

VA



U.S. Department  
of Veterans Affairs

# Facility Locator - Assistive Technology Discovery and Usability Study

Discovery Readout

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June 24, 2021

# About the Research

## Research Goals

- Establish foundational knowledge of Veterans' Facility Locator search experience while using assistive technology on desktop and mobile devices.
- Understand how search experience expectations might differ on mobile vs desktop
- Identify pain points for Veterans using assistive tech to search for facilities
- Validate recent keyboard navigation and voiceover changes

## Methodology

2-hour, moderated Zoom sessions with Veterans, who use screen readers, voice and/or other assistive technology. Participants were asked about their assistive technology usage, how they perform location search tasks online, and were given some common Veteran location search tasks to accomplish using their preferred method, VA.gov homepage and Facility Locator.

# Research questions

- Can Veterans, with low to no vision, who use keyboard, voice and/or other assistive technology, successfully complete facility search tasks?
  - Can they easily perform a search?
  - Can they easily consume results?
- Does Facility Locator need to change or evolve to offer an equitable experience? If so, how?

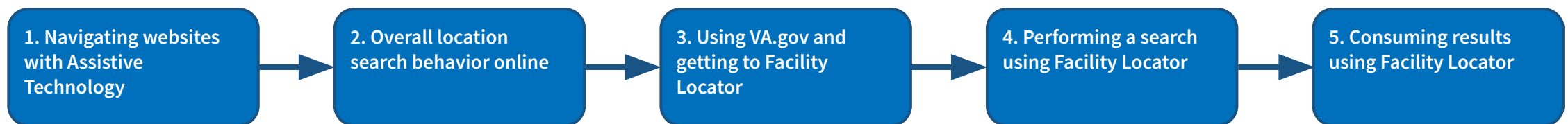
## **Hypotheses to be tested**

Using Facility Locator and assistive technology:

- Veterans can easily perform a search.
- Veterans can easily consume results.

# Conversation guide highlights

- Assistive Technology checklist to understand the user's context
- Warm up questions about recent location searches and VA.gov experience
- Search tasks:
  - nearest VA
  - nearest VA using VA.gov
  - dermatologist at your nearest VA
  - planning a trip and you'd like to know what the closest VA hospital



# Who we spoke with

7 Veterans: Female (2), People of color; Black (3), Rural (3)

P#	LEVEL OF VISION	DEVICE	ASSISTIVE TECHNOLOGY	EXP LEVEL
P1	Completely blind	Desktop	JAWS SR	Adv
P2	Completely blind	Desktop	JAWS SR §†	Adv
P4	Cog Dis, Dyslexia	mobile	iOS dictation §†	Beg
P6	Low vision	mobile	VO/Keyboard §	Beg on iOS
P7	Completely blind	Desktop	JAWS SR	Adv
P9	Low vision	Desktop	ZoomText ¶	Int
P10	Low vision	Desktop	JAWS + ZoomText ¶	Beg

Tech not observed during testing: § Audio, † Video, ¶ ZoomText

Marginalized Veteran groups missing from this research:

- Other than honorable
- No college experience
- Latinx, Biracial, Asian, Native, or LGBTQ+
- Expat (living abroad) or of immigrant origin

[Participant Tracker on Google Sheets](#)

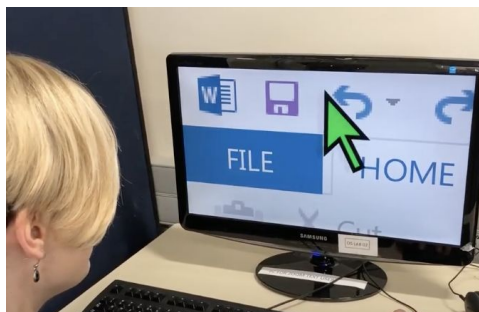
# Assistive Technology

*"Because my spelling is atrocious I tend to do it orally and it recognizes my voice."*

-P4



## ZoomText



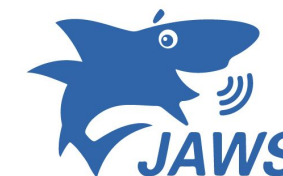
*"I use JAWS on Windows, Voiceover on my iPhone. On my computer, I usually don't find directions. I would use my iPhone to do the grunt of the work because I use dictation."*

