also uses headings to communicate key messages such as “Vaccines do not make a mild illness worse”.

Example

Headings with Mixed Case

How vaccines work

Overview
As a parent, you want to protect your little one from harm. Before you decide to vaccinate your baby, you may wish to know more about:
- how vaccines work
- how vaccines work with your baby’s immune system
- vaccine side effects/risks
- vaccine ingredients
- vaccine safety

Use this page to find this information as you make the vaccine decision. If you have more questions, talk with your child’s doctor or see the common questions about vaccines for additional information.

How vaccines prevent disease
The diseases vaccines prevent can be dangerous, or even deadly. Vaccines reduce your child’s risk of infection by working with their body’s natural defenses to help them safely develop immunity to disease.

Vaccines do not make a mild illness worse
Vaccines only have a tiny fraction of the bacteria and viruses that children encounter naturally. Because of this, the immune system can handle getting vaccines to build immunity to diseases and fight minor illnesses at the same time. However, vaccines may cause mild side effects. These side effects are very minor and...
4. Write Short Page Summary

- Use page summaries to help users **quickly identify** the most important messages and more **easily find key information**.

- Include **1 sentence** to ensure messages are **concise**. If longer than 2 sentences, **consider bullets** or a space between paragraphs. *Parents missed or glossed over summary boxes that were too long.*

- **Bold key phrases** and avoid italicized text. *Parents did not perform as well when summary boxes did not include bold text or used italicized text.*

- Use **active text that is direct and easy to digest**. *Parents did not respond as well to messages that were passive, overly general, or not in concise, direct statements.*

- Structure summaries so most important words appear in the **first 3-5 words** of the summary.
4. Write Short Page Summary

Works Well:
Key phrases bold, concise summary with actionable information. Two sentences includes a break in between.

Works OK:
Includes bold and italicized text. Italics did not work as well as text that was only bolded.

Needs Improvement:
No bold message. Long summary, not written in active voice.
5. Identify and Prioritize Key Messages

- Identify the single most important content message for each page.
- Use inverted pyramid style of writing. Place the most important info first. Parents performed best on pages where the most important information was included at the top of the page.
- Ensure each key message is clear and that critical information stands out.
- Avoid pages that begin with features that overshadow the most important information.
- Avoid placing fact sheets and resources at the top of the page. Parents stated that they wouldn’t start by going to the fact sheet.
- Avoid placing content in PDFs. Most parents stated that they didn’t want to open a PDF to find important content.
5. Identify and Prioritize Key Messages

The redesigned page quickly answers key questions that a parent might have about the vaccine.
6. Structure Content Based on User Goals

- Consider **users’ key goal** in coming to the page.
- Structure pages to **answer users’ key questions**.
- Identify the **optimal path a user should take** to explore additional content. *What should users do after visiting the page? What resources would be most helpful? Where should they go next?*
- Highlight the **most important links** to make them **easy to find** and help users to know what to do next.
- Use **callout boxes and action buttons** to highlight the most important links and **help direct users along their journey**.
6. Structure Content Based on User Goals

User Goals & User Journey:

The 11-12 year old page clearly considers users’ questions (how many vaccines will my child receive, what are they, what do the vaccines do, etc.).

The page begins with 1. a key message to **answer users’ top questions** (page summary box) and then places 2. the **most important information first** (a list of vaccines with links to additional info about each vaccine).

After the list of vaccines, the section ends 3. **with an ‘action button’** to view the full schedule. This button helps to direct users to the next most important resource that they may want to visit.
7. Highlight Key Content with Callout Boxes

- Use **colored callout boxes** to draw attention to key content. *Colored callout boxes made it easier for parents to find tips and key messages.*

- Use **headings** to summarize content.

- Use **bold text** to highlight messages.

- Use **bullets** to help break up content and make it easier to scan.

- Add **icons or an image** for visual interest.

- **Do not overuse** as it may impact usability. *Pages that had too many callouts or too many different styles/colors of callout boxes felt cluttered to parents.*

- Select **one (or two styles)** for callout boxes. Use **light background colors**.
7. Highlight Key Content with Callout Boxes

Example of callout boxes that use icons, headings, bold text and bullets to communicate key messages.

