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Landscape Analysis and Content Strategy for COVID-19 State Response Websites

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LANDSCAPE ANALYSIS AND CONTENT STRATEGY
FOR COVID-19 RESPONSE WEBSITES

A Capstone Experience/Thesis Project Presented in Partial Fulfillment

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By

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ABSTRACT

There is a massive flow of information about the COVID-19 pandemic from news coverage, daily announcements from local and national political leaders and health authorities, as well as social media. Because of this, a focus on providing clear, honest, and valid information is needed. One way to achieve this goal is through impactful state websites that can act as the main resource for COVID-19 related news.

This project will be analyzing three COVID-19 state response websites, kycovid19.ky.gov (Kentucky's website), oregon.gov (Oregon's website), and ldh.la.gov (Louisiana's website) in terms of their use of website design and crisis communication strategies. I will be looking at two apects of content strategy and website design — usability and impression — and three aspects of crisis communication— ambiguity, complexity, and predictability. This project will define these terms in detail. I then will analyze these aspects through looking at the homepage and a few pages linked from the homepage in detail. It will then offer the most important takeaways as a resource for these websites as well as any future content that may need to ulitize both design and crisis communication resources.

I dedicate this thesis to my mom and sister, Shannon and Morgan, who have always

supported me through everything I have done and inspire me to be a strong and beautiful

woman everyday.

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VITA

EDUCATION

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INTRODUCTION

There is a massive flow of information about the COVID-19 pandemic from news coverage, daily announcements from local and national political leaders and health authorities, as well as social media. This has led to an overabundance of information. People are overwhelmed with the fake and accurate news that swirls around them every day. This makes it hard for people to find a trust-worthy and reliable guide to help them make informed decisions about the pandemic. This is what makes COVID-19 state response websites so important. These sites should be the spot to obtain information and stay educated about the pandemic. Being an informed and conscious citizen is one way to help minimize the lasting impacts of the COVID-19 pandemic.

These sites are so vital in informing the general public that I wanted to know if they were succeeding at their job. I wanted to look at these state COVID-19 response websites and see if they were effective in both website usability and design as well as in crisis communication.

This project analyzes two areas of content strategy and web design and three areas related to health crisis communication. I define these terms then analyze three COVID-19 state response websites. I analyze the state websites of Kentucky, Oregon, and Louisiana. From this analysis, I provide a brief best practices source with my findings.

BACKGROUND

In this section, the basics of content strategy and crisis communication are defined and described. While the Analysis section looks in depth at how these themes relate to the websites, the Background section contextualizes within a broader scope these themes in general.

Content Strategy

A Content Strategy is the analysis and strategic documentation that is responsible for content creation and distribution. This would include responsibilities such as who will create and maintain content as well as how often content will need to be updated or re-evaluated. A content strategist looks at a client's business goals, analysis, and modeling, and in turn focuses those goals into a concrete plan for creating content that will make those objectives a reality (Casey). Content strategy is the way organizations are able to provide "the right content, to the right people, at the right times, for the right reasons" (Casey).

This strategy will be different for every organization as it needs to fit their individual aesthetics and goals. Once the purpose is defined the strategy created will guide the creation, publication, and maintenance of the content (Casey). For example, one business's main goal may be to increase the traffic to their website. A content creator would then formulate a plan that leads to driving an awareness of the business through content such blog posts or videos that target searchers who want to solve a problem or

find the answer to a question. They would want to make this business's content to be identified as a possible solution which would lead the searcher to click on their website (Gaspar). Another business's main goal may not be website traffic and rather providing useful content for current customers. Content to achieve this goal may be a blog with useful information about the company and products. A blog would create a large amount of content that can easily answer customers specific questions about the products and services offered. Producing content that helps a customer learn how to use a product themselves is very helpful in long-term customer retention (Gasper). The purpose of the content strategy will drive the plan of action to produce content that can help facilitate this goal.

Meghan Casey's *Content Strategy Toolkit* explains the "quad" approach to content strategy. This approach described the relationship between the different aspects that go into creating successful content and how it centers around the purpose of the website. The purpose is what all the other aspects should refer back to as the content is being created. The four elements surrounding this core are substance, structure, workflow, and governance (Casey).

· **Substance** is the content that the organization creates, its tone, and its relevance and meaning to the users.

· **Structure** is how content is organized and displayed so users are easily able to navigate and use content they need.

· **Workflow** is how the content flows through the organization. This includes aspects such as who will create ideas, who will publish, and who will maintain.

· **Governance** describes how often an organization updates and checks for

relevance of the content created to make sure it still meets this purpose.

A lot of times within an organization there is content being created, uploaded, and

maintained by different people. This can lead to common problems such as differing

tones and style of writing, confusing layout, and outdated content. A lack of consistency

can lead to confusion for a consumer of this content. This is where these aspects of a

content strategy come in. Substance, structure, workflow, and governance combine to

provide clear communication on the purpose and content, but also who will be in charge

of creating and maintaining the content in the short and long-term future. While all of

these elements are vital to an effective content strategy, this report looks at the first two

aspects, substance and structure, because I do not have access to who actually

encompasses the team for kycovid19.ky.gov (Kentucky's website), oregon.gov (Oregon's

website), and ldh.la.gov (Louisiana's website) and because of this cannot accurately talk

about a workflow or governance I am not privy to.

Techniques of Content Strategists

Professional Writing is about conveying information in the workplace. A

successful professional writer is able to inform, persuade, and instruct others within the

workplace and business environment. A professional writer can break down complex

information into clear and concise documents. Content Strategy's goals are the same. It is

taking content and making a plan for how to make that content easily readable and

navigable for the average user. A professional writer who is a content strategist uses

those skills and applies them to everything from professional texts to online writing technologies such as a social media channel or website.

There are many different techniques of professional writing a content strategist may use. The main two falling under the structure and substance categories of the "quad" approach discussed above. These distinctions can be used to evaluate the level of a graphic argument and relate to a user's affective impressions of visual presentation (Black 3). Different types of "graphic argument" such as layout can actually enable a user to adopt specific reading strategies which can either help or hinder their perception of that information (Black 2). This means that these skills go beyond simply the "looks" of a site. The importance of a content strategy and professional writing in general is to fit the purpose of the audience and the genre in a way that provides the most clarity and ease in order to achieve that purpose or goal.

Structural functions include features such as revealing a document's structure, developing cohesion through a document, and enabling an expansion or contraction. Stylistic function in design, on the other hand, hopes to achieve interest, convey the tone, establish credibility, signal emphasis, and indicate usability (Black 3). A content strategist will find an effective design solution to balance these different concerns. This solution should have an appropriate set of considerations which can be defined in terms of the purpose and how that purpose is affected by the audience, channel, content, client, and context of use (Black 5). The visual impact of a design and its actual usability should go hand-in-hand to form a well-rounded site (Black 6).

While there are many different ways to achieve an aesthetically pleasing and usable design, combining that substance and structure, I look at four specific aspects of design —legibility, graphics elements, structure, and impression.

· **Legibility** concerns the use of readable and legible fonts and "layout attributes" such as text alignment, appropriate columns, and text size to make it easier for viewers to read.

· **Graphic elements** concern the use of numbered or bulleted lists, charts, graphs, tables, videos or images, and other non-textual elements.

· **Structure** involves how the organization of the document supports and facilitates its purpose.

· **Impression** is the document's overall appearance. Is it attractive and approachable (Black 6)?

There could be many ways in which a content strategist checks and adapts these design elements. They could suggest increasing white space to improve the clarity of the structure of the document and maintain the clarity of the text flowing in a logical way. They could suggest different typefaces in headings, body text, and bulleted information to increase the visual variety or, they may suggest using different colors and graphic elements to pull a reader's attention where the creator thinks is important (Black 6). The main way a content strategist knows what types of design principles to add to a plan for their content is by going back to that core of the strategy or purpose of what they are trying to achieve and what design elements will make that happen.

State Websites

The need for individual state websites during the COVID-19 pandemic is vital. As of January 2021, mask regulation, restaurant capacities, general openings and closings are all being decided on a state-by-state basis. Although all of these websites are set up by the state governments, their main purpose or goal may be slightly different from site to site. Even a slight difference could have a great effect on the content and the design principles needed to achieve this purpose.

The main purpose for many of these sites is to inform the general public about the current state of COVID-19 in their area. This "informing" can include a lot of different information, but most of the websites serve to answer any questions a person may have as soon as possible. Audiences may need to learn how to contact someone about specific COVID-19 questions, what getting the vaccine will entail, and the newest local and CDC guidelines for quarantining. This audience is most likely adults that are coming to the site to see how general life-- work and school--- is being affected by COVID-19. Because it seems that the main audience for this type of content is the general public, it will be the site's main goal to provide accurate and relevant information that is in an easily navigable form.

There are many secondary audiences that these websites cater to as well. A common one is healthcare providers, labs, and facilities. Many websites include content centered around topics that are specifically healthcare related that the general public may not understand/need to know. This information includes how to report COVID-19, vaccine provider checklists, workflow for administering vaccines as well as other resources specific to medical professions.

State COVID-19 websites also produce content for those concerned with the economy such as small business owners. Content for this audience includes updates on details of the plan to reopen the state economy. Some sites also include specific guidance and requirements put in place by the governor for businesses such as bars and restaurants, gyms, salons, and many others. Such a complex set of audiences makes creating and maintaining these websites extremely difficult and that is why being aware of the overall goal of content is vital to making successful content.

Though the need for individual websites is apparent, a lack of understanding and lack of funding for a comprehensive content strategy can lead to flawed content and website production. Poor content strategy could lead to more people getting sick because if a website is not up-to-date or hard to navigate, people have a high chance of being misinformed because they will attempt to find information on less reputable sources. Taking an in-depth look at the potential purposes and audiences of these websites can help curate successful content.

Detailed analysis is also needed because information related to COVID-19 is heavily scrutinized and politicized. This makes it more important than ever to have both the design as well as the function of a site accurate and easy to navigate. If the site does not provide a positive user experience this could lead to users thinking that there was an intentional schewing of information or framing of information and quickly deem it uncredible.

Content Strategy and Health Crisis Communication

Researchers in public health and communication have investigated the problem of communicating health information during a crisis from several perspectives, including advice about how to inform people during a crisis through websites. The content created for these situations must utilize aspects of crisis communication as they work to minimize fear and misinformation as well as adapt science heavy information to user-friendly content that the average American could understand.

In general times of crisis, having a communication plan can protect and preserve an organization or community. In this digital era, a crisis communication strategy, or CSS, can help to provide that assurance and accurate information that stops the fear and spread of misinformation that so often run rampant in times of crisis such as health pandemics, but also in crises such as natural disasters, terrorists' attacks, or any major event that can leave the public feeling vulnerable (Stephen). The responsibility to maintain this control falls on organizations. This means there is normally a quick turn around to create a web-based CSS to prevent a spread of panic. This plan should still be tied back to the organization's mission, character, and values while still maintaining control over the content (Stephen).

This responsibility for developing an immediate source of trustworthy information also applies to the current global crisis of the COVID-19 pandemic. There is a massive flow of information about the COVID-19 pandemic from news coverage, daily announcements from local and national political leaders and health authorities, as well as social media, and because of this there needs to be a focus on providing clear, honest, and valid information (Finset). Accurate and well-developed health communication can help

relieve some of the fear and uncertainty that so many experiences during a health crisis personally or in the case of COVID-19 globally.

The need to handle the fear of COVID-19 accurately is important. While people know more than they did in the early weeks of March 2020, the uncertainty of COVID-19 and the everchanging recommendations and regulations is a challenge for content strategists as well as the health communicators they are working with. To do this the communication within these sites needs to be declared openly and honestly about what, at the moment, is known and what is unknown. It should be clear that "facts" during this pandemic can be temporary as research and data is continually being analyzed (Finset). Information should also be consistent and specific. Research on severe diseases has shown that uncertainty in the illness, or a patient's inability to determine the meaning of illness-related events, can be a result of "ambiguity (conflicting, incomplete, or inadequate information); complexity (difficult to understand information); and unpredictability (likelihood or risk of future outcome of the disease)" (Finset).

Ambiguous, complex, and unpredictable content could mean an unclear graphic that sways the way information is being reported, or a lack of checking to make sure sources are centered on facts and are reliable. This could also mean double checking that there is not contradictory information being presented and outdated content is quickly replaced with relevant information to avoid confusion. This is why it is vitally important that when crisis communication is involved that the language used is clear, specific, unambiguous, and consistent. There should also be a focus on acknowledging any emotions that are now so heavily ingrained in this pandemic. Information should be

empathic to these emotions. The tone of state websites should not be too aloof or factual and should acknowledge that this crisis has impacted individuals' lives and mental health.

To effectively reduce the risk of COVID-19, the end goal of these websites, it is critical that clear, empathic, accurate information is being created. This tone and goal should extend beyond the actual text of the information to also the site design and navigation because those affect a user's experiences as well. If a site has clear, empathic, accurate information but also has confusing, stressful designs a user will leave feeling stressed instead of satisfied and informed.

METHODS

This section defines the five factors for analysis and explains how I apply them to the websites. These factors will include aspects of website design as well as terms from crisis communication, as both need to be explored to have a successful website in response to COVID-19.

From the perspective of visual rhetoric, websites can be analyzed on a graphic level describing visual features as well as on how design choices affect the impression a user will gain from the visual presentation (Black 3). A reader's first glance influences the rest of their viewing processes, and because of this there should be an emphasis on getting the right "look and feel" for a design. Keeping this goal in mind, this analysis uses visual rhetoric to compare the content of three different state's COVID-19 response websites and their effectiveness. The effectiveness of a site is basically a measure of how successfully it does what it is trying to do. Does it meet its main goals?

To measure the effectiveness of these websites, I analyze these sites through two of the four broad categories of content strategy-- substance, structure, workflow, and governance. I provide in-depth analysis on the substance and structure by breaking these lenses into five specific factors: legibility/usability, impression, ambiguity, complexity, and predictability. Two of these factors come directly from research on content strategy (usability, impression), while the other three stems directly from the research on health crisis communication (ambiguity, complexity, and predictability). This project does not touch on governance and workflow, as I lack access to the actual individuals who serves the needs to these roles.

Usability is one factor that can lead to a positive user experience and involves the structure of the website. If a website is usable then it can achieve the specified goal wanted by a user and the experience will be effective and leave them satisfied. This report breaks down usability into three design issues. One element that makes a website usable is the availability and accessibility to its target audience (Idler). If someone is trying to use a website and is unable to find it or once they locate it, it does not work, the website is useless. Common availability and accessibility problems are slow loading, broken or dead links embedded in the site, or poor mobile responsiveness due to features like unreadable text that is mis-sized or cut-off when viewing on a phone or slow mobile connection (Idler). For example, if a website takes forever to load due to poor hosting, a user is likely to click away after a few seconds have passed and find what they needed elsewhere.

Another element of usability is clarity. The design of the website should be simple, familiar, and consistent. If a website is confusing or distracting a user will take longer to find information causing them to be dissatisfied with their experience and may not use the website again (Idler).