-P2

**FUSION™**  
POWERED BY  
JAWS® AND ZOOMTEXT®

*"I get the flexibility of using ZoomText or JAWS"*

-P10



**DRAGON**  
NATURALLY SPEAKING



*"Sometimes I'll dictate directions into my Victor Reader Stream"*

-P7

Dyslexia

Low Vision

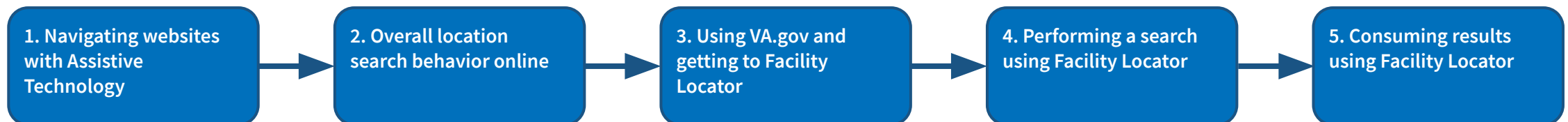
No Vision

# Research Findings

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# Key Findings

1. As a Veteran who uses assistive technology, orienting myself on websites is often unpredictable, cumbersome and time-consuming.
2. When I look for location information for a place that I need to visit physically, I use my search engine either by dictating or typing in my search parameters.
3. I have trouble finding what I am looking for when I search for things on VA.gov.
4. I didn't know Facility Locator existed, but now that I do, I encounter some obstacles that would deter me from wanting to use this tool for searching.
5. Consuming Facility Locator search results was also tricky.





# Hypotheses to be tested

Using Facility Locator and assistive technology:

**Veterans can easily perform a search:**

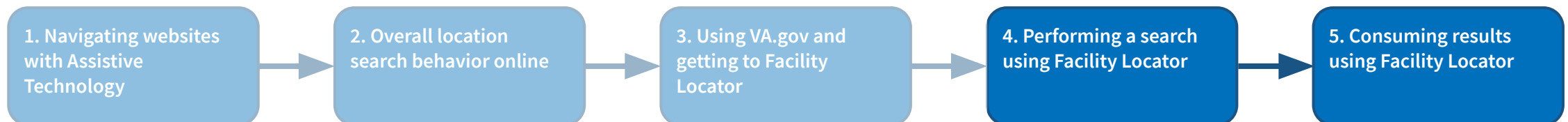
**LIKELY UNTRUE**

Even when participants were able to successfully complete a search, it was not easy. Most expressed dissatisfaction with the experience, confusion with terminology and encountered usability issues.

**Veterans can easily consume results:**

**LIKELY UNTRUE**

Results listings are perceived inconsistently across users of different assistive technologies. Many key features and information were missed by screen readers, making the experience confusing for many.



# 1. As a Veteran who uses assistive technology, orienting myself on websites is often unpredictable, cumbersome and time-consuming.

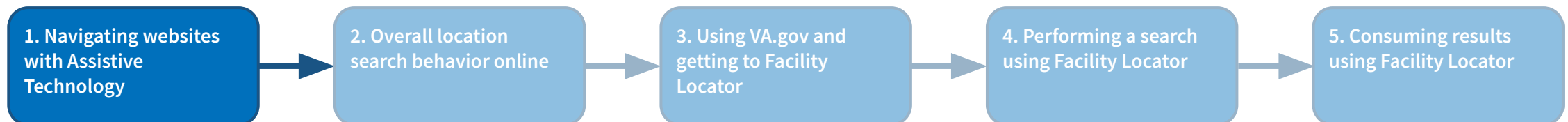
1.1 - I need to have multiple ways to accomplish online tasks but have my preferences

1.2 - I keep my desktop clean to not confuse my screen reader

1.3 - I make my viewport small so I may get a mobile experience on desktop

1.4 - I am new at using Siri but want to keep learning new ways of dictating my needs

1.5 - It's easy for me to make spelling mistakes



## 2. When I look for location information for a place that I need to visit physically, I use my search engine either by dictating or typing in my search parameters.

2.1 - I already know my VA so I would likely only do this for unfamiliar locations

2.2 - I prefer to dictate location searches on my phone because it's quicker and easier

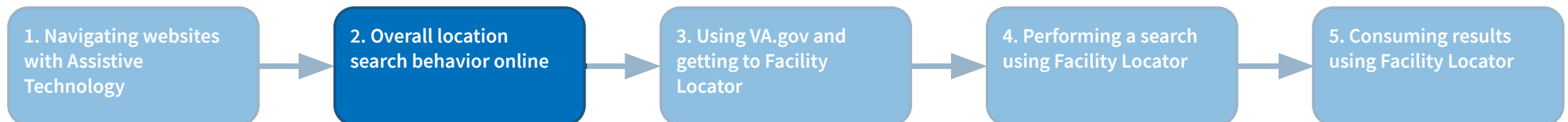
2.3 - I use JAWS on my desktop for more complex searches or tasks

2.4 - Search engine results info is usually all I need, next I call or get directions

2.5 - I trust a search engine result when I hear VA.gov is the source

2.6 - I wish I could see hours and services of VA facilities on Google search results

2.7 - Sometimes I do see hours but they don't make sense to me



### 3. When I search for things on VA.gov, I have trouble finding what I am looking for.

3.1 - The homepage is difficult to navigate and I can't orient myself easily [[homepage findings](#)]

