

>> This is the last session in our management track, so if that's what you're here for, you are in the right place. Up next is Lisa Richman from the CDC talking about usability on the CDC vaccines site. Don't go away at 12, if you have time to stay for a group lunch, we have instructions on how to join that, and to continue the informal discussion about the topics that we've had this morning.

Good morning/afternoon everyone, my name is Lisa Richman from the Centers for Disease Control and prevention in Atlanta, Georgia. I'm here to talk today about an approach that we have begun implementing on several of our digital properties at the CDC, and the approach is called digital first. I will do four things this afternoon. First, I will explain what digital first is. Second, I will provide a bit of background about one of the websites in which we implemented this approach. Third, I will discuss some digital first techniques that we use when implementing this approach. Lastly, I will walk you through the user testing that we did on the site to determine whether this approach was successful or not.

First of all, what is digital first? To answer that question, we're going to go back in time, about three years ago, you may remember Zika happened. Zika was really huge for us as an agency. During the Zika outbreak, the Zika website grew, like, exponentially. Content was constantly being added to it, it was an overwhelmingly massive site. What happened at that point was that we came in and did a couple of things. We evaluated the site and made recommendations for improvement. At that time when we did this evaluation of the Zika site, we noticed a couple of things which we have folded in to this digital approach that we're working from. The first thing we noticed is that there was a lot of high-value content on the site. We like to think of this content as buried away- in PDFs, infographics, fact sheets, all of this great, printable material that you can't really read on your phone. There was also a high percentage of mobile visitors at that time. At that time, the Zika site was the number 1 CDC site over the last decade, aside from the H1N1 swine flu site 10 years ago. The last thing that we noticed was that the content was long and wordy. People thought of it as a wall of text that they couldn't seem to penetrate. They just wanted to figure out what they had to do. These findings led us to the development of this approach, which we coined the digital first approach, which is a combination of several principles.

First, think digitally. Ensure that every piece of information presented is fully optimized for digital delivery. This includes PDFs, fact sheets, infographics, and all printable materials. Second, optimizing and streamlining content using well-known plain language techniques. We are all familiar with these techniques, but what we needed to do was to implement these techniques in the digital product. Lastly, good old-fashioned UX principles. Using digital first approach we optimize our content for digital delivery from the very beginning. Ideally, we don't back into it. We don't take PDFs and print materials, and then try to make them digital friendly. We think digital from the beginning, so when we create our materials, we think of them primarily for a digital audience. This is important now

especially, as analytics.gov recently reported that more than half of all visitors to a federal website are coming from mobile devices.

I will talk now about the website that we implemented this approach on, and I will give you a little bit of background on the site. Vaccination, especially childhood vaccination, is a very important message at CDC, especially now with measles. We have a site implemented and developed specifically for this topic. To give you a little background, the primary audience of this site was parents who want information on vaccinations for their children, preteens or teenagers. The message, very important: vaccinate your children from potentially life-threatening, very serious diseases.

When we started looking at how the content was being viewed, we discovered that 62% of all visitors to the site were coming from mobile phones. That is very important. Similar to the Zika site we had worked on before, we had very similar concerns. It was great content, but locked away in these PDFs. The navigation was not intuitive, and the content again, think of a wall of text. It was just this heavy wall of words, and it was not optimized for a mobile presentation.

Now, we like to think of our primary visitors to the site as parents, who are busy, on their phones, maybe trying to get to a doctor appointment. They want to know what vaccinations their children need. Holding this vision in our heads helped us with the design task placed before us.

What I will do next is walk you through our top 12 digital first techniques that we implemented on the site to move us forward into this new digital first design approach we want to get to. You can refer back to them later.

Number 1, big surprise, we design for mobile. We really went mobile first with this site, and that involved putting the most important content on the first two screens. I will also add that going with this mobile first approach also went into how we presented wireframes to the stakeholders. We didn't present the big screen wireframes first. We presented mobile wireframes and started there. That was helpful for us because when a lot of the content developers saw their content in a mobile wireframe, they were impressed. They thought, maybe we need to rewrite, maybe we need to think more about our key messages and streamline what we are trying to say.

