

High-level accessibility review – LAA (VisualDx Platform)

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VisualDx Platform Summary

Top 3 problems for the VisualDx Platform

This high-level assessment covers limited portions and functionality of the VisualDx Platform. The assessment revealed issues with assistive technology compatibility, resulting in some users missing some information required to understand content, states and operate functions. It is important to keep in mind that the findings represent a high-level assessment, and do not reflect the results of a Deque Comprehensive Web Assessment.

1. **Reading Order** – Issues with the reading order of visible and hidden content are found on every page and mostly surround the ‘slide out’ modal windows. While the content is operable with a keyboard, the way the content is exposed could use improvement.
2. **Info and Relationships** – Primarily found on the ‘slide out’ modal windows but also through some sections of the site, section headings are not consistently implemented.
3. **Contrast** – Issues with contrast for button-type controls as well as the contrast of form elements are found throughout the site, mostly concentrated on the ‘slide out’ modal windows.

Accessibility findings

Project wide issues

The issues presented in this section were identified in multiple pages and are recorded here to avoid repetition. These are applicable to each screen. Due to particularities, similar issues are still reported on a page per page basis, where applicable.

Automated findings using Axe

Issues found through automated testing come from the Axe plugin, an open source accessibility testing tool that is available for Chrome, Firefox and Edge. Details here: <https://www.deque.com/products/axe/>.

1. **SC 4.1.2 A** – The ‘Already have a VisualDx Personal/Mobile Account? Sign in...’ message container contains an ARIA attribute that is not allowed on an element of this type.
2. **SC 2.1.1 A** – Most pages contain a scrollable region that is not focusable or does not contain focusable content.

Additional manual findings using NVDA screen reader

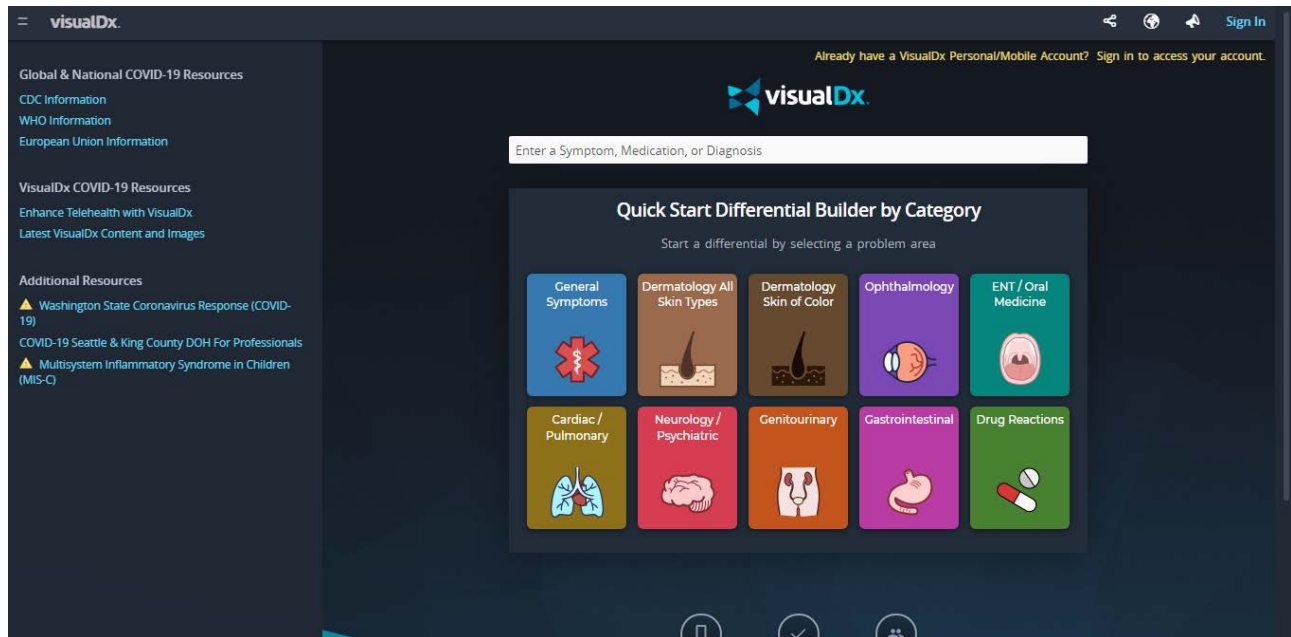
1. **SC 1.4.11 AA** – On pages that contain a scroll bar, a customized scroll bar exists with a color scheme that is low in contrast in default and on-hover states. A low vision user would likely be unable to visually identify the custom control.
2. **SC 1.4.11 AA** – When the ‘Image Contributors’ section is exposed, the focus indicator over the ‘close’ control is low in contrast. A 1.47:1 contrast ratio was observed, where a minimum 3:1 contrast ratio is required.
3. **SC 1.4.13 AA** – When a mouse user hovers over ‘Share’, ‘Language’ or ‘Feedback’, additional content pops up on the screen. The popup content cannot be hovered over by the same mouse pointer without the content disappearing.
4. **SC 1.4.13 AA** – When a mouse user hovers over ‘Share’, ‘Language’ or ‘Feedback’ the additional popup content cannot be dismissed without moving the pointer or moving focus.
5. **SC 1.4.11 AA** – When form fields are exposed through the ‘slide out’ dialogs, the visible boundaries in the forms are low in contrast. A contrast ratio of 1.22:1 was observed when visually identifying the visible boundaries, where a 3:1 contrast ratio is expected.
6. **SC 1.4.10 AA** – When a reflow viewport is applied, the “Already have a VisualDx Personal/Mobile Account? Sign in..” message overlaps other content.