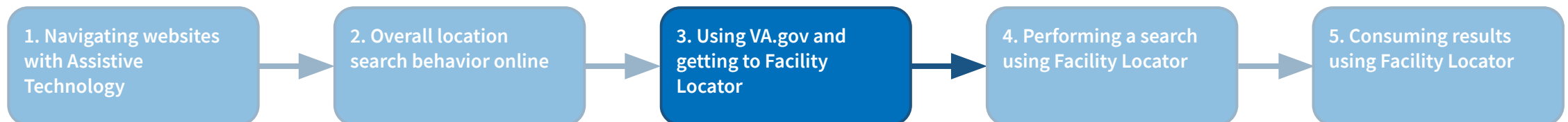
3.2 - Global searches don't produce relevant results

3.3 - I get routed to too many different pages

3.4 - If I find something useful, I don't know how to retrace my steps later

3.5 - I encounter too much information and I get overwhelmed

3.6 - Location searches result in a VA list [teamsite page] that I have to Google individually



## 4. I didn't know Facility Locator existed, but now that I do, I encounter some obstacles that would deter me from wanting to use this tool for searching.

4.1 - There are too many things to listen to before I can start my search

4.2 - There are too many requirements to fill in and (4.3) I don't know what they mean

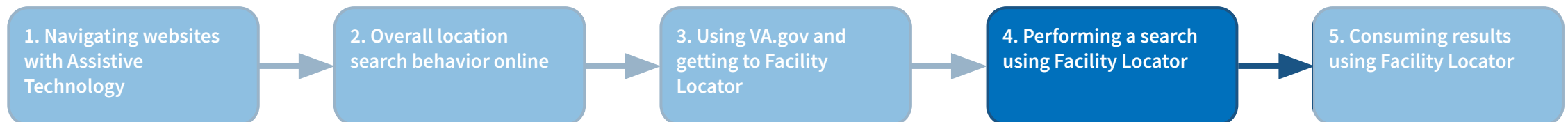
4.4 - I didn't put in the right requirements, so it tells me there's an error

4.5 - I want to choose by something that I'm familiar with, like clinics or hospitals

4.6 - The service type combo box doesn't work

4.7 - If I'm in a crisis, I won't want to struggle with this page

4.8 - I prefer to just enter searches into one simple search box



## 5. Consuming Facility Locator search results was also tricky.

5.1 - I did a search but the screen reader didn't tell me that there weren't results

5.2 - I got results but I don't know what the letter and number combination means

5.3 - I don't hear a way to get directions to these locations

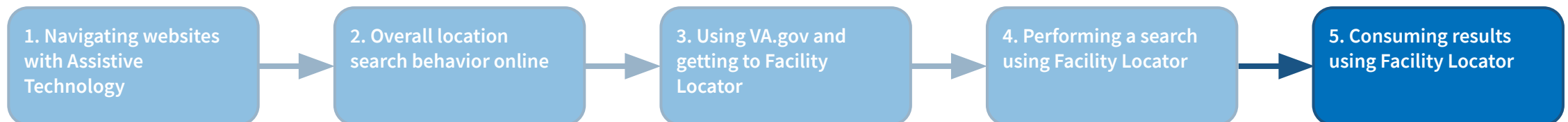
5.4 - It's not clear to me what is a phone number or other piece of information

5.5 - I don't know what 'limited services and hours' means

5.6 - I didn't realize that I was being taken to Google Maps, I like to know this

5.7 - If I leave VA.gov I expect to go to a different tab, otherwise don't open a new tab

5.8 - I didn't see a map but I usually don't use them because they aren't accessible