- Treat side effects from vaccines by:
  - Putting a cool, wet washcloth on the sore area
  - Asking your child’s doctor about using pain- or fever-reducing medicine

- A mild illness is usually not a reason to reschedule a vaccination visit. It’s important that children get their vaccines on time to get the best protection against serious diseases.
8. Chunk Text for Easier Scanning

- Use smaller paragraphs / blocks of text.
- Ensure page has lots of white space so page feels less cluttered.
- Use lots of headings to break up the lists on the page.
- Use bullets, lists, callout boxes, images, and modules to break up long paragraphs of text.
- **Bold** key phrases and avoid bolding entire sentences or lists.
- Avoid two columns or modules on the left/right side of pages. *This makes content harder to scan (on larger viewports) as this interrupts the flow of reading and scanning.*
- **Use short chunks with highlighted messages:** Key information needs to be bulleted or in callout boxes to make it stand out as mobile users swipe very quickly up and down a page.
8. Chunk Text for Easier Scanning

Example of how taking content from paragraphs of text and placing it into a bulleted list improves readability and ease of scanning.

What are the side effects?
Most children don't have any side effects from the shot. The side effects that do occur are usually very mild, such as a fever, rash, soreness or swelling where the shot was given, or temporary pain and stiffness in the joints (mostly in teens and adults). More serious side effects are rare. These may include high fever that could cause a seizure.

What are the side effects?
Most children don't have any side effects from the shot. The side effects that do occur are usually very mild, such as:
- Soreness, redness, or swelling where the shot was given
- Fever
- Mild rash
- Temporary pain and stiffness in the joints

More serious side effects are rare. These may include high fever that could cause a seizure.
8. Chunk Text for Easier Scanning

**What NOT To Do:**

1. Avoid bolding large sections or sentences of text.
2. Avoid the use of checkboxes unless there is a need to use them.
3. Carefully consider whether or not to use multiple columns (on larger viewports) as it can interrupt the flow of the page.
8. Chunk Text for Easier Scanning

What TO Do:

The 1-2 Month page is an excellent example of a page that is chunked well, easy to scan, and visually appealing. Key features:

1. Includes appealing images
2. Includes page summary
3. Several bulleted lists
4. Lots of headings
5. Ample white space
6. Use of callout boxes
7. Use of buttons for key links
9. Make Key Links Stand Out

- Highlight links so that they stand out.
  - Place links
    - on a new line so they don’t get lost within a paragraph of text.
    - at beginning or the end of sentences.
    - at the beginning of bullets.
  - Try to avoid links in the middle of a sentence.

- Use callout boxes to highlight important links.
- Use ‘action buttons’ to emphasize important links.
9. Make Key Links Stand Out

**What NOT To Do:**

1. The first example shows a number of links that are hard to see because they are buried within paragraphs of text.

2. The second example shows an example of using too many vertical cards for related items. In UX testing, using too many vertical cards in a row acted like a ‘scroll stopper’ and users tended not to scroll to the bottom of the page to view additional content.
9. Make Key Links Stand Out

What TO Do:

1. The first example shows a list of links nicely grouped in a 2-column block list and includes an “action” button to view more.

2. The second example includes a bulleted list with the links appearing at the beginning of each line with an “action” button to highlight an important link.

3. The third example shows how placing a link on a new line can help the link stand out visually from the content.

Example

What vaccines will my 11–12 year old get?

At 11 - 12 years old, your pre-teen should receive the following vaccines:

- Meningococcal Conjugate Vaccine (1 Dose)
  - Helps protect against some of the bacteria that can cause meningococcal disease, including sepsis and meningitis.
- HPV Vaccine for Preteens and Teens
  - Helps protect both girls and boys from HPV infection and cancers caused by HPV.
- Tdap Vaccine (1 Dose)
  - Helps protect against tetanus, diphtheria and pertussis (whooping cough).
- Flu Vaccine (Every Year)
  - Helps protect against flu virus.

View Full Vaccine Schedule
10. Design Navigation to be Clear, Concise, Easy to Understand

- Ensure that the navigation is easy to understand and logical to users.
- Link labels should be clear, concise, and descriptive.
- Avoid labels that use “marketing-speak”. Instead use clear labels.
- Used title case for capitalization in navigation (first letter of every word capitalized)
- Use concise labels and consider the length of the titles. Try to keep structures to 7-10 links (for each level of navigation).
- Place the most important links at the top of the list. Consider the order in which users might want to digest the information and design the navigation to correspond to that.
10. Design Navigation to be Clear, Concise, Easy to Understand

Current Navigation:
The current site had several links that wrapped onto multiple lines or use long, overly complex link labels such as “Protect Your Child at Every Age,” “Making the Vaccine Decision,” and “Diseases that Vaccines Prevent.”

