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RNIB WCAG 2.1
Website Guidelines
Quick Start-up Guide

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1 Introduction

This document is a quick start guide for good practice in website accessibility and inclusive design. The guide focuses on some of the most common issues that occur on websites and gives advice on how to address these.

We have selected the following areas for this guide as ones that are often found and, if addressed, will make a big impact on the overall use of the website. The full guidelines cover many more issues but the ones we have selected here occur regularly and resolving these will go a long way to making your website much more accessible:

1. Keyboard Navigation and Visual Focus
2. Colour and Text
3. Headings
4. Text Alternatives for Images or Icons
5. Hyperlinks
6. Page Title
7. Document Language
8. Skip navigation link
9. Form, Labels and Errors
10. Audio or Video

2 WCAG 2.1 Background

Web accessibility means that websites, tools, and technologies are designed and developed so that people with disabilities can use them - including users who have visual, auditory, motor, speech or cognitive disabilities. The World Wide Web Consortium (W3C) Web Content Accessibility Guidelines (WCAG) 2.1 cover the issues that affect people with disabilities and conforming to Level AA is recommended.

The World Wide Web Consortium (W3C) Web Content Accessibility Guidelines (WCAG) 2.1 are a useful benchmark for assessing the accessibility of a website. It's a web standard that is used in many laws and regulations across the world. WCAG 2.1, was released by the W3C on 5 June 2018 (https://www.w3.org/TR/WCAG21/).

Each guideline has a level of compliance assigned to it:
- Level A - must be satisfied
- Level AA - should be satisfied (recommended level)
- Level AAA - may be satisfied

Under the Equality Act 2010 or the Disability Discrimination Act 1995 (in Northern Ireland) organisations are legally required to make reasonable adjustments for disabled people - i.e. to make sure websites and apps meet accessibility requirements. If the digital application is not accessible to anyone who needs it, this may signify a breach of the law.

WCAG 2.0 and WCAG 2.1 are both current standards. WCAG 2.1 does not denounce or replace WCAG 2.0. However, W3C advocates to use the most recent version of WCAG (https://www.w3.org/WAI/standards-guidelines/wcag/).

When organisations are endeavouring to meet WCAG 2.0 or WCAG 2.1 standards, this usually means that they are striving for A and AA compliance. Organisations with a lot of multimedia might need to meet Level AAA.

RNIB accessibility audits go through all the WCAG 2.1 A and AA success criteria for compliance and is seen as a general standard of web accessibility. When conforming to level AA, it is assumed to conform to level A as well as an audit to AA standard will include all the guidelines at level A.

Meeting WCAG 2.1 Level AA ensures the digital environment is accessible by common assistive technologies such as screen readers, switch devices or speech recognition software.

3 Keyboard Navigation & Visual Focus

3.1 WCAG Success Criterion 2.1.1: Keyboard (Level A)

All functionality on a page needs to be available using only a keyboard, keyboard emulator or speech to text software, as this is the primary form of navigating, interacting and accessing content on the page when using assistive technology. For example, if, when filling in a form, the continue button isn't in the tab order then someone who can't use a mouse won't be able to complete the form.

People affected: Blind people, partially sighted people and people with motor impairment

WCAG details:
https://www.w3.org/WAI/WCAG21/Understanding/keyboard.html

3.2 WCAG Success Criterion 2.1.2: No Keyboard Trap (Level A)

Keyboard navigation must not become trapped or stuck on page elements. The user must be able to move away using the keyboard or instruction provided on how to exit the element.

People affected: Blind people, partially sighted people and people with motor impairment

WCAG details: https://www.w3.org/WAI/WCAG21/Understanding/no-keyboard-trap.html

3.3 WCAG Success Criterion 2.4.3 Focus Order (Level A)

Keyboard navigation of all elements must be in an intuitive and logical order.

People affected: Blind people, partially sighted people and people with motor impairment

WCAG details: https://www.w3.org/WAI/WCAG21/Understanding/focus-order

3.4 WCAG Success Criterion 2.4.7 Focus Visible (Level AA)

All elements that receive keyboard focus need a strong visual indicator to show when they have current focus. It's also known as the 'focus ring'. The focus ring acts like a mouse pointer and it's how a keyboard user knows what they are interacting with. Without this, the user won't know where they are on the page.