Here is an example of a mobile wireframe we did. This is how we began the page. We pulled up the messages, pulling the most common, important content up on the first few screens. We know with mobile we have very limited real estate to work with. We want to come out of the gate with our most important message and you will see that is right here. For the measles page, it says getting the MMR shot is the best way to protect against measles. Doctors recommend all children get the MMR shot- if there is one thing we want people to walk away from this page with, it's that information.

Second, we optimized page titles by leading with keywords. I will add we worked with an SEO expert to make sure we were considering SEO best practices in all of our page titles, and that was very important to us. We haven't done this study yet but we will follow-up once the site is launched with an SEO study. What we are going to see is if our SEO best practices did actually succeed in improving the rate of our digital first pages. We think they will, we just don't have enough data to confirm yet.

Number three: We used descriptive headers. This helped us break up these text blocks, but also help set expectations. When we had visitors come to the page, they knew where to go, they knew they were on the right page, they knew what the content was supposed to tell them.

Here are two different examples. One thing we recommend is using mixed case in headings. In this example, we have a heading with a key message. The key message is the heading. If they get one thing from the page, it's that vaccines do not make a mild illness worse. That is also answering a question. That was a big question a lot of our visitors have so we wanted to tackle that with the heading so they knew that immediately.

Number 4: Write a short page summary

Something else we discovered in previous studies that we went ahead and implemented on the vaccine site was the use of something called a page summary. You can imagine at CDC our content is very dense, it's of a very scientific nature. It can be difficult to read and understand. It's a lot of jargon. We created page summaries that were very simple. There were a couple of guidelines in use when creating them. We created these content summaries to quickly summarize the content so when a visitor came to the page, they can read the summary and have a better idea of what the page is going to tell them.

Here are three examples. This is needs for improvement. The one over here on the far left is the one we felt worked best and we found in testing, this one actually worked best. The one that worked best is where we bolded key phrases and kept it very concise but very actionable, so we used an action voice.

Number 5: Identify and prioritize key messages

Also, we worked a lot with content developers and the health communicators to identify and prioritize key messages. We did this before we would even look at a page. We would have a meeting with content developers and we would say, what is the most important key message on this page? A lot of times there were several, so then we would say you have one, give me one, we can have more, but you have to give me one. That was a great technique, because that not only helped us better understand key message of the page so we could craft a design around that, but at several points, it ended up helping the content developers. They would say "I think I have to rewrite this..." and we would say great, come back with a key message, and then we will work on the design.

Starting with the key message was critical, before we even wireframes or showed a design. Here's an example I showed you earlier of the way we prioritized and took the key message and put it at the top. This was the key message about getting the MMR shots. The way we framed it to them, if you have one thing you want this visitor to walk away with, what is it?

Number 6: we structured content based on the user goals. Here is an example. In this example, we include the summary box at the top of the page. I had gone over this in a previous slide. Number 2, this is where we pulled up the most important information. This is for someone coming to the page because they want to get vaccination information for their 11 and

12-year-old. What are the vaccine they need? Right here. We don't want them to read through all this information, we want it right at the top. Number 3, an action button. They want to see the whole vaccination schedule, they can. But it's placed below this more relevant content.

Number 7, we used callout boxes to highlight key content. This is something that performed really well during usability testing. We used color to draw attention to the content. The icons also worked really well. We used headings, we bolded text and used bullets when it made sense. Again, these tested really well and this was a great way we could also incorporate these key messages throughout the content.

Number 8: Chunk text for easier scanning. We chunked/grouped text so that it was easier for our visitors to scan. Our visitors did not want to read walls of text. They wanted to scan. Most likely they had a very specific mission when they went to the page. They want to find the information they wanted, and get out. Here is an example of how we grouped the content. We used bullets. It's easier to scan down and find what you need to know.

Here are some things we found not to do. Don't bold large sections of text or the entire sentence because it's just overwhelming. We also had checkbox icons. We thought they were cute. It didn't work. They wanted to click them and nothing happened. That was another thing we don't recommend doing. Also, when we presented content in this dual column presentation, it didn't work. It seemed to interrupt the flow of the scanning of the page. They would scan the page and they would get down to this and it didn't work. It was a readability issue for our participants.

What we recommend is using appealing images, I talked about using the page summary and doing all those standard best practices we all know. Use white space, bullets, and minimal bolding, break things up.