Legibility falls under both the substance and structure of website design. When a website is legible, it indicates how easily a user is able to recognize individual characters of text. This means that fonts are easily readable and appropriate size. For example, a title may be larger in size, a more whimsical typeface, and bolded while the body text is a classic sans serif, a smaller point size, and easily readable in larger chunks of text. This also means the layout of the website makes sense. Text is aligned consistently and there is an appropriate number of columns per amount of text. The main goal of legibility is

ease of reading. A user should be able to read the information presented to them without much mental strain (Black 6).

Impression also involves aspects of both the structure and style. In their book "*Information Design: Research and Practice",* the authors describe impression as "the attractiveness and approachability of the document's overall appearance (Black 6). Interfaces that look attractive are interpreted by users as easier to use, even if they actually are not (Waller 18). Attractive documents are uncluttered but provide information quickly and easily. For example, a website may present the most relevant information on the home page so a user can quickly find it. Other factors that can add to the impression is a clear writing style and hierarchy of headings, an orderly structure and clear, open layout (Waller 19). A user's impression is very important because if the content is deemed confusing or too unimportant, then it is less likely to be read (Waller 18).

The design of a website is only one part of determining if a website is truly effective in usability, legibility, and impression. The written content of the website is also important. For state COVID-19 response websites, the majority of this information is heavily medical and deals with the gravity of the "pandemic" status of this crisis. Because of this, effective health communication needs to also be achieved in order to accurately attend to the audience of these websites. This analysis looks at three aspects of successful health crisis communication: ambiguity, complexity, and predictability.

In addition to the factors drawn from the language of web design, my analysis draws three additional factors directly from Arnstein Finset's "Effective Health Communication—a Key Factor in Fighting the COVID-19 Pandemic." This article

addresses the massive flow of health information during the COVID-19 pandemic, how to handle uncertainty and fear, and how to promote behavior changes such as washing hands and wearing masks. The three additional factors are ambiguity, complexity, and predictability.

Ambiguity is an incomplete, inadequate, or conflicting substance featured in a website (Finset). For example, a graphic on the website like a graph could be distributed inconsistently or incorrectly. When people look at the graph, they may be unable to interpret it or they may interpret incorrectly which would overall lower their user experience. Applying this concept to writing, blogger Jason Blondeau describes nine tips to help avoid ambiguity when writing. One of these tips is to avoid adverbs whenever possible. Adverbs such as "generally," "reasonably," "usually," "normally," and many others lead to confusion as they are often interpreted differently (Blondeau). Proving clear, concrete information leads to a more effective website; to do this provide clear requirements such as avoid "would" and "should " when composing text as they avoid the implication of a specific task for a reader to complete which can generate vagueness which can lead to confusion (Blondeau). Use consistent terms and avoid abbreviations. When trying to avoid ambiguity, repetition of terms is helpful to keep a reader on task and helps with their ability to access and find the information they are seeking (Blondeau). In analyzing ambiguity, I looked for data that could be hard to interpret and sought out what measures were taken to provide accurate and up-to-date information.

Complexity refers to content that is difficult to understand. One example of information that may be complex is medical terminology. Medical terms are not always familiar to the general public and because of this its use can lead to the spread of fear and

confusion. While this terminology is important to many types of content including

COVID-19 response, it is also important to understand that the level of knowledge by the

audience is most likely limited. Main features of the website may be devoted to content

such as vaccine distribution and maps that highlight case spread. These items may need

to be broken down in extreme detail for those with limited knowledge to understand

them. In analyzing complexity, I looked for the two main areas of presentation of case

rates and mass vaccination plans.

It is also important to address if the future is a total unknown. There have not

been any other COVID-19 pandemics and because of this the future is very uncertain, but

it is still vital to address this on the sites as many may be looking for some type of

reassurance--even one that means we are all uncertain. In analyzing predictability, I

looked at how the sites phrased content related to the future or if they had any predictions

at all.

This analysis looks at the state COVID-19 websites of Louisiana, Oregon, and

Kentucky. These states were selected because they are close in terms of population,

hovering from around 3.9 to 4.6 million citizens. This most likely means that the spread

of COVID-19 has been on a similar scale because of the population density. These states

will also offer a perspective from different parts of the United States as Oregon is located

in the west, Kentucky is located relatively centrally, and Louisiana is in the south.

Analyzing from different locations will provide a more whole perspective on areas across

the United States rather than states located near Kentucky.

This project focuses on the homepages of these sites and a few pages that are

directly linked from the homepage. It does not look at every single page on the site and

instead locates trends and creates best practices accordingly. Though it is possible that this leaves out some information, the homepages for these sites are dense, information-rich sources, and there is much to learn from only looking at these parts of the sites.

This analysis does not rank these sites from best to worst. It does, rather, analyze the sites on their effectiveness in the areas described above and how that effectiveness helps these sites either meet or fail to help them meet their overall goals. At the summation of this analysis, I offer from this in-depth look a set of best practices to help facilitate these sites to their full potential according to these parameters.

ANALYSIS

Usability

The first aspect of the three websites this report evaluates is their usability.

Usability measures the effectiveness, efficiency, and satisfaction with which a user can

achieve their overall goals on a website (Idler). The basis for this can be found in the

structure of the website. This section looks at the availability and accessibility to its target

audience, clarity, and legibility.

kycovid19.ky.gov

The first aspect of usability this analysis is going to look at is the availability of

information. One aspect of availability is a user's ability to access a website by entering

the website's URL in a browser or clicking a link that leads directly to the site and that

once a user reaches this site the content is expected (De Rudder). One way to test this is

by doing a quick Google search. The goal would be that when a user is attempting to find

kycovid19.ky.gov, they are able to locate it through a quick, keyword search. I Googled

"Kentucky COVID website" and this site was the top choice of the search results. This

means that a person trying to locate this site quickly for information to locate it easily

without needing to search specific terms or scroll through multiple Google results pages.

The accessibility of this website for its audience is an area where this site is successful.

The other aspect of availability is that when content is presented, it is presented in

an expected way. This can be tested by examining the maintenance of the site. For

example, one aspect to look at specially may be if the content appears to be updated regularly. On kycovid19.ky.gov, the interactive map graphic located on the home page is updated weekly meaning the statistics on the average daily cases to accurately reflect the current state of the country. This keeps information relevant and accurate for the users. Updating content regularly is an expectation many users have and by maintaining up to date content, an organization builds trust between them and the user (Vermette).

Though there are several key flaws in the layout, I noted several critical features that helped to successfully maintain these aspects of the site's usability. For example, the menu at the top of the homepage is useful as it scrolls along with the page meaning that as a user scrolls down the page the menu stays at the top of the screen. This can help a user easily switch between pages of the site as well as find their way back to the home screen easily (See Figure 1).
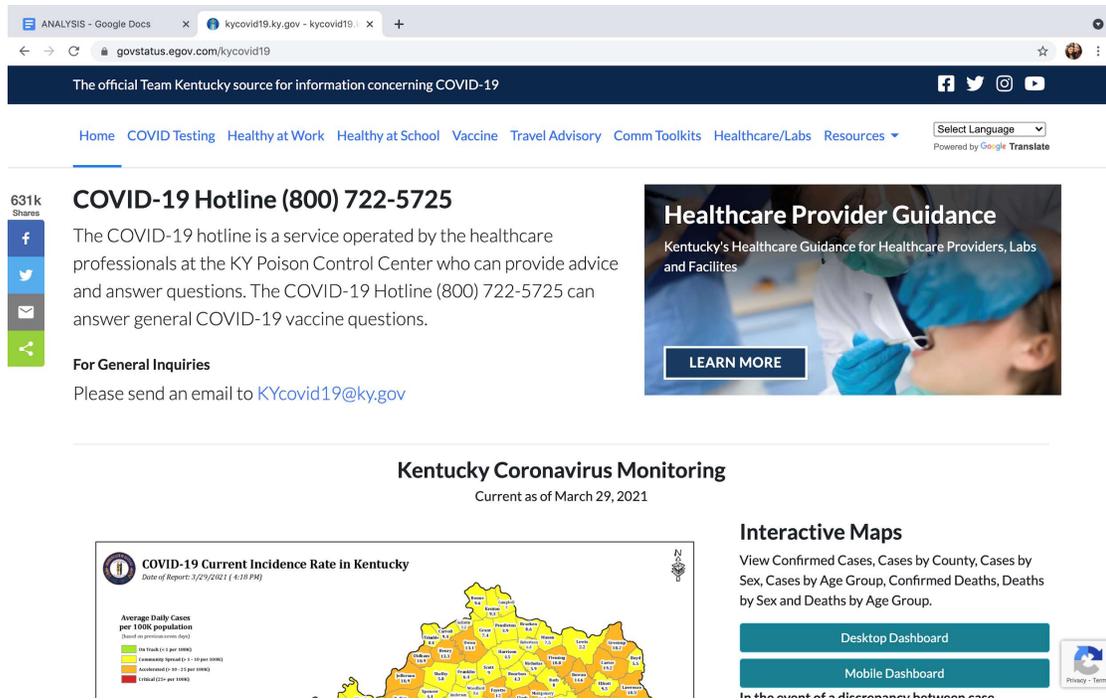

Figure 1: Static menu featured on top of homepage

This site starts to get confusing and lacks some of that clarity and legibility is with the social media links on the left side of the page (see Figure 2). While having access and connections to social media platforms is important to usable content this is not an effective use of this resource. These links much like the top menu stays with a user as they scroll down the page. These links are not to kycovid19.ky.gov or even any COVID related social media accounts and instead are a resource in which the users of the site can share information onto their feeds. One reason the creators of this site may have decided to use this feature so that a user can easily share a resource or article, but because when websites normally feature these types of links, they lead to that site's social media pages and while the spread of accurate and factual information is extremely important, the ways this tool is currently being presented is misleading and can lead a user to confusion.
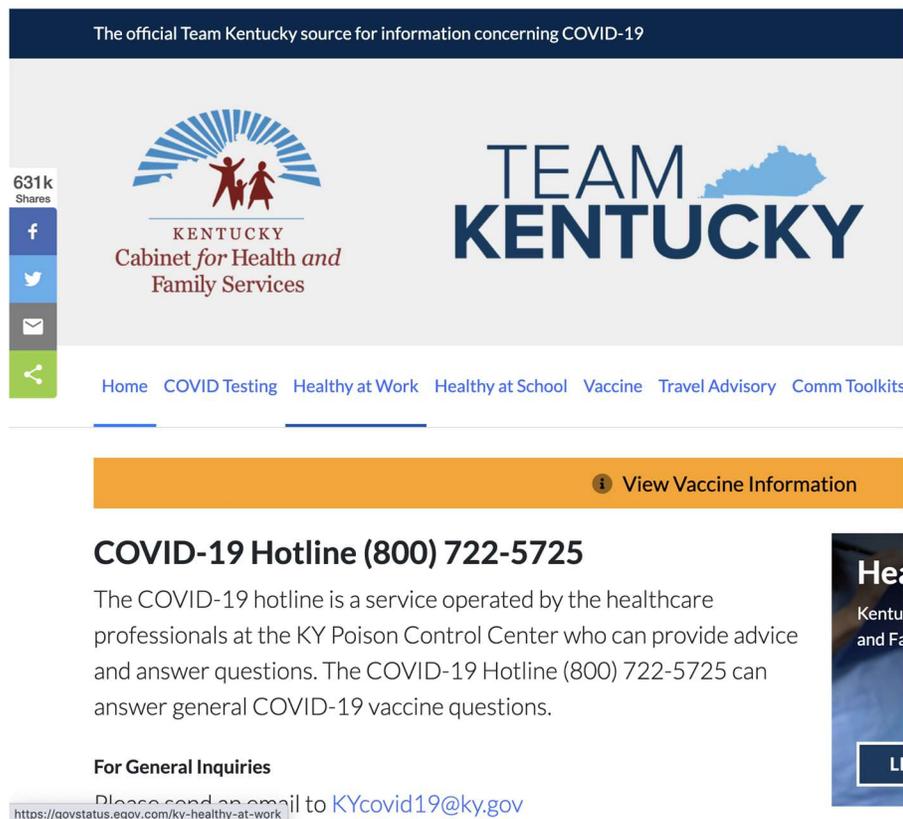

Figure 2: The social media links featured

Another aspect that may lead to a lack of clarity is the clustering of information within the site. There seems to be no rhyme or reason to the way the different clusters of information are being presented. For example, the information about the COVID-19 hotline is large and receives a whole paragraph of text and then next to this paragraph with much less room is a link to another article about healthcare providers guidance (see Figure 3). Content split within a horizontal row can be effective, but because this site does not use this consistently it can make a user feel that they are getting lost in the content because it is hard to deem what the site views as important and places emphasis on due to the inconsistency. A variation of this same problem comes up at the bottom of the homepage. The articles presented within different squares are again inconsistent in their sizing and presentation (See Figure 3). This can lead to confusion and slow down a user trying to locate information on the site.

Figure 3: Example of the clustering of content presented at the top and bottom of Kentucky's homepage

The section of the site entitled "White House Coronavirus Task Force Reports for Kentucky" is crammed with information to the point where it makes looking at it overwhelming to the eye (See Figure 4). The dates for the multiple reports are all listed in the same blue font, but rather than create consistency the paragraph format of these titles make it hard to differentiate one from the other.

White House Coronavirus Task Force Reports for Kentucky

March 19, 2021   March 12, 2021   March 5, 2021   February 28, 2021   February 21, 2021   February 14, 2021   February 7, 2021   January 31, 2021   January 24, 2021   January 17, 2021   January 10, 2021   January 3, 2021   December 27, 2020   December 20, 2020   December 13, 2020   December 6, 2020   November 29, 2020   November 22, 2020   November 15, 2020   November 8, 2020   November 1, 2020   October 25, 2020   October 18, 2020   October 11, 2020   October 4, 2020   September 27, 2020   September 20, 2020   September 14, 2020   September 6, 2020   August 30, 2020   August 23, 2020   August 16, 2020   August 9, 2020   August 2, 2020   July 26, 2020

Figure 4: "White House Coronavirus Task Force Reports for Kentucky"

The use of logos on the top banner of the site is also an issue for legibility. Currently the site has their "Team Kentucky" logo in the center, then on either side of that logo there is a logo for the Cabinet for Health and Family Services, and Kentucky Public Health (See Figure 5). All three of these logos are similar in size and because of this the eye does not know where to focus. This takes the focus off of "Team Kentucky" and distracts someone from being able to tell if they have clicked on the correct website and what purpose the site is trying to convey.