7. **SC 1.4.10 AA** – When a reflow viewport is applied, some ‘X’ (close) controls in the ‘slide out’ dialogs overlap the dialog title, when the title is lengthy. Example: “Public Health & Education”
8. **SC 4.1.2 A** – the ‘menu’ and ‘visualDx’ controls in the header are missing a programmatic name
9. **SC 4.1.2 A** – the ‘menu’ control is missing a programmatic indication of its submenu & expanded/collapsed state.
10. **SC 2.4.4 A** – The two links in the banner (Feedback and Share This Page) contain ‘Select language’ within their programmatic name. NOTE: This may be due to some scripting conflict.
11. **SC 4.1.2 A** – All ‘slide out’ dialogs are missing a programmatic name for the ‘X’ (close window) control.
12. **SC 1.3.5 AA** – Several ‘slide out’ dialog windows contain fields that expect user information but are missing a programmatic indication of the common input purpose.
13. **SC 1.3.2 A** – All content from ‘slide out’ dialogs is included in the reading order even if the slide out is visually hidden.
14. **SC 1.3.2 A** – The ‘Already have a VisualDx Personal/Mobile Account? Sign in...’ banner message is included at the very end of the DOM. This placement is illogical as it is meant to act as a hint to the user for signing in, which is a function located at the top of the page.
15. **SC 1.4.1 A** – Whenever a blue link exists within a section of white or light grey text, the link can only be visually distinguished as a link by color alone, and the color contrast difference between link text and non-link text is low in contrast without another visual link indicator. This frequently occurs on the ‘slide out’ dialogs.
16. **SC 1.3.2 A** – When any ‘slide out’ dialog is open, a user is able to navigate to content outside the modal (note: the windows appear to be and function as modal but are also not semantically identified as modal)
17. **SC 1.4.3 AA** – All button-style controls with text are low in contrast on hover. A contrast ratio of 3.08:1 was observed where a contrast ratio of 4.5:1 is expected.
18. **SC 2.5.3 A** – In the ‘Mobile Access’ slide out menu, the ‘iOS’ linked image is missing its visual label in its programmatic label
19. **SC 1.3.1 A** – In the ‘My account’ slide out menu, the “My Account”, “CME”, “VisualDx Mobile App”, “Sign Out” content is not marked up as section headings with appropriate heading level.
20. **SC 1.3.1 A** – In the ‘user menu links’ slide out menu the “VisualDx”, “About VisualDx”, “Get In Touch”, “Help”, “Language” content is not marked up as section headings with appropriate heading level.
21. **SC 1.3.1 A** – In the Image Contributors slide out menu, the listing of ‘Individuals’ and ‘Organizations’ are misused. Both listings of contributors are marked up as a single list with a single item each, where there are actually many contributors found in each individual list.

1. Landing Page

Source: <https://www-visualdx-com.offcampus.lib.washington.edu/visualdx/7/>

Test case: Initial interface – menus & submenus, search box, quick start section, images, etc.