Number 9, make key links stand out. For important links, we either frontloaded or included them in callout boxes I brought up earlier, or action buttons. Some things not to do if you want your key links to stand out are bury them within a text. Another thing we found, this goes back to that multi-column layout I talked about earlier. If we presented a text link in these columns, it was like we call it a scroll stopper. They would scroll down the page and just stop. They didn't seem to process this. We don't recommend this presentation for hyperlinking.

What to do? Obviously, group them in a nice list and try to frontload at the beginning if you can.

Number 10: We focused on ensuring navigation was clear, concise and easy to understand. We focus a lot on navigation labels. We try to avoid labels with what we call marketing speak. We found this worked especially during user testing. You can see the navigation on the left side was very long and overly complex. On the right included short, to the point, concise labels.

Some examples of labels we changed, "protect your child at every age" was a campaign, but meaningless to the visitor of the page. We changed it to vaccination schedule. We took making the vaccine decision, changed it to ->why vaccinate, and then diseases that vaccines prevents -> your child's vaccines.

Number 11, we used images primarily to add value and support key messages. We did not use images just to throw on the page because we thought it looked cool or we needed an image. Each had a very specific purpose. Some things not to do. We found this during user testing. Don't add images that are too large or overwhelming or don't provide additional value. See this great image of Miles- didn't mean anything to anybody. Did not resonate with visitors.

>> What worked well is to add images that reinforce the page title. These are images we used on the page where you would go to find vaccination information for your child who is 1-2 months, or 11 to 12 years. Image tells you I'm on the right page. This helps set expectations you made it. It helps clue visitors in on the type of content they could expect to find on the page.

Lastly, number 12: Optimize infographics for digital consumption. This was big for us. This is what we as an agency had the hardest time getting traction with. We optimized infographics for digital consumption. I talked about how in the Zika, we learned our lesson, that there were all of these great infographics, PDFs, etc. Sometimes there were key messages in them that weren't in the HTML. The visitors couldn't get to the key message because they had to open an info graphic on their mobile device. We learned a lot from this experience. Our solution wasn't just to re-create the entire infographic. It was to identify that key imagery and pull that out of the infographic and into the HTML. I will give an example of how we did that. >>

What not to do. These are some lesson we learned from user testing. You don't need to cut out an image that spells out measles and put it on an HTML page. I think we all know why. It won't resize, you don't need an image that says that for digital consumption.

Another example, I'm going into this two column layout again, we have this image here and we have the text on the left and this info graphic element on the right, and we thought that would be great to pull up into the HTML, but it didn't test well. Again, it was a two column thing. If we were to redo that, we would take the text, pull that up and out into the HTML, and repurpose that small image to the right. Perhaps that would not perform well either. But, it will probably do better than image number 2.

>> An example of what works well for us is this image we have of this child, and it lists out the symptoms of measles and points to the places on the body where you would have those symptoms. This had a very specific purpose and added high-value to the page. It tested really well, it resonated well with visitors, and it was to the point. That was one we pulled up into the content and added a lot of value.

>> We do all this work, how did it go? Was it more successful? Did it test well? Since this was one of the first large-scale websites we implemented this approach on, we knew we had to do user testing to tell whether this approach was successful or not, and whether we wanted to continue doing it.

During the study we look at three things. We wanted to know if the digital first prototype design we developed contributed to greater success in finding key messages. That's why most come to our site, to find those key messages. We wanted to know if the prototype designs easier to use, and if the digital first prototype designs provided a better user experience overall.

We performed a think aloud. An in-person study with 16 participants who were parents and had children of vaccine age. Half the participants were on a desktop or a large laptop, and the other half used their mobile device, specifically smartphones. There were two phases. In phase 1, participants were randomly assigned the current pages- these are the pages without digital first redesign- or an upper prototype page and asked to perform information seeking tasks. In phase 2, the same participants were shown the alternate version. If you started with the current site, you are then shown the digital first prototype, and vice versa. After that, they were asked to provide feedback on both versions on ease-of-use and look and feel.

>> This is a quick overview of our two different versions. We have the desktop and the mobile versions. We have the current site on the left and digital first prototypes on the right.

>> What did we find? We found parents were 24% more successful in finding key messages using digital first prototype than the current website. We wanted to dig deeper into this number because what we wanted to understand was easier to find information on the page, or easier to navigate to the page that had the information, or easier to do both?

When we dug deeper, we found parents were 18% more successful using digital first prototype than the current website when they were already on the page that had the information. If they were on the page, looking for the key message or trying to complete a task, it was 18% easier to complete the task on the digital first prototype.