The official Team Kentucky source for information concerning COVID-19

KENTUCKY Cabinet *for* Health *and* Family Services

TEAM KENTUCKY

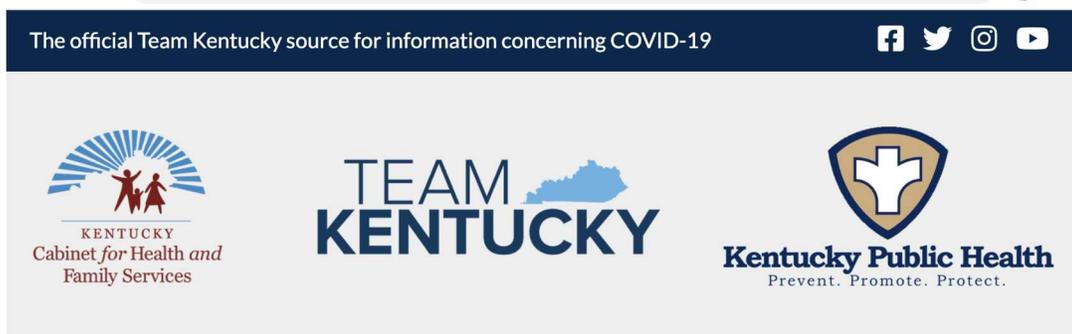Kentucky Public Health
Prevent. Promote. Protect.

Figure 5: The three logos

kycovid19.ky.gov is also missing the vital tool of a search bar which again adds to a lack of clarity. Many websites feature a search bar at the top of their webpages to

easily search for specific information within a site's multiple pages (Desmond). This feature helps a user not only find what they are searching for faster, but if the site is easier to navigate the more likely someone is to stay and have overall a more satisfying user experience (Desmond). A tool like this could help streamline a search for a specific COVID guideline or article.

oregon.gov

Oregon's website shared many strengths and problems in terms of its usability, but overall is slightly more usable as it had successful accessibility tools and a more effective overall organization.

Similar to kycovid19.ky.gov, oregon.gov can be found as the top search result when Googling key terms, but this site is slightly less accessible than kycovid19.ky.gov, because it does not feature any indicator that this site is a state COVID website with the text used in the blue title that appears when a Google search is done (See Figure 6). Kentucky's website title is kycovid19.ky.gov. This clearly shows someone searching for this site that they have found the correct one. oregon.gov, however, only reads COVID-19 updates. Someone searching could simply overlook this site because of this lack of information even though it is high on the search results. This site does not have a map-like graphic tracking the case totals, so it is hard to access if this site is updated as often as weekly. This makes it hard to see how available up to date content is from the homepage alone.

Figure 6: Oregon vs Kentucky Google search results and website titles

oregon.gov also has a stationary menu at the top of its site. This menu, like kycovid19.ky.gov, also follows a user as they scroll to help a person quickly find the webpages, they may be searching for making this site successful in this example of clarity. The color scheme also adds to the clarity and legibility of the site by consistently featuring the light blue, dark blue, and white again. This again adds to the sense of cohesion of the site and helps guide a user's eye to the correct headings and banners they need to locate quickly. Sometimes the two blues features right next to one other clash as the shades are almost the same in color but slightly different enough to bother the eye, but overall, the color usage is helpful to the organization of the site.
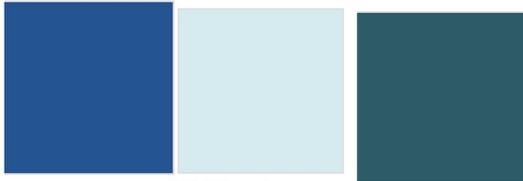
Figure 7: This screenshot shows an example of the color scheme

oregon.gov also provides a tool to direct people to social media, but they do it more successfully than kycovid19.ky.gov. For one, they place these links at the bottom of the homepage and let the actual COVID resources take priority as most people who are visiting the site are most likely seeking information within this site rather than wanting to be directed to a social media page (See Figure 8). These links also lead to the oregon.gov's social media accounts. This is more helpful than the sharing capabilities provided by the Kentucky's website's social media tool.

🖶 Printing requests: You can download materials on this page. OHA does not offer paper versions. Please feel free to print whatever you need.

🌐 Language access: OHA is working to provide original content in languages other than English. Many of the materials in our community resources section are available in multiple languages. OHA is also providing the Google™ Translate option to assist you in reading the OHA website in languages other than English. Google™ Translate cannot translate all types of documents and may not provide an exact translation. Anyone relying on information obtained from Google™ Translate does so at their own risk. OHA does not make any promises, assurances, or guarantees as to the accuracy of the translations provided.

❓ General questions:
COVID.19@dhsoha.state.or.us

↻ Website feedback:
Health.Webmaster@dhsoha.state.or.us

🄵 Facebook 🄵 Español 🅃 Twitter ▶ YouTube

Figure 8: Social media links featured at the bottom of the site

This site is also more successful than kycovid19.ky.gov in the organization of its content. It uses a banner approach to the content presented horizontally across the screen, similar to a banner, and it is clustered together in an intentional way (See Figure 9). The layout is also consistent in sizing with the main articles located towards the top of the site with one item across the whole length of the screen or if the section is split similarly to the Kentucky site the boxes are featured in the equally sized square boxes. This consistent, equal formatting makes the site easy to navigate and find content easily, and it also makes it easier for the eye to travel and the screen doesn't feel like it is overflowing with too much information that ends up being more overwhelming than helpful.
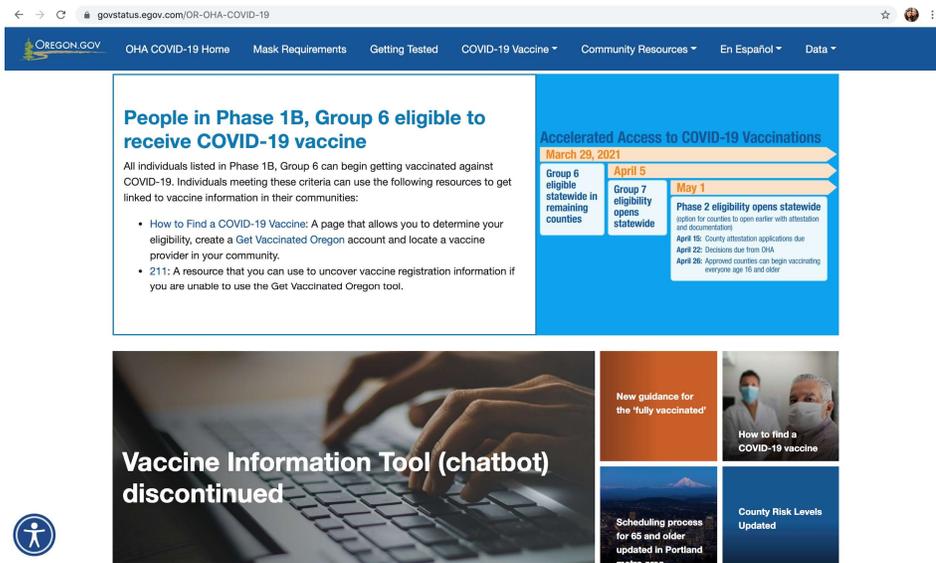
Figure 9: Banner in Oregon's site and boxed features

This site also has a similar section to the "reports" section of the Kentucky site. It has a section where it lists all the press briefings from the governor. While this content is slightly different because these press briefings are in a video format rather than a document a user downloads, the organization of this content could be utilized and transferred to other similar content such as this. The videos are presented as the newest one being a large video to the left of the screen ready to be played with one click as it is most likely the most relevant one that people would want to search and re-watch or catch up on if they missed (See Figure 10). The others are listed to the right of the video with a small preview of the video in a list format with the title one after another, but never on the same line. This is helpful as it is easy to scroll through and find what video a user may be searching for and wants to watch. It also narrows the content down from every press briefing the governor has done to only the ones in the last couple of months because

older videos quickly become obsolete due to the changing nature of information about the virus.
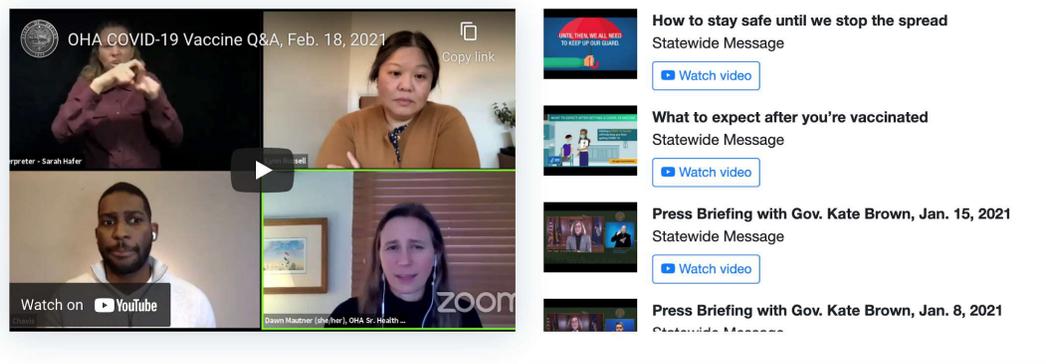
Figure 10: Governor report videos

One of the unique usability features of the Oregon site is its accessibility menu (See Figure 11). Static in the left-hand corner of the homepage is an icon of a person that once it is clicked opens to show options such as contrast, highlight links, bigger text, and many other similar features that can help anyone who may need accommodations to help their user experience. Another tool is a chat feature where if someone has questions, they can type a question to an automated system and the user can then choose from a series of options to ask questions about their lives in general or more specific vaccine information. This also helps someone answer a question without having to search the entire site or call a hotline and wait a long time to talk to someone for a simple answer to a question.
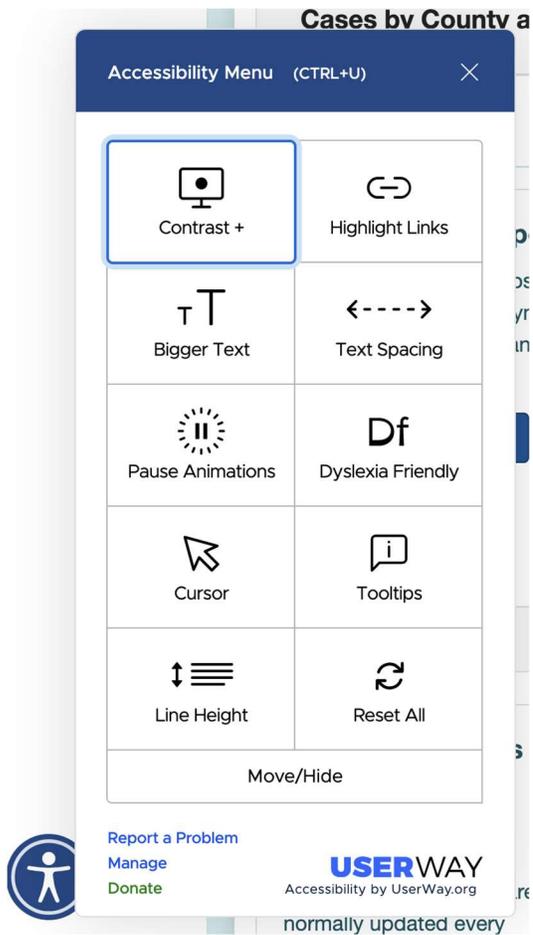
Figure 11: Accessibility Menu

oregon.gov also utilizes graphics, such as charts and infographics, more than the kycovid19.ky.gov does. A successful example of this is the graphic explaining how Oregon's website plans on sequencing the vaccines (See Figure 12). Graphics create visual differences that can help with the location and processing of information. They are also a creative way to present a lot of information without overwhelming a viewer per the example of the vaccine chart.

Oregon's vaccine distribution plan
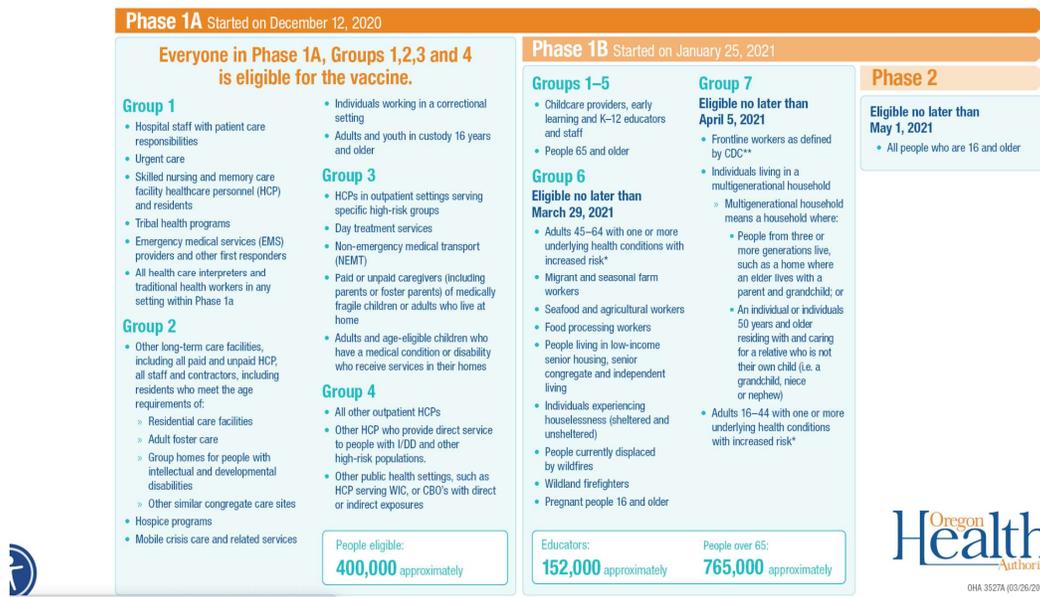
Figure 12: Vaccine distribution plan graphic

oregon.gov is also accessible through its use of a feedback feature on the bottom of their site. These COVID sites were created quickly under immense pressure from the government as a whole and the public amid the fear and hysteria of the early days of the pandemic. This is a useful way to gain feedback and see user error without having to spend a lot of time and money.

ldh.la.gov

The problems and successes of ldh.la.gov are similar to both kycovid19.ky.gov and oregon.gov. It has some effective elements such as their accessibility and feedback tools but lacks some of the tools to search more specifically for content and navigate between pages.

Like the Oregon and Kentucky websites, the Louisiana response website is also accessible through a Google search of key terms. The title of the site that comes up on Google is a good representative of the content within the site stating, "Louisiana Coronavirus COVID-19." This would effectively help a user recognize that this is the correct site for accurate information about the virus. The content throughout the site also appears to be updated regularly, on a weekly basis making its numbers stay up to date and accurate.