Automated findings using Axe

No page-specific issues found through automated scan.

Additional manual findings using NVDA screen reader

1. **SC 1.3.1 A** – The 'Quick Start Differential Builder by Category' heading level is out of order in a way that misrepresents the structure of the page.
2. **SC 1.4.12 AA** – The 'Ophthalmology', 'Genitourinary' and 'Gastrointestinal' card content is truncated when text spacing rules are applied.
3. **SC 1.4.10 AA** – When a reflow viewport is applied, the 'Quick Start Differential Builder by Category' section does not reflow and is clipped.
4. **SC 3.3.2 A** – The 'search' field label does not remain visible when a user interacts with the control.
5. **SC 1.1.1 A** – The informative icon in the 'Washington State Coronavirus Response (COVID-19)' and 'Multisystem Inflammatory Syndrome in Children (MIS-C)' links is not described.

2. Search Results

Source: <https://www-visualdx-com.offcampus.lib.washington.edu/visualdx/diagnosis/infantile+hemangioma?moduleId=103&diagnosisId=51673#top>

Test case: Search for infantile hemangioma from the main searchbox on initial landing page/interface. Test search results page, including 3 tabs at top (contents, info for patients, view all images)

The screenshot shows the VisualDx interface for 'Infantile hemangioma in Infant/Neonate'. The page has a dark theme. On the left is a navigation menu with sections like 'Contents', 'Information for Patients', and 'Other Resources'. The main content area features a title, a 'See also in' section, and a 'Synopsis' section. The synopsis text describes infantile hemangiomas as common benign tumors of infancy. To the right of the text is a grid of clinical images showing various presentations of hemangiomas on different parts of a child's body. At the top right, there are tabs for 'All Skin Types' and 'Skin of Color', and a 'View all Images (70)' button.

Automated findings using Axe

1. **SC 3.1.2 AA** – The main content area contains a lang attribute value that is invalid / does not exist. This is due to a typo.
2. **SC 1.4.3 AA** – The 'Print', 'Patient Handout', 'Images [70]' controls are low in contrast. A contrast ratio of 4.4:1 was observed where a minimum of 4.5:1 is expected.

Additional manual findings using NVDA screen reader

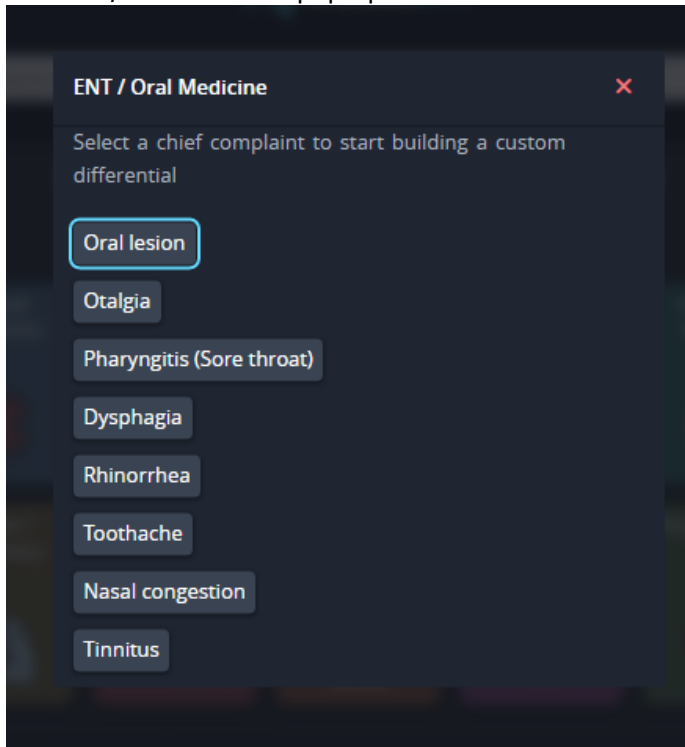
1. **SC 1.4.10 AA** – When a reflow viewport is applied, the 'Search' and 'Share' controls overlap the 'Contents', 'Information for Patients', 'View all Images (70)' tabs.
2. **SC 1.4.10 AA** – When a reflow viewport is applied, the "https://pubmed.ncbi.nlm.nih-gov.offcampus.lib.washington.edu/30855820/", "https://pubmed.ncbi.nlm.nih-gov.offcampus.lib.washington.edu/26889533/" link text is clipped
3. **SC 1.3.1 A** – In the 'Therapy' section, the "Local Therapy", "Systemic Therapy", "Ulcerated Hemangiomas", "Residual Lesions" content is not marked up as section headings with appropriate heading level.
4. **SC 1.3.1 A** – In the side navigation area, the "Contents" and "View all Images (70)" content is not marked up as section headings with appropriate heading level.
5. **SC 4.1.2 A** – 'All Skin Types' is visually identified as the 'current' item but is not programmatically identified as such.
6. **SC 1.4.1 A** – The visual indication to identify the currently selected item between 'All Skin Types' and 'Skin of Color' relies on color alone and the color difference is not at least 3:1.
7. **SC 1.3.2 A** – In the 'E-mail This Patient Information Sheet' modal, a screen reader user can read content outside of it.
8. **SC 1.4.11 AA** – In the 'E-mail This Patient Information Sheet' modal, the visible boundary for the empty input field is low in contrast.