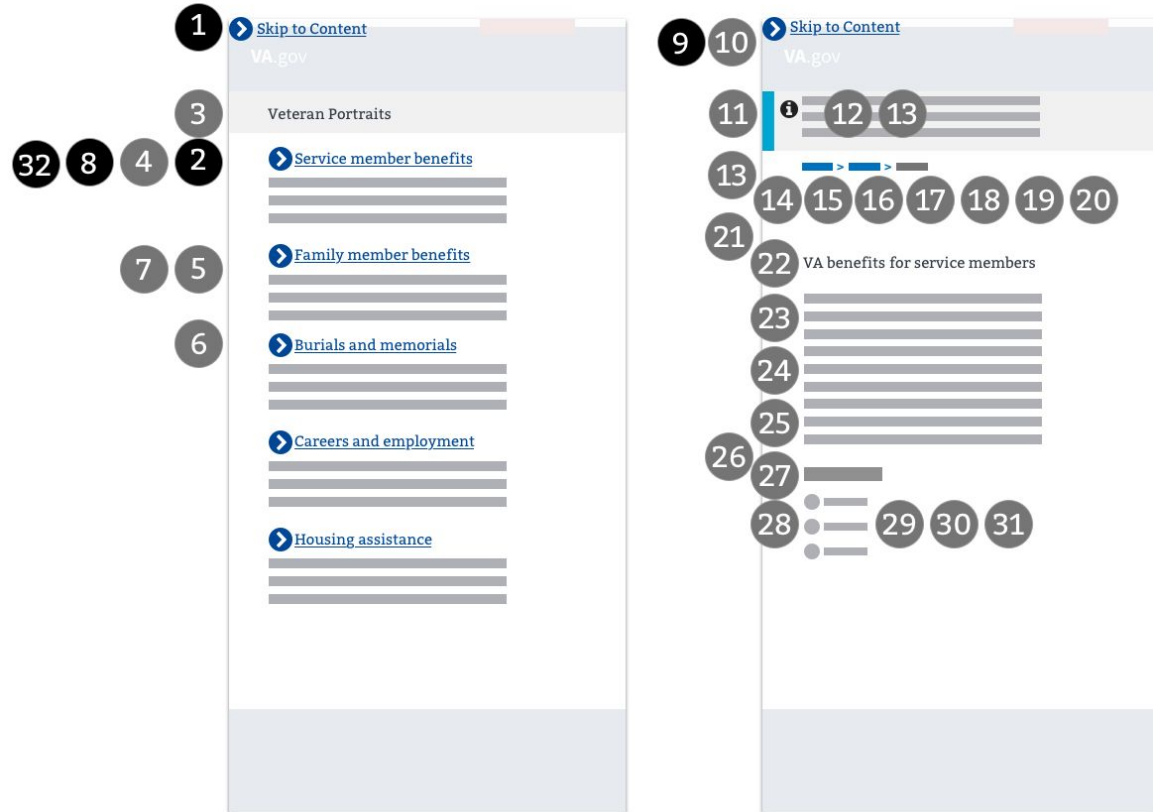


# Key Finding 1

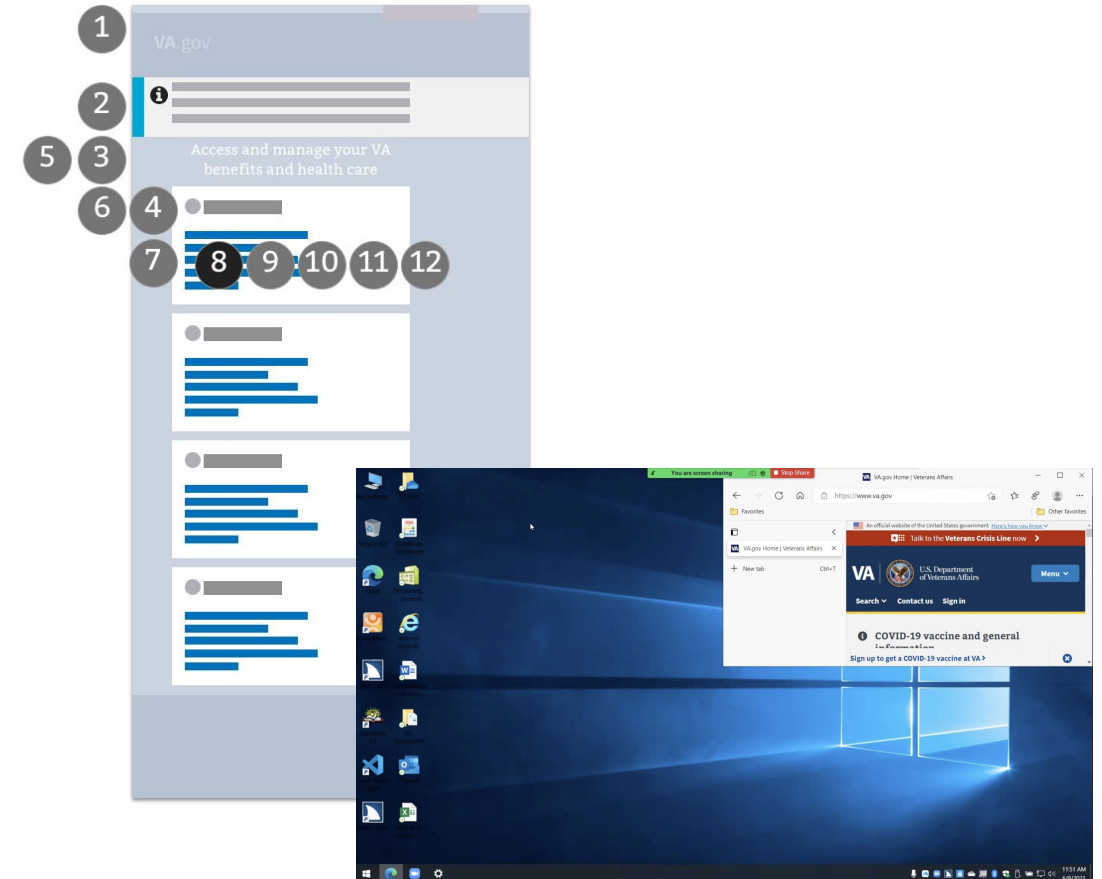
As a Veteran who uses assistive technology, orienting myself on websites is often unpredictable, cumbersome and time-consuming.