This site, unlike the other two, does not feature a static menu at the top of the page on its COVID response homepage. It does feature a menu to the left of the screen, but this menu does not travel with the scroll and quickly becomes lost as a user travels down the website. This can lead to a user getting lost within the site with no way to call back to the other pages they may want to explore (See Figure 13).
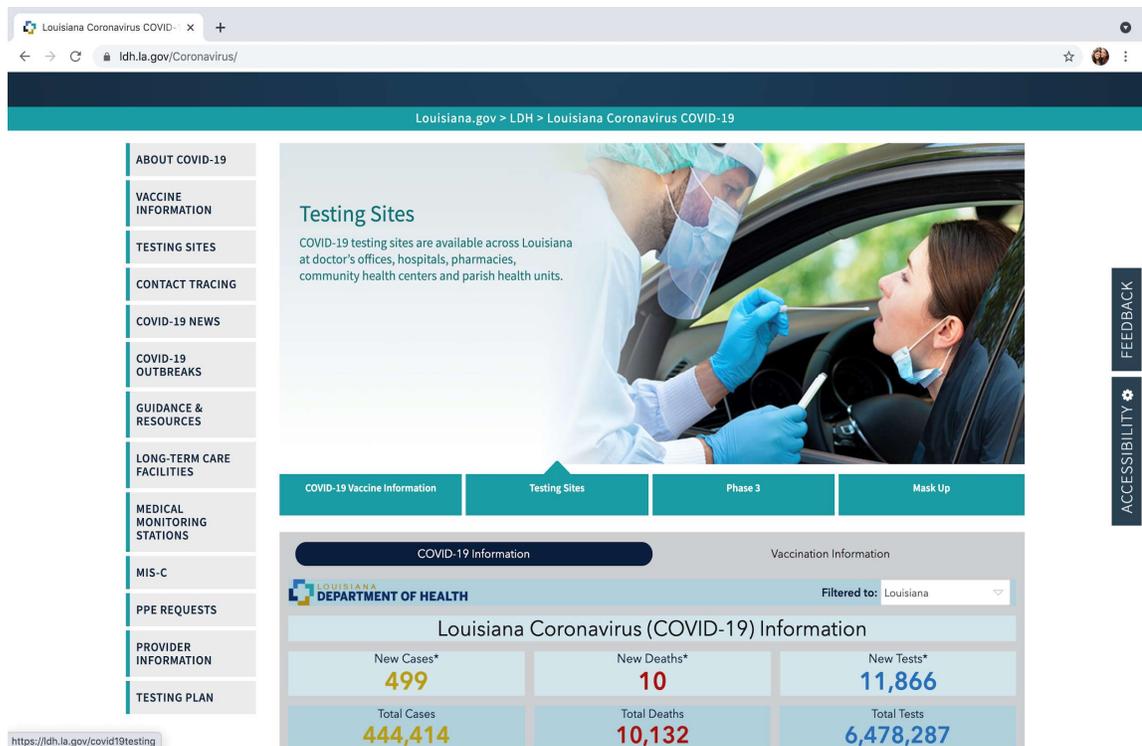
Figure 13: Seen here on the left-hand side is the static menu

ldh.la.gov, similar to oregon.gov, also features links to three social media platforms at the bottom of their homepage (See Figure 14). These social media icons lead to the Louisiana Department of Health's social media accounts as well as a blog written and sponsored by the Louisiana Department of Health. This blog provides a more laid back and serious option of where to get your information from. Again, the linking of the social media at the bottom if the page is an effective way to organize the page because people may want to follow these accounts to get more updates about changing guidelines, but this is probably a secondary goal of the user. It is unlikely that they went to this website with the main goal of locating and following the Louisiana Department of Health social media pages.
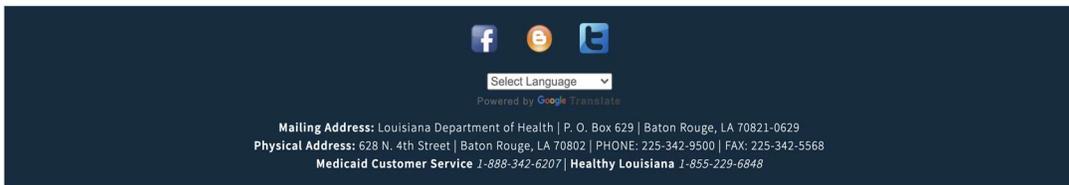
Figure 14: Social media links featured at the bottom of Louisiana's website

This site has a more compacted organization of content. It rarely displays content across the full length of the screen. Instead, it centers the content in the middle of the screen and cuts it off so a large portion of the left side of the screen is blank and filled with white space (See Figure 15). While this is not necessarily an unsuccessful way to display the content as it is clean and focuses the viewer's eye to the center of the screen, it makes it so less content is displayed, and a user has to scroll more frequently to navigate the homepage.
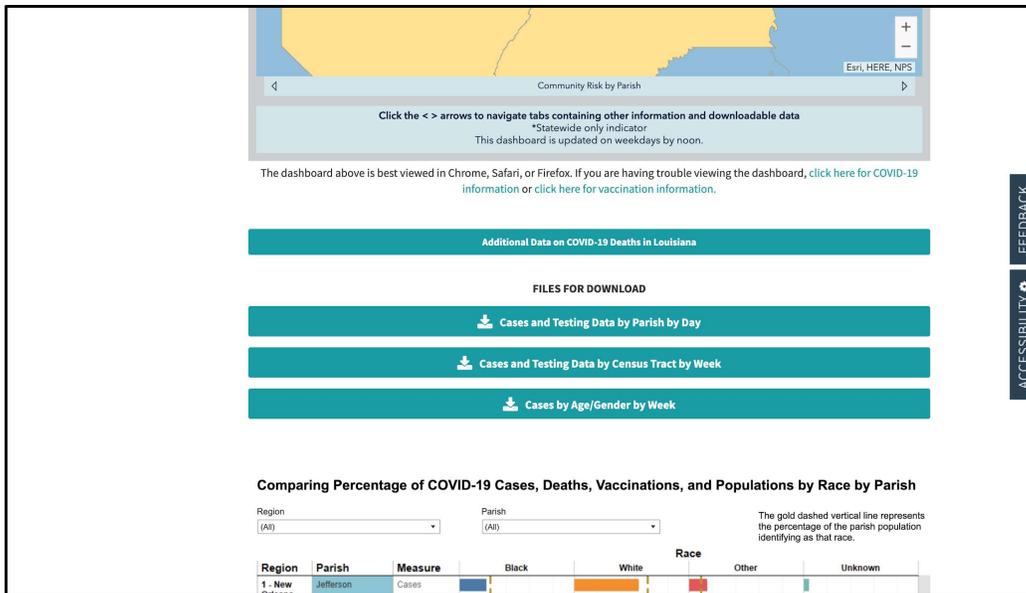
Figure 15: Notice how on both sides of the center there is a large section of white space where no content is being presented on the left and only the scrolling "feedback" and "accessibility" are featured on either side

Like the other two sites, the Louisiana site does not have a search bar anywhere on its homepage. It does have similar tools to the Oregon site in that it provides a feedback tool and an accessibility tool (See Figure 15). The feedback tool once clicked opens a survey where someone can leave their feedback on the usability of the site. The accessibility tool is almost identical to the Oregon website with options like making the site more accessible to individuals who are visually impaired, need larger text, have ADHD, seizures, and many more. This makes this site easily adjusted to any user's unique circumstances.

Impression

While usability focused on the actual function of the website, impression docuses on characteristics like, for example, how easy it is for visitors to interact with and find information. The impression of a website, however, is the document's overall appearance and if that design is seen as attractive and approachable. The usability and impression provide a full picture of the aesthetic and functional impact of the web design. These elements "combined aesthetic and functional impact of document design and its capacity either to facilitate interaction between the initiating organization and the user or, conversely, to deliver a negative experience" (Black 5). Interfaces that are considered attractive are also judged to be more usable (Waller 18). This is important for COVID sites because they need a positive perception from the moment, they click on them because of the stigma and politicization of the subject.

kycovid19.ky.gov

kycovid19.ky.gov starts off with a positive impression by using a consistent color palette of light blue, dark blue, and white which is reflected in their logo at the top of the page as well as throughout the sites content, images, and headings (See Figure 16). This consistency helps to highlight important content and helps focus someone's eye to find the information they need because it creates a hierarchy of information within the content. This color palette is also pleasing to the eyes as blue tones are associated with calmness and responsibility (Chapman).

This is exactly the tone for a site that is trying to ease the stress of COVID-19 through an effective website. If, for example, the site had chosen a color palette of red it

would change the whole impression of the site upon first glance. Red is associated with fire, violence, and warfare (Chapman). This could make the site alarming and much scarier for any visitor and it would be much more likely they would immediately leave as they would be overwhelmed. Kentucky's website's color palette focuses on a calm energy making users feel welcomed.

Figure 16: Logo which highlights the consistent color scheme of the site

Another aspect of a website's design that affects the impression a user gets is the typography. Typography can make a design more professional and attractive. It does the job of representing the brand or organization. It is the vehicle in which the marketing of the brand needs to come across as it showcases the style of the voice of the organization. (Akram).

The typography used in most body text of the Kentucky website is Helvetica Neue (See Figure 17) Helvetica Neue "sets new standards in terms of its form and number variants. It is the quintessential sans serif font, timeless and neutral, and can be used for all types of communication," ("Neue Helvetica"). This neutral, easy-to-read font is exactly what a health communication website needs. This site is made for the general public, so it needs to be fit for the style and needs of a wide variety of people.

The 7-Day incidence is calculated by taking the total number of unique cases in each county over the past 7 days, divided by 7 to get a daily average, divided by the U.S. census bureau county population, and multiplied by 100,000 to get the incidence per 100,000 people. The cases counted each day are based on the date an investigation was opened in NEDSS (i.e., National Electronic Disease Surveillance System). Duplicate cases are removed before the calculation, so each positive case is only included once. NOTE: State and local health department data will vary for a variety of reasons including data entry timing, communication processes, and 7-day averaging.

Figure 17: Example of Helvetica Neue used on the site

Professionalism is also a large aspect of a positive impression. kycovid19.ky.gov shows its professionalism by utilizing high-quality images throughout their site (See Figure 18). Professional images add visual variety and should grab an audience's attention. It can create strong emotions and communicate things words cannot. kycovid19.ky.gov's images are of optimal quality and convey a sense of community. A worker risking his safety to stock the shelves and hands hard at work doing research. Every image of people also shows them properly masked and following COVID protocols whenever possible. This means that these images also set examples for the audience.
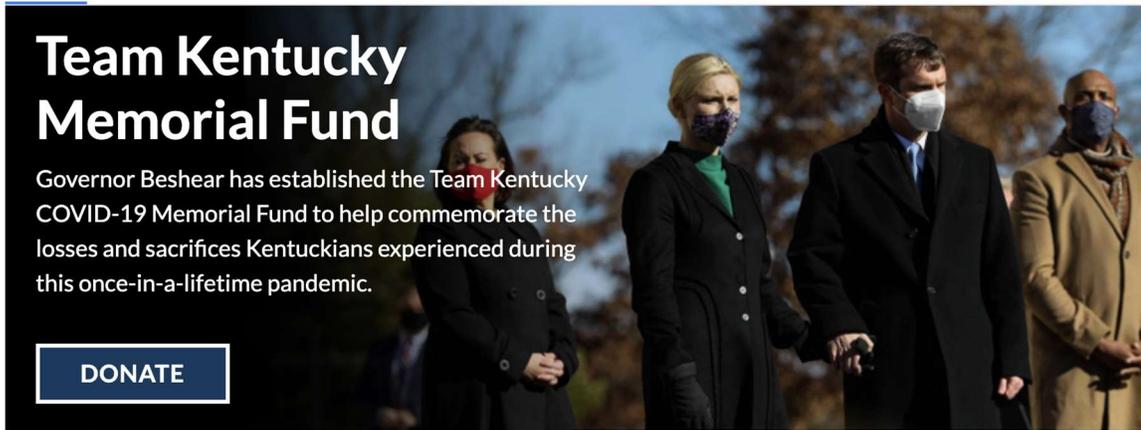
Figure 18: Example of the professional images used throughout the site

While, as discussed above, Kentucky website's use of logos is not the most

effective organizationally, it is important to feature logos as they are distinct uses of

graphics and text that draws a user into the organization. In the case of Kentucky, its logos show that this is a state site and accredited by the Kentucky Public Health Network and Kentucky Cabinet for Health and Family Safety (See Figure 5). By using logos, a user gets a sense of ease and trust as the information seems to be coming from a reputable source.

oregon.gov

oregon.gov has a similar impression to Kentucky's site because it had a similar color palette, font, and use of logos to achieve a professional and non-threatening approach to informing the public about COVID-19.

Oregon's website's color palette is also an array of blues (See Figure 19). The color scheme also adds to serenity of the pieces through its use of light blue, dark blue, and a green blue. This again adds to the sense of calm and responsibility that blue connotes. The greener shade could have been chosen because green has many of the same calming attitudes of blue, but it also has some of the energizing effect of yellow (Akram). Green, in a design, can have a balancing and harmonizing effect which is a quality that many people are searching for during this unbalanced and chaotic pandemic (Akram). While the new qualities that green brings to the design it also complicates the impression along with it. Sometimes the two blues clash with the blue-green featured right next to one other clash as the shades are almost the same in color but slightly different enough to bother the eye, but overall, the color usage is helpful to the overall impression of the site.
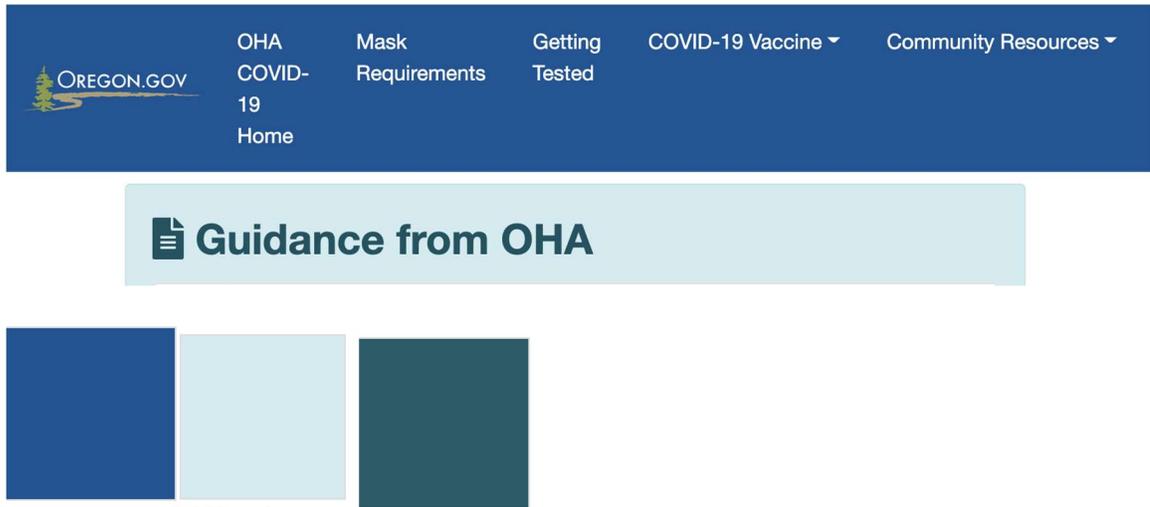
Figure 19: This screenshot shows an example of the color scheme

oregon.gov also uses Helvetica Neue, but it overall uses much less text and instead uses graphics and short chunks of descriptions with links to other pages rather than long paragraphs featured on the home page. This could make the impression less overwhelming as a user is not bombarded with long paragraphs and instead can quickly scan the screen for keywords they are searching for in the shorter descriptions.

Oregon's website also shows their professionalism, similar to kycovid19.ky.gov, through its use of logos and professional images. Oregon only showcases one logo at the top of their sites and that is the Oregon Health Authority logo (See Figure 20). This still shows that this site is state approved and has a health expert sponsoring it. Adding this authority makes the site more credible and given the logo's location on the top banner of the homepage sets the tone of the site with one glance.