People affected: Partially sighted people and people with motor impairment

WCAG details: https://www.w3.org/WAI/WCAG21/Understanding/focus-visible

3.5 WCAG Success Criterion 3.2.1 On Focus (Level AA)

When an element, such as a button or link, receives focus, it must not trigger a change of context. It must require a keyboard stroke or a click if using the mouse to trigger the event. Otherwise elements will be activated when the user reaches them and the user is not in control of what they are trying to do.

People affected: Blind people, partially sighted people and people with motor impairment

WCAG Details: https://www.w3.org/WAI/WCAG21/Understanding/on-focus

4 Colour & Text

4.1 WCAG Success Criterion 1.4.1 Use of Colour (Level A)

Colour must not be used as a sole means to visually distinguish elements, content or indicate actions. Some people find it difficult to see colour and may not be able to distinguish, for example, between a green button and a red button if the colour is the only difference.

People affected: People with Visual impairments such as colour blindness and low vision; people using devices with colour limitations

WCAG Details: https://www.w3.org/WAI/WCAG21/Understanding/use-of-color

4.2 WCAG Success Criterion 1.4.3 Contrast (Minimum) (Level AA)

Sufficient colour contrast combinations must be provided for foreground and background. For normal sized text, the ratio should be at least 4.5:1, and for large text a 3:1 ratio is needed.

People affected: People with visual impairments such as colour deficiencies and low vision

WCAG Details: https://www.w3.org/WAI/WCAG21/Understanding/contrast-minimum

4.3 WCAG Success Criterion 1.4.11 Non-text Contrast (Level A)

Sufficient colour contrast needs to be present for all components and graphical objects such as icons, buttons and form controls. This must be at least a 3:1 ratio between adjacent colours – for example a button against its background.

People affected: People with visual impairments such as colour deficiencies and low vision

WCAG Details: https://www.w3.org/WAI/WCAG21/Understanding/non-text-contrast

4.4 WCAG Success Criterion 1.4.4 Resize text (Level AA)

When the text on a page is resized up to 200%, using the browser's feature, the page must not lose any functionality, such as overlap or cause disappearance of some text. The content and font size need to be scalable by using relative font sizes. A fixed height must not be used.

People affected: People with low vision

WCAG Details: https://www.w3.org/WAI/WCAG21/Understanding/resize-text

5 Headings

5.1 WCAG Success Criterion 2.4.6 Headings and Labels (Level AA)

Headings on pages as well as labels on forms and interactive controls, need to be descriptive to describe the purpose and provide structure on the sections on the page.

Nest headings on a page in a logical order using heading levels (<h1> to <h6>). Screen reader users use the heading structure to navigate and understand the page content. It also allows all users to understand the structure of the page clearly.

For best practice and to aid screen reader navigation a <h1> heading element is required and only one <h1> per page should be used.

Avoid skipping heading levels as screen reader users will not know this is a deliberate mistake and will spend time looking for information relating to the heading level that has been skipped.

People affected: Blind people, partially sighted people using a screen reader

WCAG Details: https://www.w3.org/WAI/WCAG21/Understanding/headings-and-labels

5.2 WCAG Success Criterion 1.3.1 Info and Relationships (Level AA)

Elements that visually convey heading meaning need to match semantic heading markup.

People affected: Blind or partially sighted people using screen readers

WCAG Details: https://www.w3.org/WAI/WCAG21/Understanding/info-and-relationships.html

6 Text Alternatives for Images or Icons

6.1 WCAG Success Criterion 1.1.1 Non-text Content (Level A)

Non-text elements, such as images, require a text equivalent describing the purpose and importance of the element. This can be achieved using the alt attribute for images. The alternative text is announced by the screen reader.

Decorative images that do not have a function and are purely for cosmetic effects must be give an empty alt attribute (alt="") to enable screen readers to ignore them.

Complex images such as charts, graphs and illustration need a text equivalent such as a link to a text table of the same information.

Avoid using images of text, instead use text and style sheets.

An animated content requires the same information contained with the animated element and must have the same meaning. If possible, avoid the use of animated elements.

When using CAPTCHA, provide a non-visual alternative to accommodate people with various disabilities such as for those using a screen reader or have cognitive impairments.

People affected: Visually impaired people, people with low vision, people who are deaf or hard of hearing (e.g. when using imagery/animation with audio).