# P1. Completely blind participant using JAWS on desktop

Attempt #1:  
Using "Skip to content" on homepage



Attempt #3:  
Navigating by heading level from top of the page



# Pausing point/takes action    # Listens for information



“Do you understand one thing I said? I typed in VA.gov a while ago and this is not the page that it took me to. So, I went back a page. I don't know what you see but according to my screen reader, I haven't been to this page before. I didn't hear any of this stuff previously”

“Why in heaven's name did it take me to the middle of the page?” –P1

1. As a Veteran who uses assistive technology, orienting myself on websites is often unpredictable, cumbersome and time-consuming.

**1.1 - I need to have multiple ways to accomplish online tasks but have my preferences**

1.2 - I keep my desktop clean to not confuse my screen reader

1.3 - I make my viewport small so I may get a mobile experience on desktop

1.4 - I am new at using Siri but want to keep learning new ways of dictating my needs

1.5 - It's easy for me to make spelling mistakes

## Table - Screen Reader Navigation Methods

<b>Response</b>	<b>% of respondents</b>
Navigate through the headings on the page	67.7%
Read through the page	8.1%
Use the Find feature	13.9%
Navigate through the links of the page	7.1%
Navigate through the landmarks/regions of the page	3.2%

According to a recent [Webaim survey](#), when trying to find information on a lengthy web page, screen reader users navigate via headings most often. We observed many combinations of navigation methods in our study, including the use of ‘skip to content’ which most screen readers use sometimes (>28%), often (>14%) or always(>16%).

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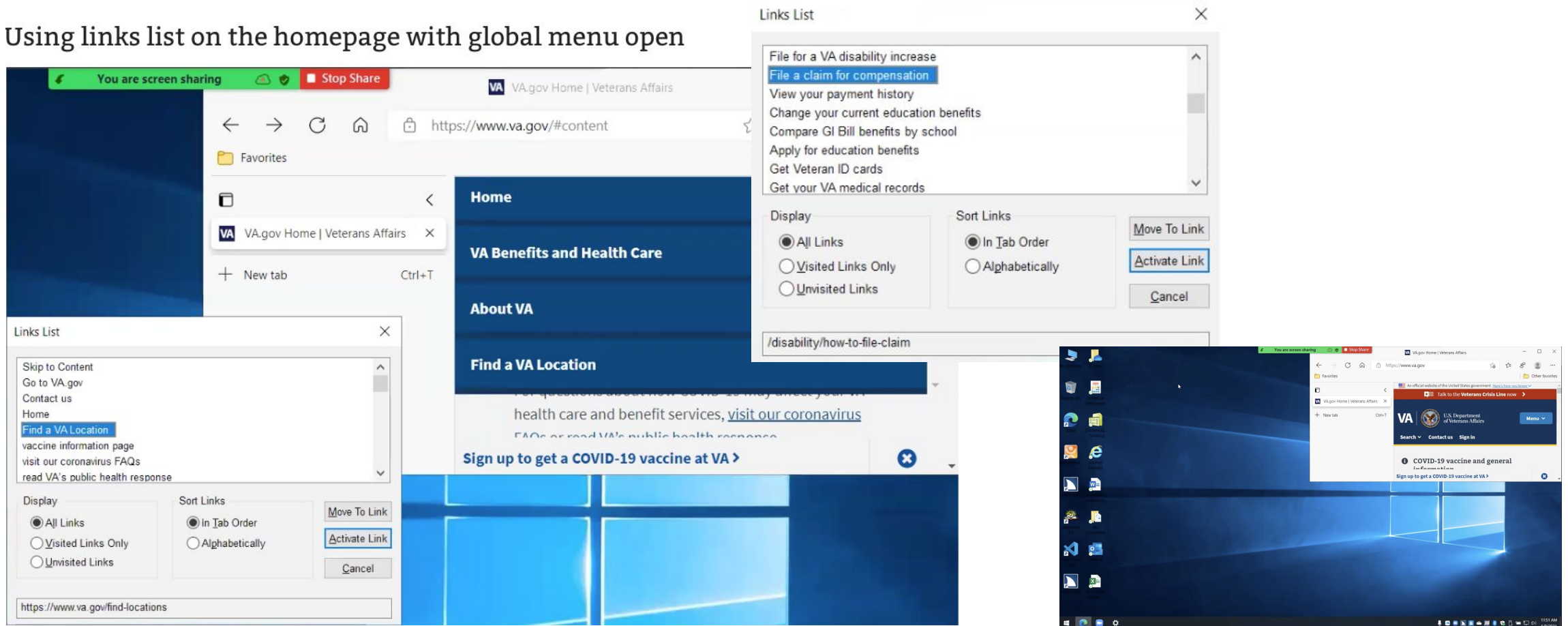
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# P1. Completely blind participant using JAWS on desktop