Redesigned Navigation:
The redesigned navigation uses shorter labels that are more descriptive and clear.

*Parents were 32% MORE successful using the Digital First navigation than the Current navigation.
10. Design Navigation to be Clear, Concise, Easy to Understand

Use Clear Labels:
- Protect your child at every age → Vaccination schedule
- Making the Vaccine Decision → Why vaccinate
- Diseases that Vaccines Prevent → Your child’s vaccines

Current Nav

Digital First Nav
11. Use Images that Add Value and Support Key Messages

- Use images to add visual appeal and interest.
- Images can be used to help brand a group of pages, reinforce the page title, and set the tone for the page.
- Select images that add value and support content key messages.
- Use images to help break up content and make a page easier to scan.
- Avoid using lots of images solely for decoration.
11. Use Images that Add Value and Support Key Messages

**What NOT To Do:**

Parents thought some images on the Digital First pages were too big or did not provide any additional value.
11. Use Images that Add Value and Support Key Messages

What Worked WELL:

The images on the “age” pages worked to:

- Brand page titles
- Provide visual interest
- Set a friendly tone for the page content
12. Optimize Infographics for Digital Consumption

- Use a Digital First approach by designing images first for digital consumption and then using these images for print materials.
- Use images from infographics that provide additional value to help illustrate a point or make info easier to understand.
- Redesign images from infographics to format them for the web by making sure that they are simple, easy to scan, easy to understand, and not overly complex.
- Avoid using images that are designed for print.
- Avoid using images with text when possible.
- Avoid using complex images with content in multiple columns.
12. Optimize Infographics for Digital Consumption

What NOT To Do:

1. The first image serves as a title for the infographic and provided little value when added to the webpage.

2. The second image has content in multiple columns and was hard to scan on the web as it was not designed for a Digital First experience.
What Worked WELL:

The symptoms image helps to visually display content in a way that’s easy to scan.
Part IV: Usability Study
Research Questions

- We tested our proposed digital first pages against the current pages to determine whether **digital first designs**
  - contribute to greater success in finding key vaccination messages,
  - are easier to use,
  - and provide a better user experience.
- IF digital first designs performed better, what digital first element was responsible for the greater success?
Methods

- 16 parents (male/female)
- Even number of participants (8 and 8) viewed the pages on a desktop and a smartphone.
- 2-phase study

**Phase 1** - participants randomly assigned either the current pages OR the digital first pages in which they were to perform tasks and look for information

**Phase 2** - same participants were shown the alternate version as well, and asked to compare the two different versions and provide feedback on “ease of use” and “look and feel”
Current Parents’ Website

Digital First Parents’ Prototype
Part IV: Usability Study - Results
**Bottom Line:** Parents were **24% MORE successful** using the Digital First prototype than the Current website.
Results

Finding Key Messages (Finding Content on Page)

100% Digital First
Success in completing ALL tasks

82% Current Website
Success in completing ALL tasks

Bottom Line: Parents were 18% MORE successful using the Digital First prototype than the Current website.
Results

Finding Key Messages (Navigating to Content)

87% Digital First
Success in completing ALL tasks
- Desktop: 87%
- Mobile: 88%

55% Current Website
Success in completing ALL tasks
- Desktop: 56%
- Mobile: 54%

Bottom Line: Parents were 32% MORE successful using the Digital First prototype than the Current website.
Results

Ease of Use

87% Preferred Digital First version over the current website

Bottom Line: Parents using the mobile version of the Digital First site had higher preference ratings, with 91% of them preferring the Digital First prototype.
Results

Look & Feel

92% Preferred Digital First version over the current website

Bottom Line: Parents using the mobile version of the Digital First site had higher preference ratings, with 95% of them preferring the Digital First prototype.
Part IV: Usability Study – Participant Comments
### HPV Vaccine for Preteens and Teens

**Fact Sheet for Parents**

HPV vaccination is recommended at ages 11-12 to protect against cancers caused by HPV infection.

**Why does my child need HPV vaccine?**

Human papillomavirus (HPV) vaccine protects against cancers caused by HPV infection. HPV is a virus that infects teens and adults. About 14 million people, including teens, become infected with HPV each year. HPV infection can cause cervical, vaginal, and anal cancers in women and oral cancer in men. HPV can also cause anal cancer (cancer of the rectal area), and genital warts in both men and women.