Oregon's website's use of images is also a smaller scale than Kentucky's website. There are only two images featured on the homepage (See Figure 21). They are similar in content and quality to kycovid19.ky.gov. They feature hands performing research and

people properly masked. This again conveys a sense of unity and sets an example for people. Oregon's sites could benefit from a few more images on their homepage as humans are visual orientated and this could help these visual learners connect to the site and its information.

Figure 20: Oregon's Health Authority Logo

Figure 21: Two images used on homepage

ldh.la.gov

ldh.la.gov's overall impression is similar to oregon.gov and kycovid19.ky.gov. They utilize the resources of their color palette, font, images, and logos to try and ensure that a user has a positive experience.

Louisiana's website's color palette falls under a category similar to the other two sites looked at. They also use the calming nature of the blue (See Figure 22). Similar to kycovid19.ky.gov, white is one of the main colors and similar to oregon.gov, a greenish blue is also a main color. This palette is a bit more successful than oregon.gov's; it does not use a light blue meaning that the greenish blue does not clash as much as with Oregon's website's color scheme. Once again, these colors combine to provide a calm and tranquility to the touch subject matter.

Figure 22: Louisiana website's detailed color scheme

ldh.la.gov uses Source Sans Pro as its typeface (See Figure 23). Source Sans Pro is an open-source grotesque typeface (Shoaf). It is ideal for interfaces where space is a

concern because it has a condensed letterform (Shoaf). This type of font is useful because of that space saving aspect as COVID-19 response sites are trying to cover a large amount of information in a relatively small surface. This font is also easily read and basic in terms of design. It, similar to Helvetica Neue, should leave the user with a neutral feeling that the text met their expectations, but was not anything too fancy. Louisiana's site uses text sparingly similar to Oregon. When text is used it is towards the bottom. Titles and a large map graphic take priority of the homepage.

Whether it is a natural disaster, a public health emergency or something more personal, it is normal to have feelings of anxiety, grief, stress, fear or worry. Coping with these feelings and getting help when you need it will help you, your family and your community recover. Our *Keep Calm* hotline connects you to trained, compassionate counselors who can offer support and who can direct you to mental health and substance abuse counseling services.

Figure 23: Example of Source Sans Pro font

ldh.la.gov also features professional images and logos. This site is the first one to utilize a carousel (See Figure 24). This site features the use of an image carousel at the top of the page. This is where a majority of the images on the homepage are located. This feature rotates through four options of different relevant articles on COVID topics. This feature is relatively successful, but a user has to click on the article image itself when it appears on the carousel rather than the square below that features the title of the article. This may lead to a bit of confusion on how to be redirected to the full article. While the style is different, the image content is once again similar to the other two sites. Once again, they are showcasing the positive behaviors the government wants to see such as people wearing masks and researching.

Louisiana's site uses logos less successfully than Oregon's website but more successfully than Kentucky's website. It utilizes two logos — one is the governor crest and the other is for the Louisiana Department of Health (See Figure 24). Once again, these logos placed at the top of the homepage give the user the impression that this site should house accurate information and important information as it is sponsored by the government without expliciting stating it anywhere in written word.

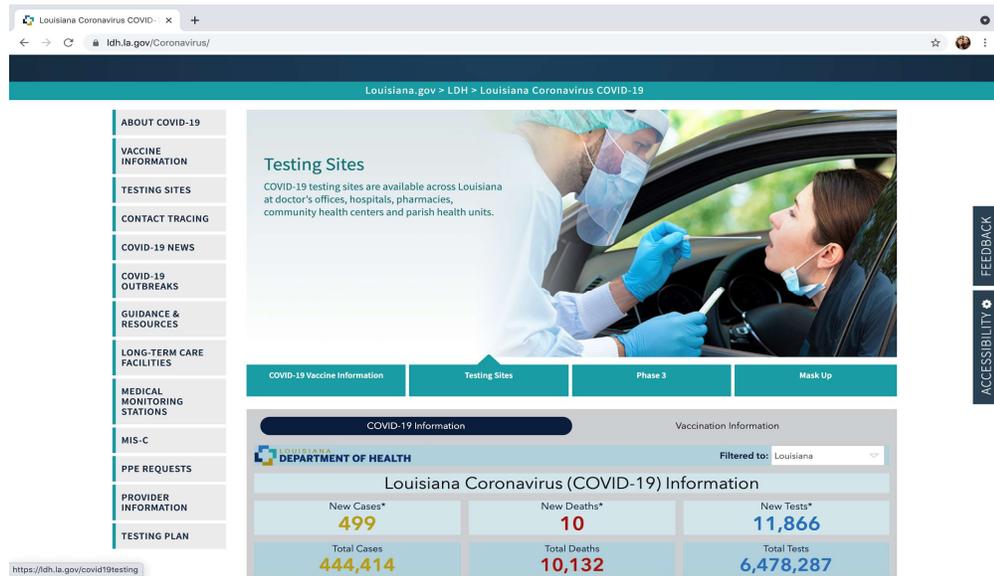*Figure 24: Image carousel and Governor and Health Department Logo*

Ambiguity

Ambiguity is when, in crisis communication, there is information that is "conflicting, incomplete, or inadequate" (Finset). These state-run sites are many times the

main source of COVID information a community has access to. This means that making

sure that the information on the sites is up to date, understandable, and accurate.

One case that shows the problem of ambiguity is the recent scandal of COVID-19

data and the governor of New York. The governor of New York Andrew Cuomo is facing

allegations that the state had misrepresented their cases numbers and deaths by under-

reporting on the number of COVID related deaths in nursing homes (Schwartz). While

Cuomo claims that his reporting is accurate, a report by the state attorney general last

month showed that the death toll was much higher than what officials had been

disclosing. This was because the New York Department of Health figures had not been

including people who died from coronavirus in hospitals after being transferred from

nursing homes as nursing home deaths, instead classifying them as hospital deaths. This

in turn greatly skewed the amount of claimed nursing home deaths.

Data such as these are easily manipulated much like this example to be

"accurate," but still ambiguous. It is important for consumers to be aware of situations

like this to hold officials to a higher standard of accuracy and transparency in their crisis

communications. These three sites need to assure their users that they are providing

accurate information by updating the content regularly and cited sources when possible.

Kentucky's, Louisiana's, and Oregon's websites all provide key features to

display that the information is accurate and up to date. For example, on Oregon's website

they feature a link to "Daily COVID-19 Update." This is a resource that is updated

Monday through Friday and includes updates on information like the daily case total, the

amount of people getting tested, demographics, hospital capacity, and emergency

department visits. It also clearly shows at the top of all this information updated with the

specific date and time that this graphic was updated. This gives a user assurance that this information was accurate and current. This site also provides information on where a user could get information on weekend data since their main graphic with that information is only updated during the week. oregon.gov uses similar tactics on the "OHA COVID-19 News and Reports" page where they post additional content in a written format rather than the heavily formatted graphics.

Louisiana's website provides another way to avoid ambiguity. They provide a disclaimer on their website that says that "all information in this website reflects the most current information provided to the State. It is subject to change based on further investigations and will be updated accordingly." Kentucky's website also provides a disclaimer saying, "People should be prepared for state and local public's health orders to be extended, amended, or changed as needed to protect public health. This means we may move between the different Phases during the pandemic." This reminder seems to try and avoid the confusion and ambiguity of information that was once accurate one day is either no longer available or no longer relevant the next. This provides clarity on why something may not be accurate leaving them more informed.

kycovid19.ky.gov also has a list of sources on their more specified topical web pages such as information about different resources for schools and business to use for protocol and research. These sources are presently similarly to a works cited page on an academic essay with the name of the author(s), title of article or book, and then a link if there is one to provide. This again helps a user fill-in any blanks if they do feel there is information lacking on the web page itself. While these sites do a good job of providing clear information, updated regularly by listing the dates that the information was

gathered, and show where they are getting their sources by providing citations, this is not always the case for every American. Some of the resources relied upon in this pandemic are being presented to the public in an ambiguous way where information is accurate, but the way it is displayed makes it be misinterpreted or statistics are being inaccurately totaled.

A main source of COVID-19 information that may be susceptible to ambiguous data is online maps. Maps are used to understand the number of cases, the spread of the disease, and where hotspots are located. Maps locally and globally are important information, but maps can vary, and every map embodies an argument. Inevitably, some maps choose to highlight some aspects of a situation and underplay others (Branch). Mapmaking is not as complex as it once was with a simple software called Geographic Information Systems (GIS). With the software, it is very easy even for with someone with very little cartography skills to create their own map of their chosen phenomenon (Branch).

The mapmaker's biases either explicit or implicit can easily become embedded in these GIS-produced maps. Two examples of how this bias can affect maps are the examples of the Johns Hopkins and *New York Times* maps (See Figure 25 and 26). The Johns Hopkins map was made with the GIS-based online mapping. It showed cases by location, and a user could simply scroll, zoom, and bring up detailed information and it provided extensive information about the source (Branch). It also a proportional system map which meant that it used smaller or larger circles to represent the number of cases for each place. For example, an enormous circle over Hubei province, large circle over Italy, and a smaller circle for Australia which indicate the number of cases in these areas.

These *New York Times* maps were much more static, but still held a lot of valuable information. These maps emphasize the importance of physical space showing a viewer that outbreaks could be occurring because of their location to nearby countries versus distant places (Branch). While this method does show the importance of location by using a default basemap which shows mostly state boundaries with few geographic features, the maps can be lacking important information such as whether borders of certain states are open or closed (Branch).
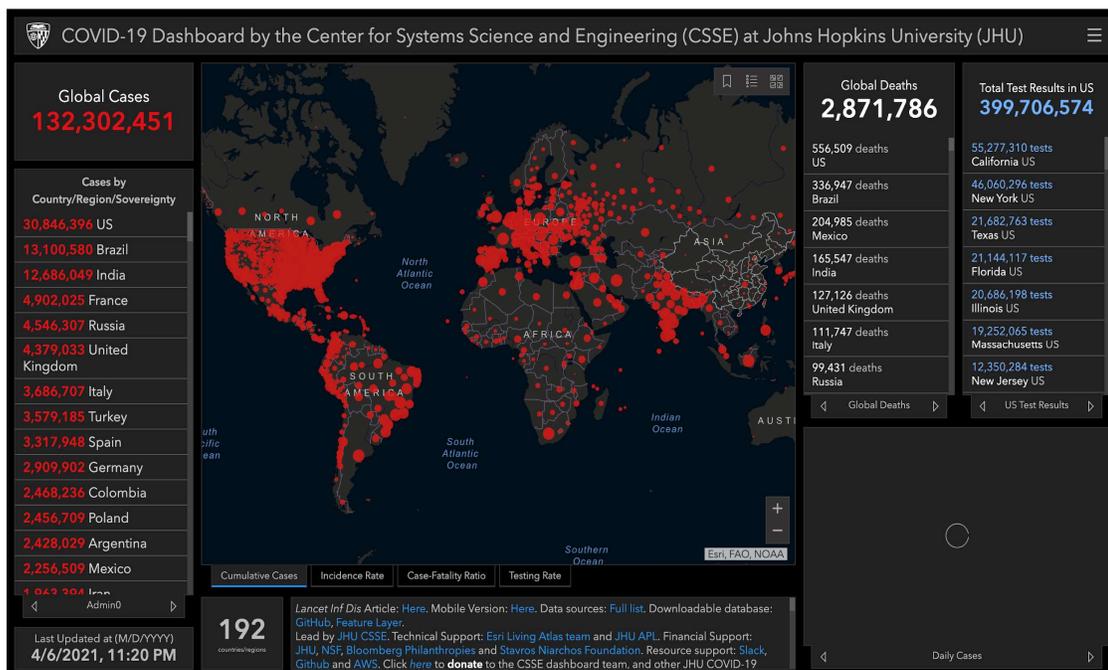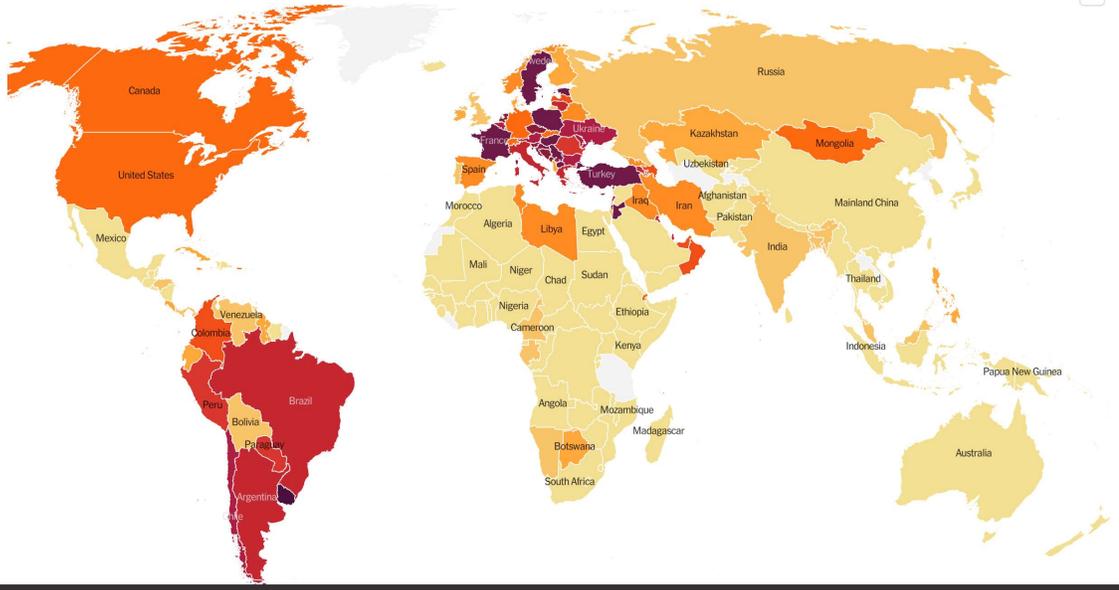

Figure 25: Johns Hopkins map

Figure 26: New York Times map

The maps' use of color scheme can also be influenced by the organization who created its political leaning. The shades of red, orange, and yellow used in these maps are colors which are many times associated with danger. Many times, the maps on these state websites are required to show the different counties in these colors because they are categorized by these colors by the number of cases in an area, and when a county is in the red, they may have different protocols than when they are orange or below.

The use of proportional circles to show the size of contagion by both sites' maps also can be easily misleading. People may think that the circle represents the size of the area affected rather than the number of people affected. For example, on the *New York Times* map, the circle representing how many people in Hubei province extends into many of the neighboring provinces (Branch). In the Johns Hopkins map, the circle covers most of East Asia (Branch). The creators of the map as well as people extensively

educated on maps would understand that these circles represent a number pinned to those smaller specified locations rather than geographic spread, but many viewers may be confused and still link the circles with spread rather than numbers (Branch).

Another common problem that can arise with maps is that the data represented on these maps come from government and international organizations and may unintentionally once again reflect the organization who created the map's political interests. For example, the Johns Hopkins map locates the cases of U.S. citizens from a cruise ship where the ship was docked in Japan, not where those people ended up being treated (Branch).