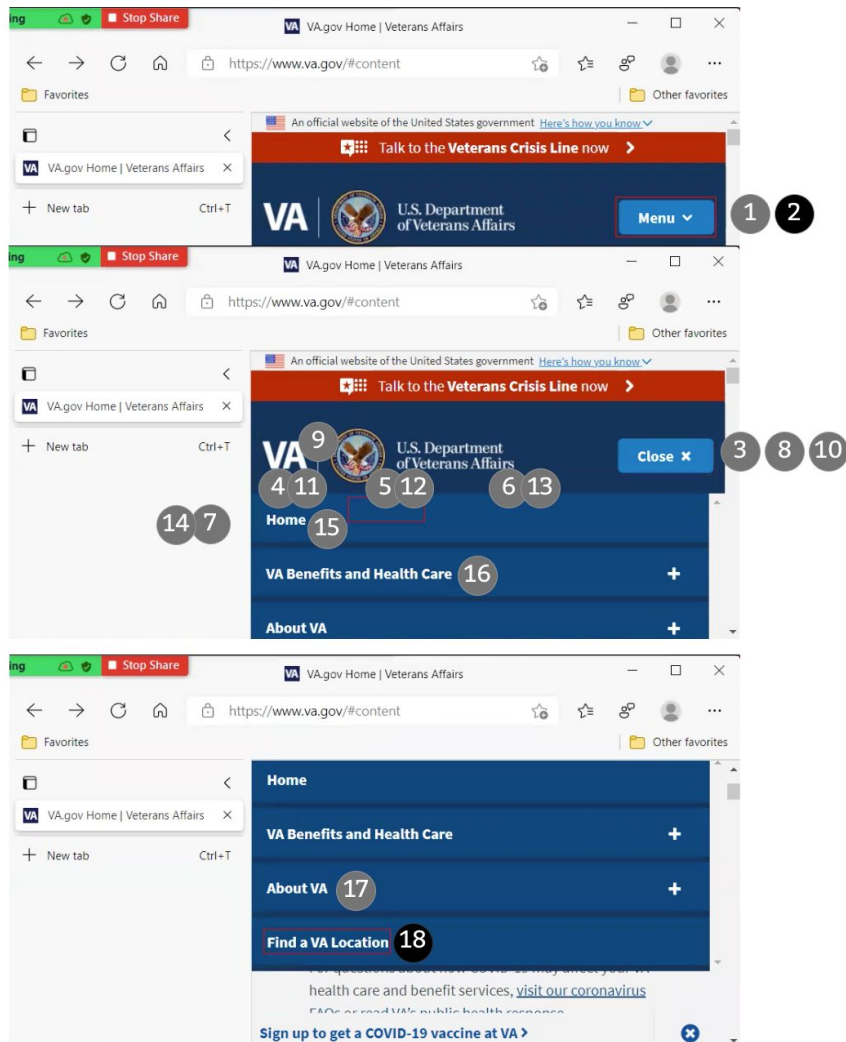
## P1 - Attempt #4: Using links list on the homepage

Using links list on the homepage with global menu open



# P1. Completely blind participant using JAWS on desktop

## P1 - Attempt #5: Using global menu

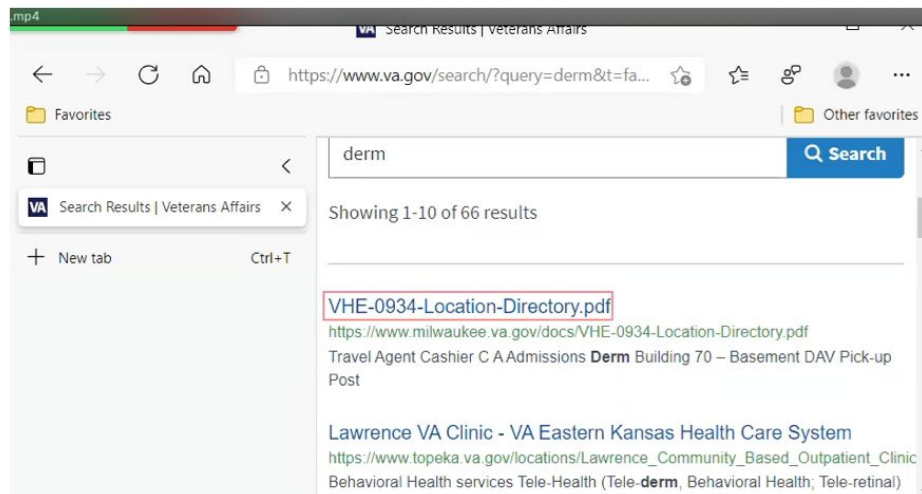
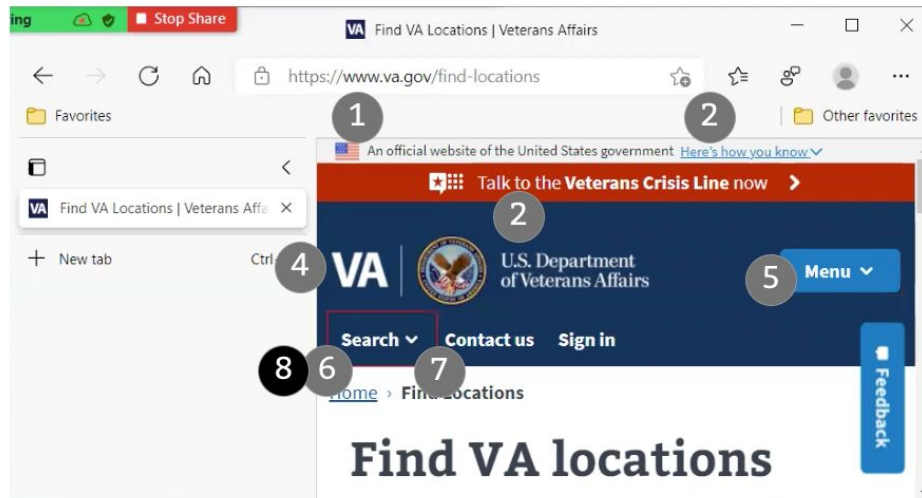