9. **SC 4.1.2 A** – In the ‘E-mail This Patient Information Sheet’ modal, the ‘X’ (close) control is missing a programmatic name.
10. **SC 2.4.4 A** – There are several instances of ‘Clinical image of infantile hemangioma’ links that have a unique function that is not programmatically provided.
11. **SC 2.1.1 A** – A keyboard user is unable to trigger the individual image captions when in ‘Contents’ and ‘Information for Patients’ states.
12. **SC 1.1.1. A** – The ‘Infantile hemangioma : Purple color, Red color, Tumor, Unilateral distribution, Vascular plaque’ image has an alt attribute that is missing vital text that is only found in the image.

3. Quick Start Differential Builder Modal Dialog

Source: <https://www-visualdx-com.offcampus.lib.washington.edu/visualdx/7/>

Test case: From initial interface/landing page, navigate to ENT/Oral Medicine under “Quick Start...” section.
Test ENT/Oral Medicine pop-up



Automated findings using Axe

No page-specific issues found through automated scan.

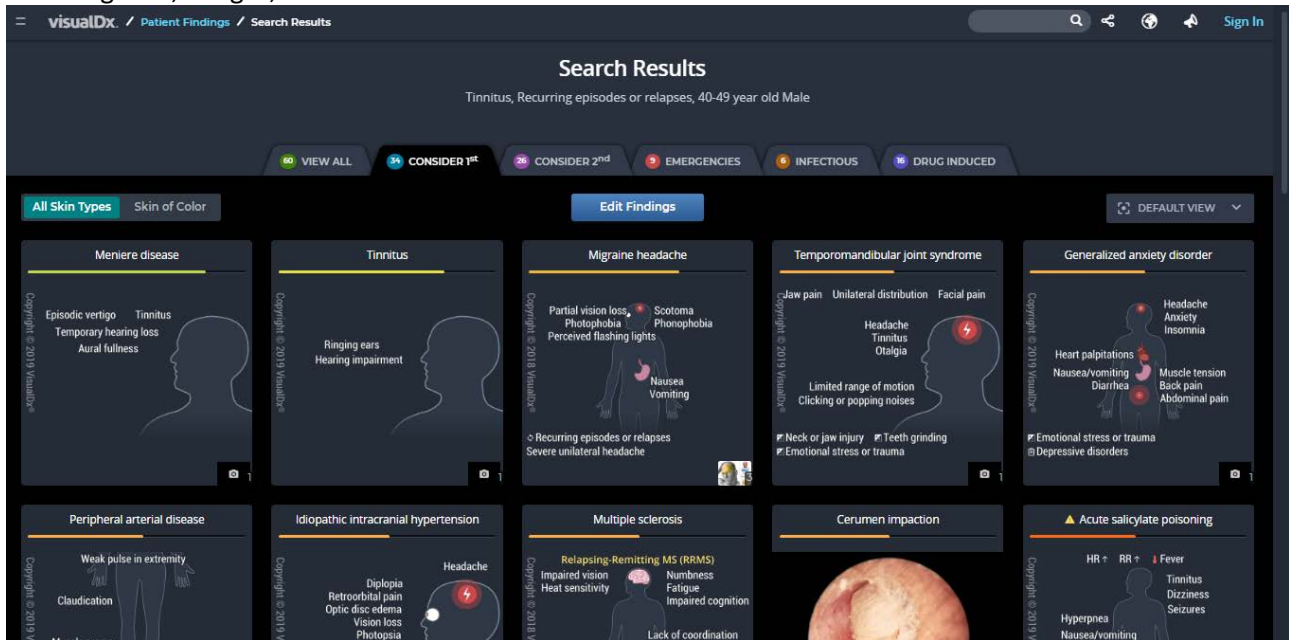
Additional manual findings using NVDA screen reader

Not completed due to insufficient time.