Both Kentucky's website and Louisiana's website utilize a red, orange, yellow color scheme. This can lead to fear and stress from a user (Akram). While the sites use the color scheme, both also present their numerical data more successfully than the proportional circle methods described above. They instead focus on concrete numbers rather than graphic content to describe the number of cases in a certain area. While ambiguity looked at how the actual data were being represented on the case maps, complexity looks at how a user can specify those data and how interactive the data is presented.

Complexity

Complexity refers to synthesizing difficult-to-understand information in a way that is understandable for the main audience of whatever content is being created. I looked at two areas of concern for how these sites presented the complexity of

information about the COVID-19 virus. I focused on how these sites presented

information about case rates primarily through maps and the mass vaccination plan.

kycovid19.ky.gov

kycovid19.ky.gov presents their case rates on their homepage with an interactive

map (See Figure 27). The map is organized by the average number of daily cases per

100k population. These data are then presented visually by different colors—green

representing an "on track" county, yellow representing a "community spread" county,

orange representing an "accelerated" county, and red meaning a "critical" county.

By using this familiar color system of green meaning essentially "good" and red

representing especially "bad," a person would be able to quickly tell the status of their

state as a whole and then should be able to quickly locate their county and see where they

fell locally on the scale. This information of what color a county is in would then be

matched to what type of restrictions would be implemented on local businesses and

establishments. Directly underneath the map there is a large red box providing a link on

what recommendation to follow if a person lives in a red county. This information for red

counties is represented so vividly because red counties are the most critical and should be

taking the most critical steps to lower the spread.

The map also clearly and simply explains where they are getting their data for this

map and how those data are processed. kycovid19.ky. gov describes what is called the

"7-Day incidence," which is the "total number of unique cases in each county over the

past 7 days divided by 7 to get the daily average, divided by the U.S census bureau

county population, and multiplied by 100,000 to get the incidence per 100,000." The site

then also explains where the case total comes from and details any discrepancies within

the data. This is a relatively simplified explanation on the collection and representation of

hundreds of thousands of people.
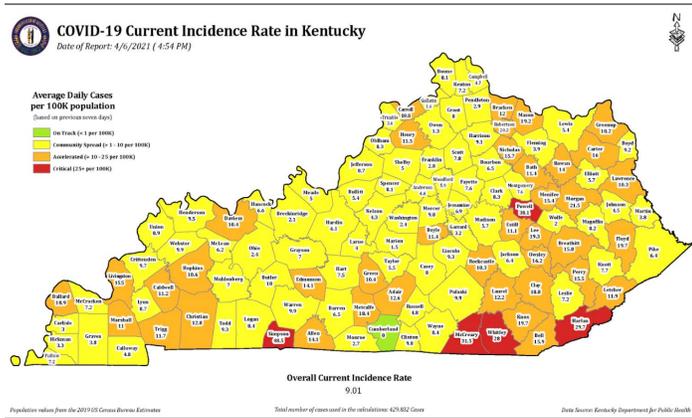
Figure 27: Kentucky's interactive map

If a user was looking for even more specified information such as a breakdown of

cases by parameters such as confirmed cases or cases by sex or age group, or more

information on death rates, they could click on the interactive map dashboard and be

taken to a separate webpage which breaks this information down in a series of area

charts, histograms, pie charts, and statics (See Figure 28). This page could be more

overwhelming to viewers because there are more charts and numbers than with the other

chart because it is presented in a more complex way due to the detail these statistics go
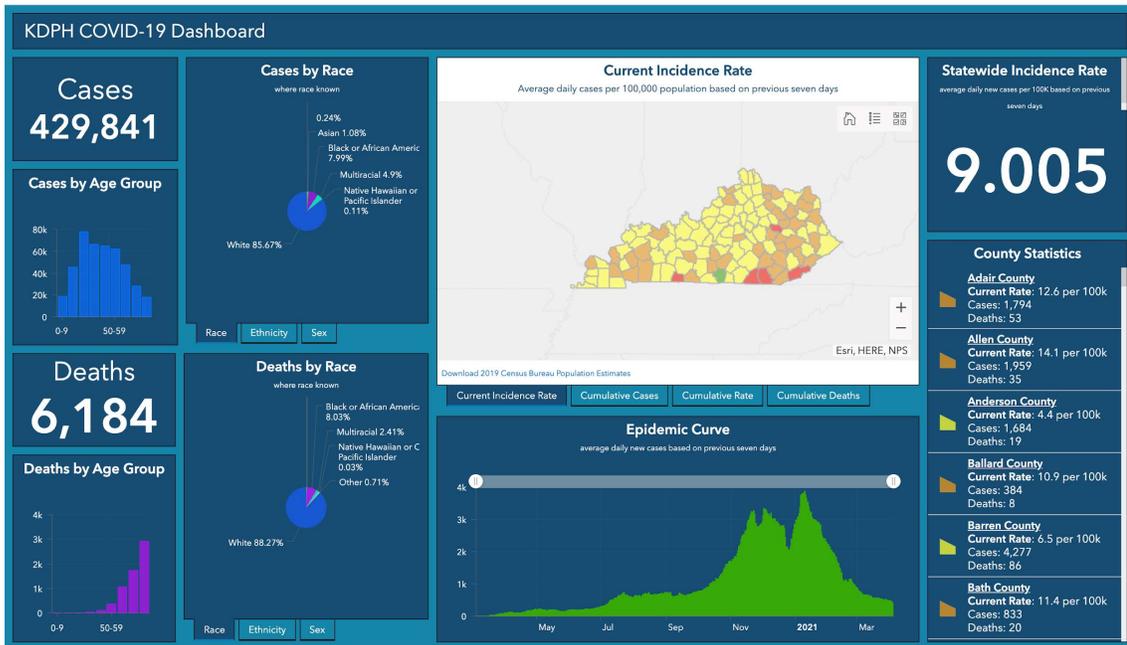
into.

Figure 28: Kentucky COVID-19 Dashboard

kycovid19.ky.gov presents their information on vaccines by placing a bar across the top of the homepage directly underneath the logos, highlighted in orange "View Vaccine Information." This is common among these sites because of the heightened interest as vaccines are currently being distributed nationwide. The Kentucky site's vaccine information tab includes sections like "vaccine frequently asked questions," "when can I get vaccinated," "Where can I get vaccinated," and "vaccine provider guidance." The site then provides a statement about support for Governor Andy Beshear and the equitable distribution of safe and effective COVID-19 vaccines.

When a user clicks the prompt "When can I get vaccinated?" they are taken to a quiz where they answer up to seven questions about eligibility (See Figure 29). Data such as these are described as "interactive data" meaning a user can drill down deeper to change and gain details of data by using their computers or mobile devices (Crooks).

These questions include descriptors such as age, occupation, and other medical conditions that may make someone more susceptible to COVID-19. Once the user answers a question that would make them eligible, they are told what phase they are considered and then provide a service to sign up for notifications. This process streamlines the process of people finding what information is relevant to them. If, for example, this information was presented in a large chart or graphic where a user may become overwhelmed with the different phases and requirements for each phase, a person would become very overwhelmed and give up looking for data. The survey style makes this information more accessible without a person having to look at and interpret the whole data set.

Figure 29: How to start quiz and an example of questions

The "When can I get vaccinated?" page takes a user to another map graphic (See Figure 30). This map features many map markers indicating the location of the 57 testing locations across the state. A user can search for their county and then testing sites located within that county will appear. Then they will be prompted to click and get information to make an appointment either from the website or provide a phone number to contact. This again is a more effective way to prevent the potentially complex list of every testing site and their contact information. This style of information presentation helps sort through the info to get to what is relevant to that specific person. Featured on the same webpage as this map is information about additional chain retailers such as Kroger, Walgreens, and Walmart, among others, that may be regionally distributing vaccines. This webpage also highlights in blue what phase the state is currently in and who has priority as more phases join.
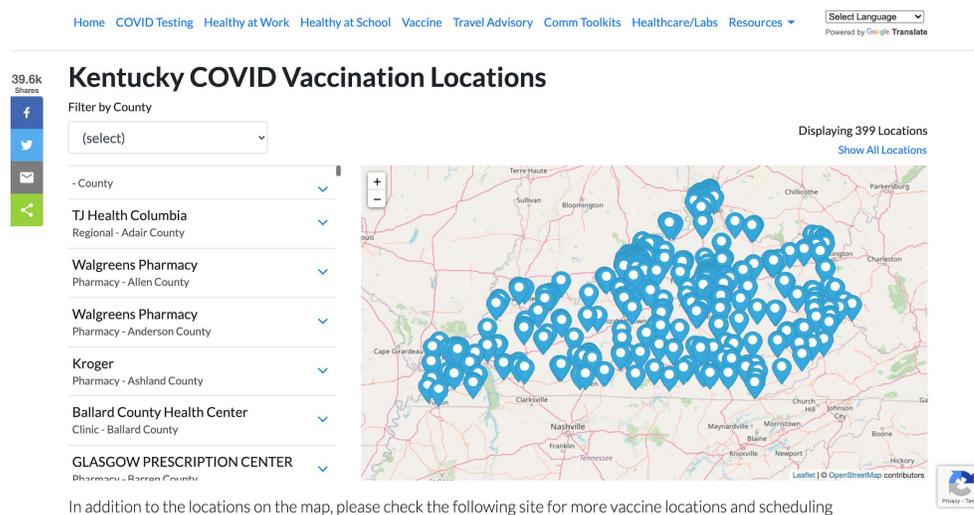

Figure 30: Map of vaccination locations in Kentucky

A less effective page within the vaccine information is the "vaccine provider enrollment." This page's purpose is not as immediately clear to a user. There is no additional information about what this title means, and a user is met with many vague headlines such as "Vaccine Health with Equity," "Vaccinate with Confidence," and then many hyperlinks to resources (See Figure 31). Because this page lacks a simple explanation at the top about what "vaccine provider enrollment" may include similar to what they did providing information about how they calculate case total on their graphic, this may overwhelm a user with terms and abbreviations they are not familiar with. While they will, on closer expectation, most likely understand that this page is for businesses and organizations actually distributing the vaccine, and not people looking to receive it, this page could overwhelm a user with its complex appearance and terms.
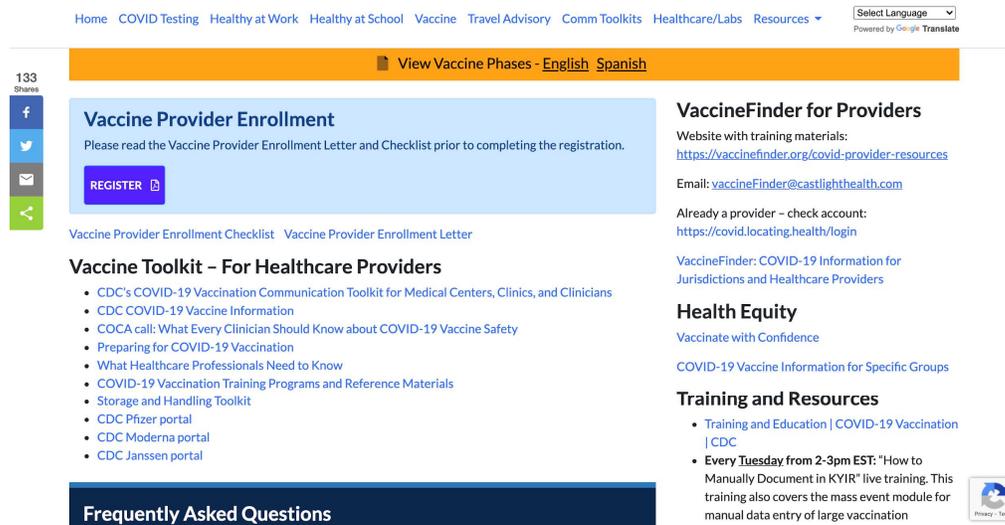

Figure 31: Vaccine provider and enrollment webpage

It has been shown that it is not easier for a viewer looking at slews of numbers and statistics to be able to pick out the large takeaways of that information (Crooks). Data

visualization such as the interactive maps are easiest for the human brain to process as it
is viewed visually (Crooks). Unfortunately, one of the pages on the Kentucky website,
"Kentucky COVID-19 Vaccine Monitoring" (See Figure 32) does not include much
interactivity. The data set does provide a way to interact with the data and filter down the
information presented such as with the cases maps and vaccine location map. Instead, this
information is presented numerically in a graph. While this information is relevant, the
presentation of so many large numbers in many columns of the graph back-to-back can
make it hard to see the full picture of how the vaccine distribution is going because some
people have a hard time converting data that are number heavy into an actual picture of a
situation in their mind.

Unique Persons Vaccinated and Weekly Percent Vaccine Allocation Utilization (Tues-Mon)				
Week#	Week Beginning	New Persons Vaccinated	1st Dose Allocation	7 Day % Utilization
1	Dec 15	10,213	38,025	27%
2	Dec 22	26,962	104,000	26%
		Show All Data ⌄		
12	Mar 2	127,110	130,210	97.6%
13	Mar 9	165,217	98,390	168%
14	Mar 16*	198,447	287,880	70%
15	Mar 23	128,197	149,010	86%
16	Mar 30	125,210	214,920	58%
17	Apr 6		278,810	
Total		1,421,603	1,874,705	76%

*One lump sum was added to March 16th of the Federal Rx program. Going forward, data will reflect a combined total from all other State and Federal Programs.

Figure 32: Example of data set featured

Overall, kycovid19.ky.gov's use of interactive presentation of data breaks down the complexity tied to the specific data of COVID-19. This makes complex data about vaccines and cases totals more accessible by presenting it in different visual mediums.

oregon.gov

The Oregon COVID-19 response site does not feature a map like Kentucky's site to present their case totals. oregon.gov, instead, presents static data in a chart that overviews the total cases, deaths, positive and negative tests, and total number of tests on their homepage (See Figure 33). While this chart is uncluttered and is easily read, it is not easily contextualized. Similar to instances in Kentucky's website's chats, graphics with numbers alone are hard for the average person to see and wrap their head around what these thousands actually means in terms of population making it harder to understand.

Overview

Updated 4/6/2021 with data from 12:01 am (updated Monday - Friday)*	
Total cases	**167,658**
Total deaths	2,427
Positive tests	242,658
Negative tests	4,030,401
Total tests	4,273,059

Cases by County and Demographic Tables	**+**

Figure 33: Oregon case data table

Oregon users also have to utilize a drop-down menu to see an individual county's number and once again this is presented as raw numbers with no visuals or the ability for the user to interact and break down information on its own for one special county, and instead is presented as listing every county in the state alphabetically (See Figure 34). The site explains how they get their numbers with footnotes that explain how these totals include diagnostic and presumptive testing, what is not included like antibody tests, and where to find additional details on statics (See Figure 35).