What about navigation? We found that parents were 32% more successful using digital first prototype than the current website on tasks where they had to navigate through various pages to find information. This ties directly into the navigation changes made that we talked about earlier. This tells us not only did the digital first approach make it easier to find specific content on the page itself, but it made it easier for the visitors to navigate through pages to find information.

When asked which version was easier to use, 87% prefer the digital first prototype. When we separated by desktop and mobile device, 91% -this is our key audience, on their phones- found it easier to use the digital first prototype pages.

>> When asked which had a better look overall, 92% prefer the digital first version over the current website. Again, when we split between desktop and mobile, we found 95% of the mobile users preferred the digital first version for look and feel over the current website.

I think what really resonated with us was comments. I will also walk you through some comments we received from participants. When we show participants the current website: super text heavy, hard to scan, wordy, hard to skim. This is my favorite: "From a parent's perspective, at the

end of the day, that's a lot of words I got a read to figure out where to click. Feels like a wall of text. Most important information not apparent. Also, not easy to read. It seems like a lot of words that, knowing me, I probably wouldn't read. I'm unlikely to open a PDF. It's too much, I see PDFs, I'm not even going to click on it."

In contrast, here are comments from the digital first website: It draws your attention to where you should be clicking, more intuitive, more consumer centric and friendly, easy to glance at, no guessing needed. Less cluttered, straightforward. Most important information is easier to access. I like that it's broken down into smaller chunks of information. No guesswork, easy to see what you need, more helpful, and it delivers the content in a way = I expect to see it.

>> As for the new digital first site, it should be coming out soon so keep an eye out. It was supposed to be released Friday but that didn't happen. Hopefully over the next week or two it will be up- it's still in clearance, but soon you can go to the site and see the whole new design. I am up here speaking with you today, but it takes a ton of people to do the work we did. We had amazing help, communication to specialists and developers to make this happen. I want to give special thanks to Kathy Hogan, and various people who helped. My name is Lisa Richman, if you have questions for me, you're welcome to ask after the session or feel free to email me. Thank you.

>> [Applause] Any questions?

[Participant comment/question off-mic]

The question was how do we identify our user goals? We did several facets of research. One thing, we talked a lot with the content developers. We wanted to really understand what was the intent, what were key messages, what did we want people to get out of it. We did a lot of metrics research. We did a lot of metrics analysis to understand where users were going, what were their navigation paths, we looked at different device types. We had done previous testing on the Zika site, so we found a lot of great information on that. We also looked at 4C ACSI customer satisfaction and looked at that as well. >>

[Participant comment/question off-mic]

Do we get pushback in the digital first approach would rule out vulnerable populations and how do we mitigate that? A great question. I cannot fully answer that because a digital first approach is digital. If we talk about formal populations that do not have access to digital devices, we have other communication strategies and groups that push out information to those groups, and that is our health communication team. They have other strategies which I cannot speak to, but they maybe work with health departments and things like that. I will say, in the past have been studies about communities who don't have access to desktops and only to their mobile phone. There are vulnerable populations that *only* have access to digital phones, so I would say we probably help access to those communities more by making the information more viewable from their digital devices, and that's a great question. I don't have the answer.

[Participant comment/question off-mic]

Do we get pushback from scientists who want to dump more content on the page? Absolutely. It's our biggest pushback.

Especially, I will include, we have scientists. That is probably our biggest challenge at CDC, we have great health communicators. They have kind of bought into this digital first approach, because they feel like we have done enough testing to know that the content, which is so valuable, isn't getting to people. When we come at it from that perspective, that your content isn't bad, you have great content, it's just not getting to people. When we hit it from that approach we get a lot more buy in. We use a lot of user testing. We go out and talk about testing, we show comments to engage stakeholders in the fact that this approach works and it's successful in getting the message out better, and when we come at it from that perspective we get more buy-in. It's still a challenge. >> Here's what we did with vaccines for that group. We are working on a long project, so this testing was for the very first site. We did testing primarily to show them, look what we can do with one site, shall we keep going. When we showed them the data they said yes keep going. We use user testing in that way. We should understand if our staff is going in the right direction but we also use it to engage people more in the work we do and have them work with us. I hope that helped. >>

[Participant comment/question off-mic]

The question was on usability testing. They did user testing in terms of completing tasks with only one. They completed all the tasks with the old version. After that we would show them the new version, and that was for those comparison questions: which has a better look and feel and was easier to use. >> They did not do the tasks with alternate system.