“Well, first of all, I wasn't even sure it was reading the menu. That's why I arrowed back up. It's usually helpful, if when I hit the menu and the menu dropped down, and I arrowed back up, it would at least say 'menu open' so I know when the menu started because right now I'm assuming this is under that menu but it doesn't really tell me, or say 'menu'.

“I don't even know what that is. Close button collapsed.”

# P1. Completely blind participant using JAWS on desktop

## P1 - Attempt #6: On Facility Locator



P1 is directed to Facility Locator to try Task 2 and ‘reads the page’ and notices the global search first. He asks if he can put dermatologist in it. He’s directed to “do what comes naturally”. He types in ‘derm’ but doesn’t get relevant results so he tries going back to Facility locator and reads further down the page. Describes feeling more oriented when he hears the page title in the breadcrumb but then stops:

*“I’m confused. You took me to find a location but you are actually asking me to find something specific. It’s confusing because it is about finding a VA location”*

**4/7 Veterans used global search to find a location or dermatologist.**

# 1. As a Veteran who uses assistive technology, orienting myself on websites is often unpredictable, cumbersome and time-consuming.

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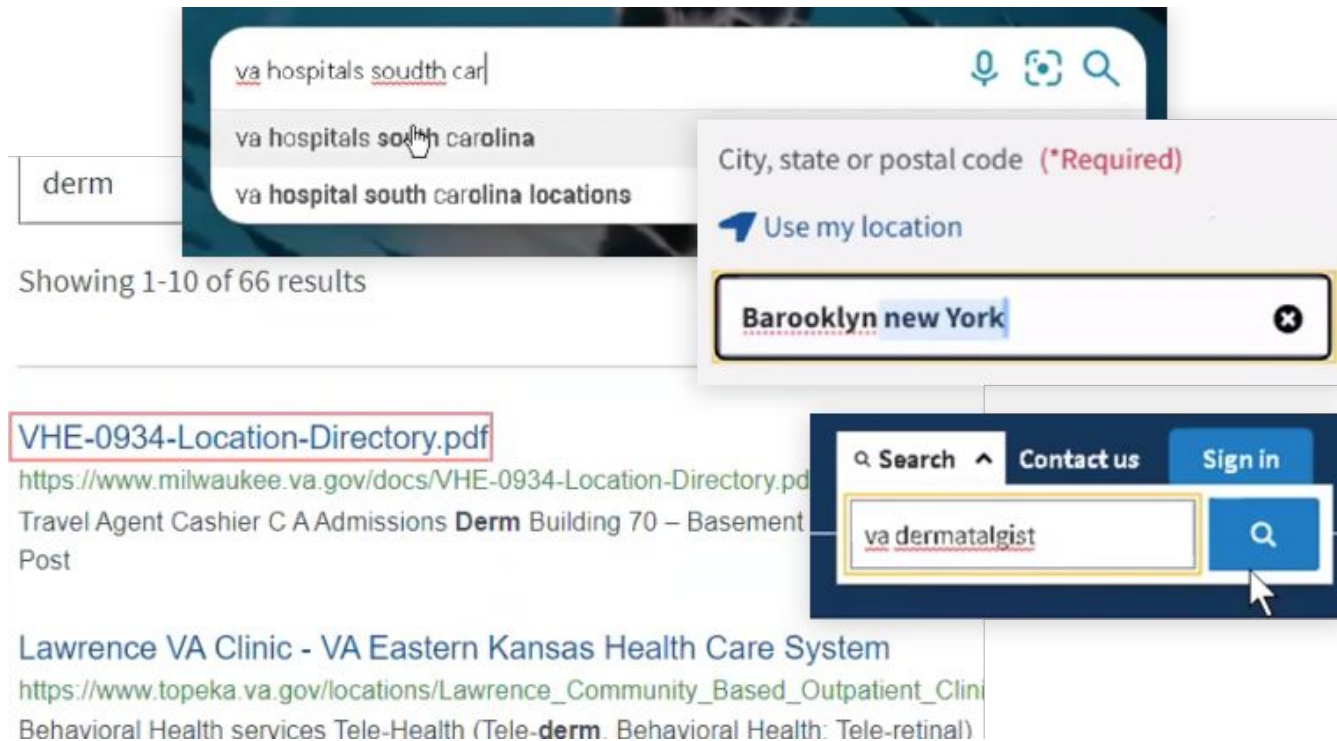
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## P4, Who has a cognitive disability and was diagnosed with Dyslexia after retiring from a successful military career, explains why dictation assistive technology helps her:



*“And you said ‘Dermatology’? I can’t spell that so I’m hoping I can use the mic... Normally, I talk into it with a mic [mic icon button on iOS apps that triggers dictation mode]. Because my spelling is atrocious, I tend to do it orally and it recognizes my voice. Most of the time if I type it, I fight with it, with the spelling.”*

# Recommendations

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# Recommendations - Broad

- Establish a page hierarchy for pages and ensure that top navigation methods follow it.
  - Group links and content with logically ordered heading levels to create an understandable hierarchy of the page.
  - Tell me what a page is about with a clear heading 1 level when navigating between pages.
  - Create regions on every page so that I can navigate quickly between areas.
  - Make sure 'skip to content' takes me to the main content on the page.
- Give me an edit box that is easy to find because I like an easy way to search.
- Provide the purpose and destination in link text so I know what to expect when I click on a link.
- Name buttons and links with the keywords that I'm likely to search for like 'menu', 'locations'.
- Name states of components descriptively like 'menu open' so I don't wonder what just happened
- Don't make me know how to spell things

# Recommendations - Facilities Team

## Short term

1. Assess and refine page hierarchies for Facility Locator, its detail pages as well as new facility product pages.
2. Move the COVID content and links into an alert region that can be announced as such. This will allow a screen reader to read the page more efficiently.
3. Assess the location input to ensure the label and edit box combination make sense on a screen reader. For example, is the 'Use my location' input interrupting the expected flow for users?
4. Service type combo box / Community Providers (in VA's network): Update the hint text to accurately describe the action a user must need to take.
5. Restore results text when no results are found after a search.
6. Assess why "Get directions" is not announcing properly on screen readers and propose solution.
7. Update 'phone' links' to ensure SRs users know that the number is a phone number.
8. Assess and incorporate keywords. Veterans don't think to look for a facility locator and are likely to use global search when looking for a facility. Work with other teams.

# Recommendations - Facilities Team

## Medium term

Add 'Google as the front door for Facility Locator and facility product pages' as a use case to solve for and create an action plan.

- Assess keyword searches for top facility types on VA.gov and incorporate those terms into the product.
  - E.g. Multiple users mentioned searching for burial and cemetery information and urgent care. Top terms could be surfaced in the page description.
- Start experimenting with structured content for location addresses and hours to see how changes could positively affect search engine search results.
  - Start with one small change to track and learn from
    - consider incorporating experiment into Vet Center pages where we have more research, control and editor involvement
- Investigate how structured health data reconciles with current health taxonomy
  - Start with one small change to track and learn from (e.g. ER, 24/7 availability is surfaced)

# Recommendations - Facilities Team

## Long term (Hypotheses to test)

- Reassess what is the most important information to deliver on Facility locator. Based on the last year of research and with product guidance, might we try a hack-a-thon to explore alternative designs to test with Veterans?
- Redesign search. Veterans want an easier way to search. In this study, participants didn't want to mess with all the "requirements" and their expectations were heavily influenced by their search engine searches.
- Services; how might we display just enough service information to give Veterans a quick understanding of the type of facility to answer, "is this just a little clinic?" Consider creating meaningful tags, or categories to assign to facilities.
- Improve discoverability of facility information available to them. Veterans are unaware of the different facility types that they can find using Facility Locator. Consider a more discoverable way of browsing.

# Appendix

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# Appendix

This presentation is a condensed version of the [full Research Findings report](#) on GitHub.

Additional, [homepage specific findings](#) can also be found in GitHub.

- [Research Plan](#)
- [Conversation Guide](#)

Josh Kim and Angela Fowler provided guidance during all aspects of planning this study (see [Inclusive Research Guidelines v2.0](#) for written documentation) as well as technical support and assistive technology expertise during every session.