4. Search Results from Differential Builder

Source: <https://www-visualdx-com.offcampus.lib.washington.edu/visualdx/differential/tinnitus/recurring-episodes-or-relapses?moduleId=100&age=6&sex=M&findingId=20040,24366&reqFld=20040&sort=W#view=default&tab=common>

Test case: From initial interface/landing page, navigate to ENT/Oral Medicine under “Quick Start...” section. Select “Tinnitus”. From Onset of findings, select: Recurring episodes/relapses; 40-49 year old under patient age, male under assigned sex at birth, then select View Differential. Evaluate this search results page, including tabs, images, etc.



Automated findings using Axe

No page-specific issues found through automated scan.

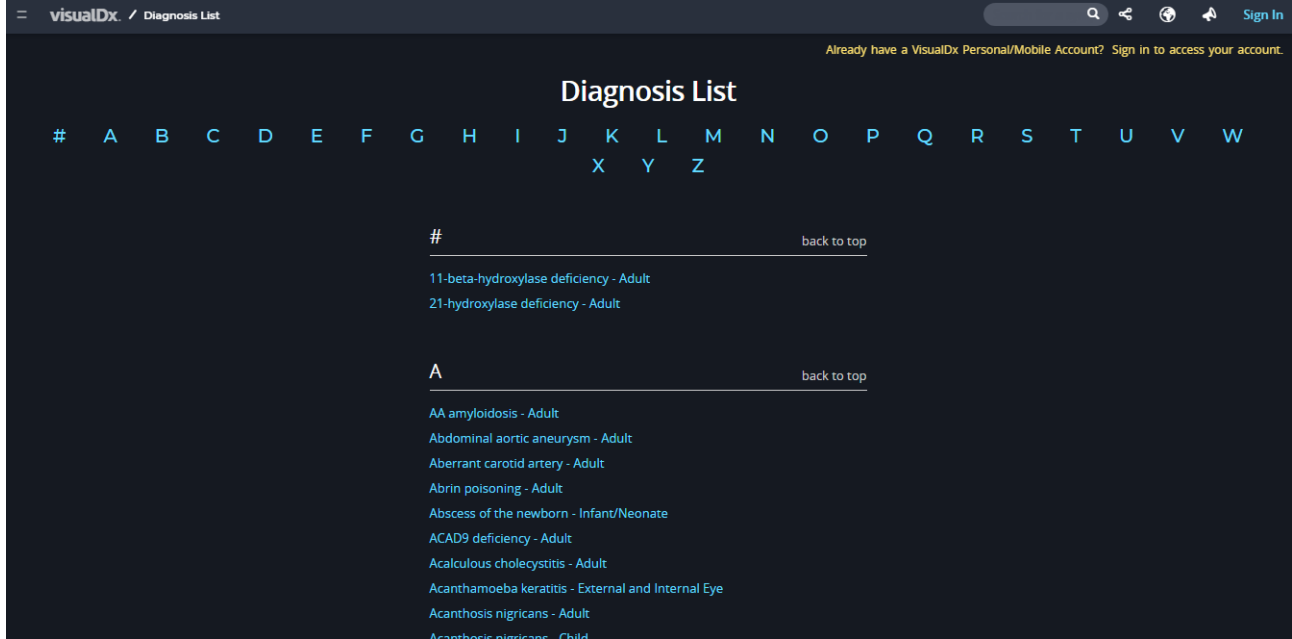
Additional manual findings using NVDA screen reader

Not completed due to insufficient time.

5. Diagnosis List

Source: <https://www-visualdx-com.offcampus.lib.washington.edu/visualdx/diagnosisList.jsp>

Test case: Diagnosis List page



Automated findings using Axe

1. **SC 3.1.1 A** – The page is missing a lang attribute along with valid attribute value.

Additional manual findings using NVDA screen reader

Not completed due to insufficient time.