We initially were not going to do it that way, we were going to show just one but then we said, we really want to comparison that's why we through the comparison at the end. We didn't want to do it in the beginning because we didn't want to bias the study. >>

The question was regarding the labels we worked on for navigation and who we worked with and how we made that happen and impact on global navigation. The way CDC is set up, it's when you are on the flue site, most of the navigation is flue. When you're on the flue site, all you care is flue. You don't really care about cancer. From that perspective, it didn't butt heads against our global navigation. The other part of your question, who did we work with the come up with those changes? It was an extremely collaborative project. We worked with UX specialists, but we also worked with content developers and health communicators. We would have these Big Ten people meetings which included all the folks I just named, and we would go through our recommendations, but we would talk to the content people and say, this is what we think but how does this sound for you? A lot of times, what we ended up with was a combination of what we presented and what they added back to us because they know the key message of the site. They know the key audiences. We don't like they do. It helped for us to take it and put our perspective on it initially, and take it back to them and work with them. There was a big conversation

about disease that vaccines prevent and your vaccinations. Anyway, I can't even remember the conversation. Our content developer had a good point because we want to also focus on the diseases. You're getting vaccinated for diseases, and they are potentially deadly, so we don't want to leave that out of the equation. It was conversations like that that help us refine our labeling. >>

[Participant comment/question off-mic]

There was a question about the dual columns preventing scrolling and I have to say, I don't know. If you email me, I can get you that information. That is a good question and I don't know if it was desktop only, mobile only or both. I think in one of the examples, if it's still up I will show on one of the examples where we had -- one was on mobile and one was on desktop.

This would have been on mobile. We couldn't break it up. It's one image. This would have been on a mobile device and desktop. The other issue where we have these modules side to side, this would have been on desktop, because on a mobile presentation those will all stack. As it goes down we have a responsive site. An iPad or tablet, you might see two together. The problem was not putting the link inside a card it was putting the cards in this row. We've had these columns and rows. It's just kind of it also seems kind of busy. They resonated to that as well. >> I can't remember what we did. I think we took some of those out or did a presentation that was more just one column. Or bundled the links together or presented them differently. >>

[Participant comment/question off-mic]

There is some plain language research that has come out recently that has come out that said not to use questions as headings I don't know if that's because maybe it prevents the ability to scan, to scan. Is that of asking the question we will answer in the heading? We will flip it and do that. >>

[Participant comment/question off-mic]

People are still going to develop PDFs. We cannot stop that and there are a lot of reasons for PDF. You may need printable material. The key is, PDFs are to print. They are not to view on your device. We try to work with people and asked them if they have a PDF, what is your main purpose? And what is the years ago? Is the purpose for some of the printouts or to just view. If they save you, we say you don't need a PDF. If they say print out, we say, you need a PDF and when they say both, we say keep your PDF to print but let's pull up the most important contents of use of so it's viewable on the device.

>> Thank you. Your contact information is there. If you would like to continue the conversation in general about user experience and you're not already a member, there is an online community of practice through digital.gov. The easiest way to find it is to go to digital.gov and there is a link for communities. Also, Jean Fox organizes this event or led the organization would be grateful to hear from you if you're interested in doing a webinar on user experience topics or suggestion for topic, Jean is running around and her contact info is available. If you'd like to

continue the discussion today, there is an opportunity for community lunch in the cafeteria upstairs. If you leave through the first Street exit, will be the last thing on your left before you leave. There are restrooms up there as well. There's the opportunity to buy food in the cafeteria, or if you brought something with you, it's easy to bring in your own food as well. That meeting point is 12-ish. Thank you so much for coming today. I don't know if there'll be an evaluation form or not. Given the crowd, I'm guessing there will be. Please fill that out to improve future events. Thank you. The recordings should be online. So that you can experience the sessions you missed and also relisten to discussions that you love and would like to share. >>

[Participant comment/question off-mic]

Whether the slides will be available? I do not know the answer. Focus has been on posting audio. I don't know if all the slides are available or not.

Stay tuned on that. >> Take you so much, everyone.

[Applause] [Event Concluded]