### Immunization Schedule

#### 11 to 12 Years

There are four vaccines recommended for preteens—these vaccines help protect your children, their friends, and their family members. While kids should get all 3 HPV vaccines every year, the three other preteens vaccines should be given when kids are 11 to 12 years old. There are some vaccines your teen will need more than one shot of to have the best protection.

The following vaccines are recommended by the American Academy of Pediatrics (AAP), the American Academy of Family Physicians (AAFP), other medical societies, and CDC:

- **MenACWY (Meningococcal Vaccine)**
  One dose of meningococcal conjugate vaccine helps protect against some of the bacteria that can cause meningococcal disease, including sepsis and meningitis.

- **HPV Vaccine**
  Human papillomavirus (HPV) vaccines help protect both girls and boys from HPV infection and cancers caused by HPV.

- **Tdap Vaccine**
  One dose of Tdap is recommended for protection against tetanus, diphtheria, and pertussis (whooping cough).

- **Flu Vaccine**
  Everyone 11 to 12 years of age and older should get a flu vaccine every year.

### Vaccine Benefits

The vaccines recommended for preteens can prevent very serious diseases like meningitis and HPV cancers. Even those like pertussis (whooping cough) or the...
Current Website

- “This one is **super text-heavy** and it’s also **hard for me to scan.**”
  – Mom, Kids’ Ages: 2, 5, Desktop

- “It feels busy and wordy. I’m having a little trouble skimming”
  – Mom, Kids’ ages: 5, 13, 18, Desktop

- “From a parent's perspective, at the end of the day, that's a whole lot of words I've got to read to figure out where to click.“
  – Mom, Kid’s Age: 1, Desktop

- “There’s a lot of content I probably wouldn’t read. **It feels like a wall of text.**”
  – Mom, Kids’ Ages: 9, 22, Desktop

- “The most important information is not apparent.”
  – Dad, Kids’ Ages: 10, 13, Desktop
Current Website

- “This is not easy to read [...] I’m confused. I’m scrolling back and forth and want to see the full image.” She tried to pinch and zoom on the chart. “That graphic is not mobile-friendly. I wish I could click on it.”
   – Mom, Kid’s age: 7, Mobile

- “Seems like kind of a lot of words, that knowing me, I probably wouldn’t really read. I feel like it’s not clear they are really recommended [vaccines].”
   – Mom, Kids’ ages: 5, 13, 18, Desktop

- “I’m unlikely to open a PDF. [...] [This page] is drier and a little more boring. I don’t really want to read it.”
   – Mom, Kids’ Ages: 2, 5, Desktop

- “It’s a lot. It’s too much. I see PDFs I’m not even going to click on.”
   – Mom, Kid’s age: 7, Mobile
Comments

Digital First Website
Digital First Website

- “I like the colors. It takes something pretty basic like vaccines and draws your attention to where you should be clicking.”
  --Mom, Kid’s Age: 1, Desktop

- “Much more intuitive. Delivers the question every parent has, ‘What do I need to have for the age?’ Seems more consumer-centric and consumer-friendly.”
  --Dad, Kids’ Ages: 10, 13, Desktop

- “It’s easy to glance [and find] what’s going to be given and what’s going on in the future.”
  --Mom, Kid’s Age: 1, Desktop

- “No guessing needed. [...] Less cluttered. It’s already confusing, you need it to be broken down as easy as possible. I thought this was easier to get to.”
  --Mom, Kid’s Age: 8, Desktop
Digital First Website

- “Seems pretty straightforward [...] It’s a lot better because the most important information is easy to access versus SME gobbledygook.”
  – Mom, Kid’s age: 7, Mobile
- “I like that it’s broken down into smaller chunks of information. It’s easier to digest and easier to find what you need.”
  – Mom, Kid’s Age: 1, Desktop
- “There’s no guesswork on this one. It looks really thorough here. It’s laid out a lot better—it’s easier to see what you need.”
  – Mom, Kid’s Age: 8, Desktop
- “Much more helpful. It delivers the content in a way I expect to see it.”
  – Dad, Kids’ Ages: 10, 13, Desktop
Coming Soon…

- https://www.cdc.gov/vaccines/parents/index.html
THANK YOU

- Special thanks to:
  - Cathy Hogan (CDC, NCIRD)
  - Stacey Thalken (CDC, OADC)
  - Annette Almonte Malagon (Northrop Grumman)
  - Julio Castro Perdomo (Northrop Grumman)
  - Jennifer Teeter (Northrop Grumman)
  - Cari Wolfson (Northrop Grumman)

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