County	Cases[1]	Deaths[2]
Baker	783	12
Benton	2621	18
Clackamas	14574	200
Clatsop	851	7
Columbia	1441	25
Coos	1912	30
Crook	823	19
Curry	564	9
Deschutes	6504	71
Douglas	2944	64
Gilliam	54	1
Grant	300	4

Figure 34: Example of part of the alphabetical breakdown of county data

Figure 35: Footnotes presented below the data

The Oregon site also features a "COVID-19 Weekly Report" that goes even more in-depth on linking cases with certain types of outbreaks and reported symptoms for this week's cases specially. This document is very complex. It is presented in a 40-page PDF that a user has to download and view much like a booklet or academic reading. Its language is elevated using words such as "sporadic," "epidemiological," "CDC," and "OHA" that the average Oregon citizen may not be familiar with. This document also features many numbers and percentages that again are even harder to contextualize as they are presented in a paragraph format (See Figure 36). While it does break down its use of many charts with helpful definitions, the sheer amount of information and new definition as well as style of charts within this document may overwhelm a user with its complexity. This style of information presentation should be for a more advanced user seeking specified information.

During Monday, March 22, through Sunday, March 28, 2021, OHA recorded 2,456 new cases of COVID-19 infection, up 28% from last week's figure and despite an 10% decrease in testing, with test positivity rising from 2.9 to 3.7%. Hospitalizations slipped from 139 to 137, and 10 Oregonians died in association with COVID-19—the lowest weekly death count since the week of June 1–7, 2020. Of the 164,164 cases reported in Oregon since the start of the pandemic, 9,166 (5.6%) have been hospitalized, and 2,375 (1.4%) have died. Recent data on mortality in Oregon, including deaths associated with COVID-19, are available at https://public.tableau.com/profile/oha.center.for.health.statistics.

Hospitalization and death rates increase with age (Table 2). Although only 3.9% of Oregonians are 80 years of age or older, they have accounted for 1,803 (20%) of the COVID-19-associated hospitalizations and 1,245 (52%) of the COVID-19-associated deaths. Persons 70 years of age and older make up 12% of Oregon's population, but they have accounted for 3,689 (40%) of the COVID-19 hospitalizations and 1,819 (77%) of the COVID-19-associated deaths. Additional data are available at https://public.tableau.com/profile/oregon.health.authority.covid.19#!/vizhome/OregonCOVID-19CaseDemographicsandDiseaseSeverityStatewide/DemographicData.

Figure 36: Example of data presented in paragraph form

oregon.gov's information about vaccines takes up a majority of the homepage for the site. The first resource is about the vaccine information in the community. The user has an opportunity to select X, which brings up a small pop-up with three options through which a person can receive their vaccine (See Figure 37). These are presented in simple terms with hyperlinks to external resources if necessary. The next section presented directly underneath entitled "Scheduling process for 65 and older updated in Portland metro area" is updated information on how citizens from certain counties will receive information about their vaccine and how to register for notifications about their eligibility.

This site does not have an interactive graphic or map that shows where specified testing sites are located in specific counties. This site also does not feature a quiz on their site similar to the one on kycovid19.ky.gov about eligibility but does link to a similar quiz. However, this link takes you to a completely separate website where a user could

fill out this quiz. This quiz is linked under "scheduling process," not vaccine eligibility. This means that it is much more likely that a user searching and trying to decipher if and when they will become eligible would have to utilize the static graphic of Oregon's site's homepage features.

Figure 37: Example of vaccine options presented

The graphic featuring the vaccine distribution breaks down oregon.gov's vaccine distribution plan (See Figure 13). This graphic features a lot of information about who and roughly when different groups are going to be eligible to be vaccinated. This graphic takes much longer to comprehend than the quiz style eligibility indicator because the test is small, there is a lot of the text, and a person has to take the time to read the whole graphic to really get an understanding of when they can start trying to obtain their

vaccine. This graphic also utilizes an asterisk system, either one or two asterisks, that provide additional information, but these asterisks look similar to the bullet points used throughout the graphic because the typeface is so small, and it is the same color as the text it appears after also making it hard to be identified quickly. Even with the length of this resource it says very little at the bottom. This is not an exhaustive list, again making this an ineffective source of information for a person quickly wanting to see the timeframe for and if they are currently able to receive a vaccine.

Leaving Oregon's website's homepage and going to the tab specially for the vaccine, the complexity is handled more effectively (See Figure 38). The page opens with how to use "Get Vaccinated Oregon," the main resource for registering and making appointments for the vaccine. This tab also features a graphic that makes it easy through the use of check marks to easily help a person decide between the vaccine tools available. This webpage also provides a link to a subpage specially about the safety of the vaccines. This page features a vaccine quick facts sheet where through graphics elements where common misconceptions are broken down into concerns met with facts. This is a simple and easy way to ease many of the fears people have about the vaccine. The only disadvantage to this document is that there is not in-depth information about the source for these facts and someone who has a real fear of the vaccine or is steadfast in their possibly incorrect beliefs would not believe this document without first vetting its sources.
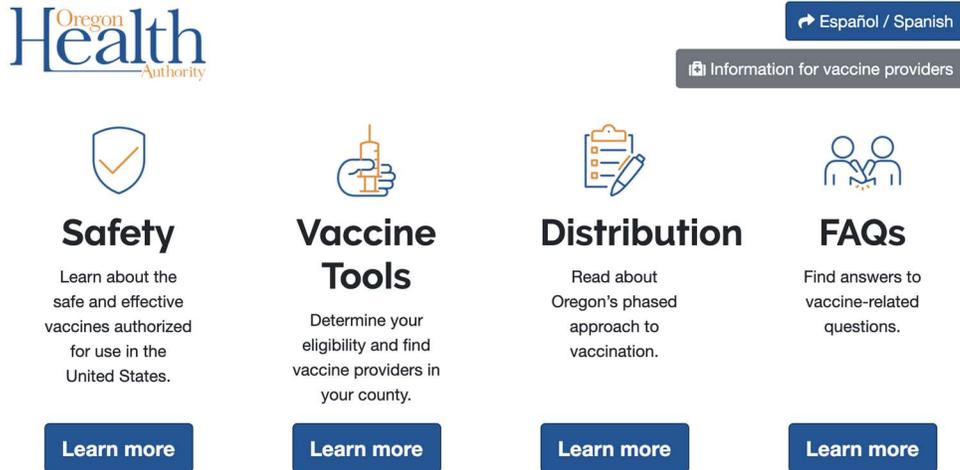
Figure 38: Vaccine information page

Overall, oregon.gov is less effective than kycovid19.ky.gov because of its lack of interactive data. Almost all the data being directly represented on Oregon's site are static and are represented simply as paragraphs or numbers. These kind of data are harder for the average person to understand and therefore are overall more complex than Kentucky's website's visualization of the data though their use of quizzes and maps a user can manipulate.

ldh.la.gov

Louisiana's website's homepage features a chart about COVID-19 cases that is a mix between Kentucky and Oregon websites' methods. Like oregon.gov, ldh.la.gov features the specific numbers of new cases, deaths, and tests as well as total numbers for these categories. ldh.la.gov makes these numbers a bit more interactive by giving the option of a drop-down menu with the specific counties for each of these categories (See Figure 39). This interaction and ability to manipulate the dataset for specified needs

makes this complex data a bit easier to get takeaways from. The Louisiana's website's information is also like Kentucky's site because it also utilizes a color-organized map of the counties (See Figure 40). It categorizes the counties as blue as the lowest, yellow as moderate, orange as high, and red as highest number of cases. Because it features such specific data above the map, there is not numbers listing in either the legend or on the map itself unless a user clicks the map to engage with it more than even more specific numbers about the country become available.

There are also arrows on either side of the map that when clicked go to different graphs with a differing amount of detail on different aspects of case totals, but that are more complex than the default maps that shows when someone is scrolling at the homepage without prompting those arrows. The data presented on these other tables and graphs are less condensed and more complex than the originally presented data of the color-coded map.
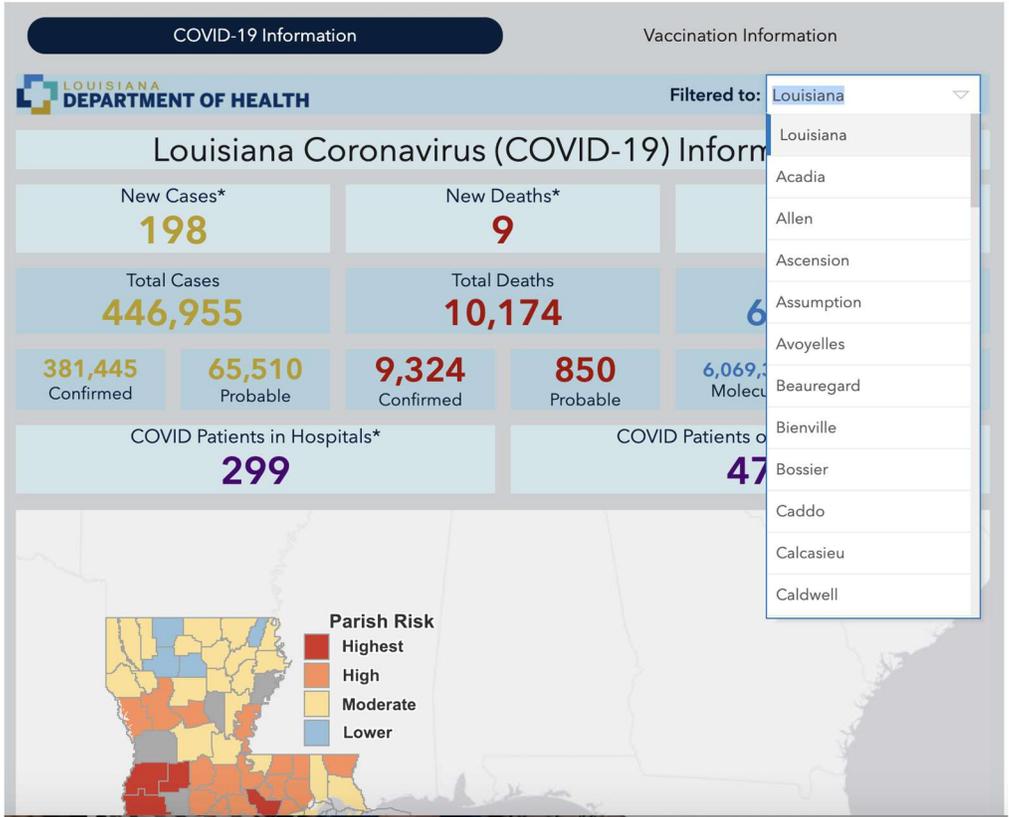
Figure 39: Detailed information about cases featuring drop down menu to further specify
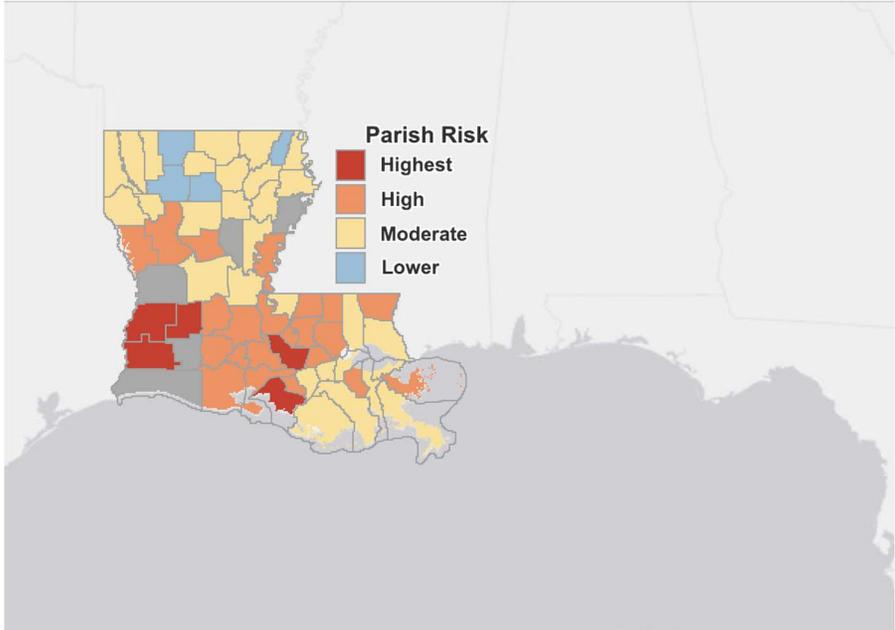
Figure 40: Color coded map of the case rates

The designers of the Louisiana site also provide files that can be downloaded for additional information on cases and testing data by Parish by day, cases and testing data by Census Tract by week, and cases by age/gender by week (See Figure 41). This information is very complex. Not only is it an item a user has to download, but it has not been interpreted in any way and is still in an excel sheet. When opening this document, a person is overloaded with a long list of parishes and number stats on them. Titles are cut off as the columns are small making connecting what numbers go to what titles confusing. The data listed are for the entirety of the pandemic every day or week which makes the sheer amount of numbers and parish names listed overwhelming. This is another example of static data that as mentioned is not as effective as interactive data such as the map utilized by this site.
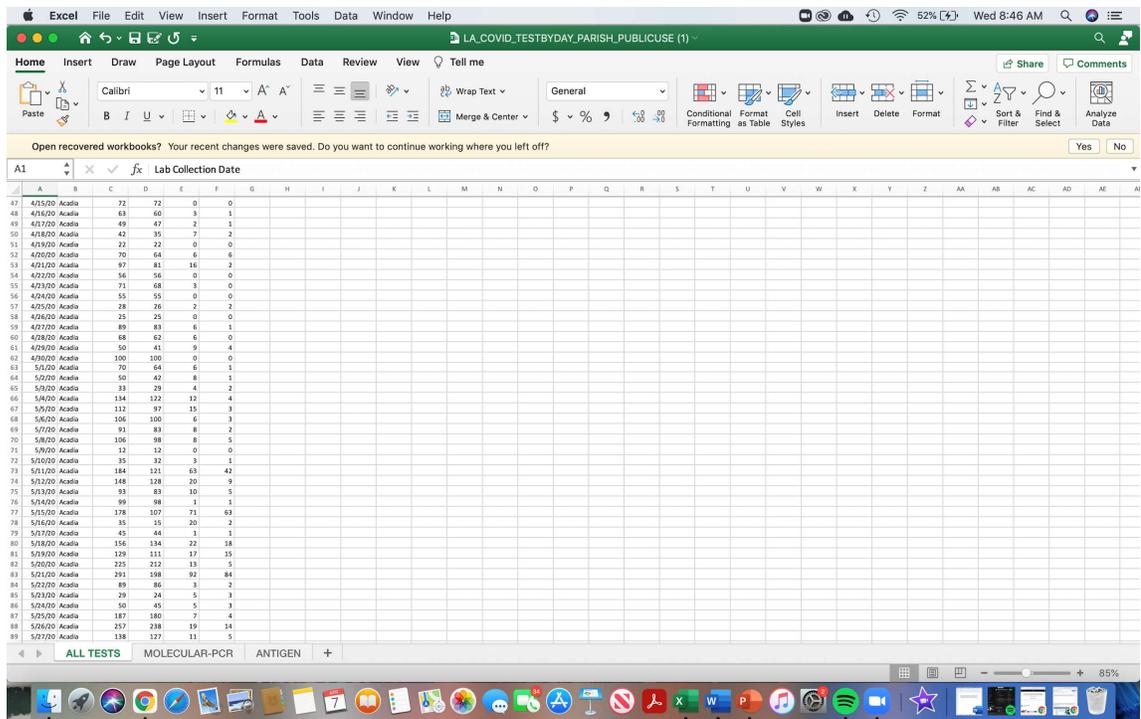
Figure 41: A small section of the additional data a user can download

The carousel at the top of the homepage features information about the vaccine as well as what phase of the vaccine disbursement the state is currently on (See Figure 42). When someone clicks on the "COVID-19 Vaccination Information" image in the carousel, they are met with three green tabs at the top of pages that feature the articles "Am I Eligible? and "Where Can I Get Vaccinated?" When someone clicks on the COVID-19 Vaccine Eligibility tab this is another place where Oregon's website utilizes static data but this time in the form of paragraphs. There is a long list of different conditions a person could fall under to be eligible similar to Oregon's site's listing of conditions in their graphic. ldh.la.gov narrows it down by listing only the members eligible for the current phase they are in, where as on oregon.gov, they listed in detail who was eligible during every phase and for what reasons providing a lot more information.

While this list is effective in informing, it is not visually engaging, making it a bit more complex for someone to process. The "Where can I get Vaccinated?" content towards the middle of the page is a tool to find vaccination sites. It is a bit less interactive than kycovid19.ky.gov because it lacks colors and easily accessed hyperlinks and phone numbers. A user has to scroll over to find the full website URL and phone number or someone would have to full screen the table (See Figure 43). Someone can organize the data by parish making it easier to find the relevant information for the specific user.

Figure 42: The carousel and information it provides on the vaccine

Figure 43: List of vaccination sites

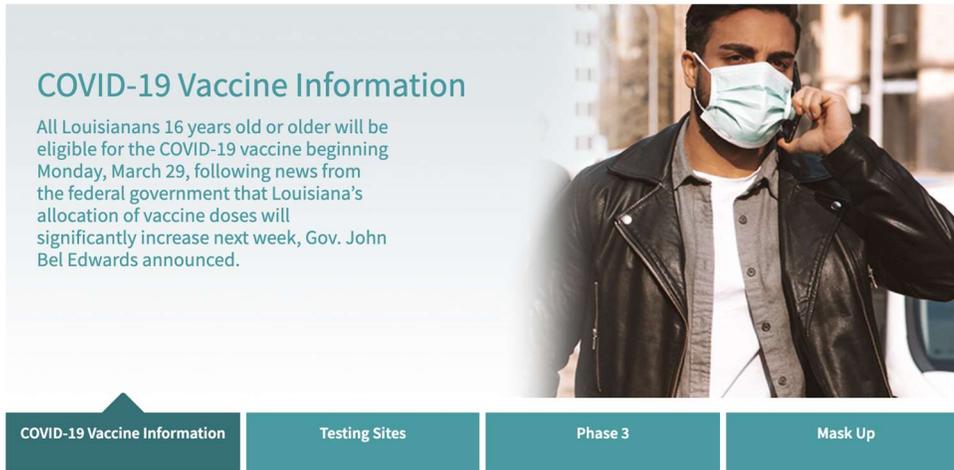Under these green tabs there is another color-coded map and number set nearly identical to the case number graphic described above, but this graphic focuses on vaccine doses administered, providers enrolled, and what phases the state is in. This graph also utilizes dark to light blue but also size of circles to indicate what percentage of the population has been vaccinated in each of nine regions which feature many parishes. This graphic also differs from the case one because number totals featured above the map cannot be separated into counties and instead are only presented as the state totals. A person could click on the blue circle of a region, but there is no information on parishes specially. This graphic again has arrows that allow someone to scroll through to get more and more complex data on different aspects of the vaccines such as race and gender of recipients. These data also feature an aspect of content within the arrow slide that details data sources in simple terms.

Overall, ldh.la.gov falls in-between in terms of complexity of its content. It utilizes both static and interactive content with the interactive content being slightly less engaging and visual dynamic as kycovid19.ky.gov, but slightly more engaging than oregon.gov. The site does, however, offer a lot of static content of varying degree of complexity.

Predictability

Predictability refers to the likelihood or risk of future outcome of the disease. This is something that has been challenged during the entirety of the pandemic. Never has there been a pandemic on such a global scale and because of this there is little certainty about the future and when life will "return to normal," whatever that new normal may be.

This struggle is global, national, and local. By looking at the Kentucky, Oregon, and Louisiana response sites a user can see how each site respectively tries to ease this tension.

kycovid19.ky.gov

The future of COVID-19 in Kentucky is something that kycovid19.ky.gov does not focus on framing explicitly. While it mentions future stages of vaccine distribution and the fact that the counties can fluctuate from being critical to ok, but beyond that even within the guidelines for work and school, it is very much what is being done and what should be done in right now. This may be because it is hard to predict where this virus is going, but people need at least a resource maybe stating about the unpredictability and about how there really is no timeline to when the world will "go back to normal."

On the vaccine distribution webpage, there is a place where a person could read "our plan." Within that document there is a rough outline, in terms of weeks, not specific dates, when the vaccine is going to be distributed to what phases. This is a vague plan that also is essential to how many vaccines are sent to the state. There is no information on Kentucky's site about specific dates when phases will be eligible.

There is also no concrete information on when restaurant and business capacities will go up and when mask regulation may end. While there is mention that this depends on how critical Kentucky is in terms of the number of cases and rooms in the hospitals, but again there is no set end date to when no one will be testing positive in Kentucky. The site does provide access to Governor Beshear's executive orders on business items like the mask mandate, price-gouging, dispensing of pharmaceuticals, and order on utility

relief that he created in response to the pandemic, but almost all of these orders have the stipulation that he can review and renew these orders every 30 days. For example, the mask mandate has been reviewed and extended many times as the state of the pandemic is still dire enough to require this mandate. This means that there is again no set date for when mask regulations will be lifted or restaurants will allow full capacity indoor dining.

oregon.gov

Oregon's site's response to the future of this pandemic is similar to Kentucky's, but Oregon provides a bit more concrete answers to the question of when vaccines will be phased out. On their vaccine distribution plan flyer, they feature set dates to when each group of each phase will be eligible. For example, it says phase 2 group 1, which is characterized as people who are 45-64 with no underlying condition required, will be eligible no later than June 1, 2021. While it is not so set in that timeline that they can for sure say what day specially it will be as there is a possibility it may be before that June 1 date, but they guarantee it will not be later than that.

Similar to kycovid19.ky.gov, Oregon's governor, Kate Brown, also has provided no date to when mandates and executive orders like mask wearing and social distancing will end and also has been extending executive orders to make sure that those actions stay being enforced indefinitely. She has also committed to reevaluating these executive orders every 60 days and see if they still apply, but again no timelines for the actual end of these practices beyond that.

ldh.la.gov

ldh.la.gov provides the least amount of information about the future of the virus. This site only provides information about the people currently eligible for the vaccine. There is no graphic or even listing of other phases and categories that people may be a part of and there is no timeframe present for when this information will not only be available, but also when the vaccines themselves for these groups will be available and be disbursed. There is also a lack of resources on the governor's executive orders. There are scarce mentions of the governor at all on this site.

A resource that Louisiana's site does feature is a "COVID-19 Testing Plan." This plan includes four clearly stated goals and details of a multipronged approach about how the state will implement these goals. While again there are no specific dates mentioned this is a useful resource for someone who may be concerned about the future of testing practices in the state.

cdc.gov/coronavirus/

It seems like the issue of predictability may require more authority and budgeting than the state government can allot during this national crisis. People who are searching for what the experts are predicting about the future of COVID may be better suited to go to websites backed by organizations who have more time and money to dedicate to the cause of hypothetical data such as the official Center for Disease Control website.

The CDC site features more detailed forecasts for both cases and deaths from the virus both as a whole nation and on a state-by-state prediction, but these data are presented as a line graph and are very complex and most likely would not be understood

by the average American. The CDC website also links to many different sources and studies done by independent universities and groups about social distancing and the predictions on when those regulations may let up. This source is most likely the most information, but everything is still simply a prediction. There is still no certainty when it comes to this pandemic and that can be scary, but hopefully these predictions become a reality and this pandemic will end soon through the vaccine timelines being accurate and effective. Once this timeline is achieved then there may be more set timelines with specific dates for the mask mandate ending and capacities for activities such as indoor dining and other types of capacities.

CONCLUSIONS

This next section summarizes the major takeaways found during the analysis of these sites. It summarizes major takeaways for each of the five sections: usability, impression, ambiguity, complexity, and predictability.

These take-aways are important not only to improve these three state sites, but also as a best practices source if there ever is another major worldwide crisis demanding the same skills needed during this crisis such as crisis communication skills and state-run websites quickly created for the specific issue. Hopefully, with this information the creator of this content would not be as overwhelmed and have a toolkit they could attack that project with and create an overall positive and informative user experience.

The takeaways are in general terms because of the goal for them to use for any site with similar goals in general not specially the three state websites I looked at. I analyzed these sites for patterns and common issues rather than to state which one is the best and which one is the worst and because of this the major takeaways are reflected generally with specific examples taken from the sites.

BEST PRACTICES

Usability

In order to create a usable website, easy navigation is vital. A way to achieve this is by implementing tools such as search bars and a top menu that travels with the user as they scroll into the design of a website. As I learned from my research, people want to be able to find information quickly and easily. If these goals are not met, then it is likely that the user will give up or go to another site to find the information for which they are searching. In terms of specially the COVID-19 response websites, if a person seeks information elsewhere it has a much higher chance of being inaccurate or interpreted inaccurately.

Information should also be presented in expected ways. If a user believes that an aspect of a website will be one thing and it functions in a different way, they will be confused, and it will lower their overall user experience. For example, social media links should lead to the accounts affiliated with the website rather than be a tool for personal sharing of a user. While a sharing feature could be useful when it is presented in this way it is not.

Websites should also be intentionally organized. Clustering information too close together or making text extremely small can make it hard for a user to find the information for which they are searching. It is better for resources to be neatly organized with a hierarchy of heading and intentional systems to follow along the page as a whole. This could mean an image carousel with linked articles, it could mean a grouping of

squares all featuring different content, it could mean using banners throughout the site, or many other design features. From the sources on web design, it is important that whatever design tools a site uses they are intentional and serve a larger purpose.

A creator of a website similar to these should also be aware of its Google-ability. If a user cannot find the site, then it is essentially useless. One way to ensure a site is easily findable, is to include key terms in the handle or description of the website. For example, in the case of the COVID-19 response website including the state name and COVID-19 in the website description make it much easier to find it if the exact web address is unknown.

Impression

The impression for these high-stakes websites should be as calming and neutral, but as informative as possible. From my readings on effective health communication, experts stress the need for a positive impression to minimize feelings of uncertainty and fear that are often associated with a crisis of this magnitude.

One way to create a positive impression is through the color scheme of the website. A creator should know the connotations of a color and the emotion it evokes. For example, all three sites I analyzed utilized a majority blue color scheme because the color blue is perceived as calming and calls for responsibility. This mixture was exactly the impression that these sites needed as a place to become informed on what they, as an individual, needed to do to help slow the spread of COVID-19.

Another way to create a positive impression is through the typeface used throughout a website. Something this small may seem unimportant, but typeface can have

as much of an impact as a color scheme if done correctly. The typeface for this type of website should be neutral and easily readable. There is no need for fancy text because informing is the main goal. All three sites picked an effective font that were standard in form and are timeless. This site is made for the general public, so they need to be fit for the style and needs of a wide variety of people.

Being professional and providing authority are also important aspects of impression. People coming to these sites need to know that it is legit and why they should trust the information written on it. For example, the sites I analyzed had high quality professional photographs featured throughout their webpages. The websites also all utilized official government logos and displayed those at the top of the site. As we saw from the overwhelming number of logos on Kentucky's website these tools need to be executed correctly or it will harm rather than help the overall impression.

Ambiguity

Ambiguity is an important aspect of crisis communication. People want to be informed and clearly know where information is coming from as well as if it is updated information. There should be a clear system for updates and maintenance. Some ways a website could do this is by posting the timeframe the site is updated similar to Oregon's website's systems. They would place above a chart "updated last" and then whatever date corresponds with the latest update.

There could also be a disclaimer like Louisiana's site utilized. This disclaimer explains why some information may change suddenly or be proved false. A pandemic is unpredictable and because of this the data can also be unpredictable.

In order to avoid ambiguity, it is also important for websites to cite where they got their information. Clearly citing outside sources or internal studies is a quick way a site can avoid any confusion or debate about the accuracy of their content.

It is vitally important that data are presented in understandable terms with graphics that make sense and as accurately as possible display these data. This means sometimes pulling away from super graphic elements such as the proportional circles used on the Johns Hopkins map and instead using raw numbers and color variations.

Complexity

Complex information is at the center of a health crisis of this scale. There are terrifying numbers, unfamiliar terminology, and fear of the unknown. One way to help minimize these problems is by allowing a user to interact with complex data as well as break it down as basic as possible.

One way to do this is by allowing users to filter content by different categories or locations. For example, when Kentucky's website allowed for a user to filter their map content to categories such as age or gender and location. That way a user can look at a smaller data set and can better absorb what the numbers mean.

As seen with the non helpful excel sheets on Louisiana's site, too many numbers presented in a list or chart format can be overwhelming to the average user. Instead, a content creator should utilize things such as the map graphics or other types of graphics that put this information into a more welcoming format that begins to help contextualize the data for the reader.

Breaking down content can also come in many forms. One successful example I saw in my analysis was Kentucky's website's vaccine quiz. Instead of presenting all the factors available for someone to be eligible for the vaccine, Kentucky's website broke it down into questions that lead users to either a "yes, you are eligible" or "no, you are not eligible" answers. Breaking down this information made it more digestible for the average person and made finding this information less intimidating, therefore allowing more people to schedule their vaccinations.

Complex data should be interactive, visually dynamic, and engaging. Static data with an overwhelming amount featured can lead to confusion and a sense of hopelessness that causes someone to give up trying to understand.

Predictability

The predictability about the future of the pandemic, or any future crisis, is important because everyone feels the uncertainty and fear that accompanies uncertainty. The sites I analyzed did not really attempt to predict the future. While they outlined that things will hopefully "get back to normal" eventually and outlined the future of the vaccine distribution that is about as far as the state issues sites went. The CDC site does provide a more detailed forecast for the cases and death totals on a state-by-state as well as national basis.

While the CDC's site's information is helpful, if the state response websites' main goals are to be the main hub of information for the state, they personally need to address the issues of the future more directly. This may mean running their own studies or simply summarizing the CDC's finding, but they need at least one web page directly stating

where they stand as a state on the future of the pandemic and what the future of the state will look like.

If this is not doable, if the states feel that the pandemic, or any other future crisis, is just too unpredictable to even hypothesize about what the future may hold, then they need to at least make a statement addressing that fact and explain why they believe this. Simply avoiding the questions of the future is not effective in helping inform the users.

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