WCAG Details: https://www.w3.org/WAI/WCAG21/Understanding/non-text-content

7 Hyperlinks

7.1 WCAG Success Criterion 2.4.4 Link Purpose (in Context) (Level A)

Link text needs to be:

- unique within a page
- describe its purpose
- be identifiable out of context
- give an indication about its destination through its description.
- link text with the same name on a page, such as 'Click here', that goes to a different location needs to be easily identifiable. This aids screen reader users when using their shortcut commands (i.e. link text with the same name are meaningless out of context). Also, a user with a speech recognition software can select a link with a voice command, e.g. "click" followed by the link text. Hence it is important to use unique link text that are concise for easy distinguishable.
- label all links and do not leave them empty with no content
- receive keyboard focus with a focus outline present

For best practice for links:

- that leads to a file download, the text needs to reference this, such as 'Brochure of hotel (PDF, 6.43 MB)
- that opens in a new window of the browser, the text needs to reference this for screen reader users and preferably through a visual indication
- underline links, as this is now a convention recognised by most users
- give the link a different colour from surrounding text for ease of identification

People affected: Visually impaired people, people with low vision or motor impairment and those using speech software

WCAG Details: https://www.w3.org/WAI/WCAG21/Understanding/link-purpose-in-context

8 Page Title

8.1 WCAG Success Criterion 2.4.2 Page Titled (Level A)

All pages must have a title that uniquely and briefly describes the content of the page.

People affected: People who are visually impaired or who have cognitive impairments

WCAG Details: https://www.w3.org/WAI/WCAG21/Understanding/page-titled

9 Document Language

9.1 WCAG Success Criterion 3.1.1 Language of Page (Level A)

All pages must have the primary language of the HTML document assigned (lang="en" for English) so that assistive technology tools such as screen readers can programmatically determine the language.

People affected: People with visual and cognitive impairments who use software to convert text-to-speech

WCAG Details: https://www.w3.org/WAI/WCAG21/Understanding/language-of-page

10 Skip Navigation Link

10.1 WCAG Success Criterion 2.4.1 Bypass Blocks (Level A)

Provide a skip navigation before the main content on the page. This allows users to bypass the navigation menu, if required, to reach the main content. The skip link aids in navigation, bypassing repeated content on multiple pages and interaction with the website becomes more efficient.

People affected: People People who are visually impaired or who have low vision or motor impairments

WCAG Details: https://www.w3.org/WAI/WCAG21/Understanding/bypass-blocks

11 Form, Labels and Errors

11.1 WCAG Success Criterion 3.3.1 Error Identification (Level A)

Required form elements must be clearly indicated to help correct mistakes. After form validation, error messages need to be placed next to the relevant form control that generated the error. It should be informative and provide help to rectify the error.

Colour alone must not be used to indicate error messages.

People affected: People who are visually impaired or who have low vision or cognitive impairments

WCAG Details: https://www.w3.org/WAI/WCAG21/Understanding/error-identification

11.2 WCAG Success Criterion 3.3.2 Labels or Instructions (Level A)

All form controls need associated labels markup with clear and unambiguous labels and instructions to help users understand various inputs and avoid mistakes. All interactive elements need an accessible name/label e.g. a button needs a label and not left empty.

The labels and instructions need to be position close to the pertaining element. Where applicable, add help text, as well, close to the element.

Common or related elements need to be grouped by fieldsets and legends. Fieldset and legend helps screen reader users by providing context to a group of form fields.

People affected: People who are visually impaired or who have low vision or cognitive impairments

WCAG Details:
https://www.w3.org/WAI/WCAG21/Understanding/labels-or-instructions

11.3 WCAG Success Criterion 3.3.3 Error Suggestion (Level AA)

When an error is detected an informative text should be provided that helps the user to correct the mistake. If possible, give an example of the format and/or specific suggestions for fixing a particular error.

People affected: People who are visually impaired or who have low vision, motor or cognitive impairments

WCAG Details: https://www.w3.org/WAI/WCAG21/Understanding/error-suggestion

11.4 WCAG Success Criterion 1.3.5: Identify Input Purpose (Level AA)

Input fields that collect user data require the autocomplete attribute (e.g. lists relevancy or from search history). Autocomplete helps users to complete forms more easily as common fields are prefilled with the user's data.

Autocomplete is only mandatory for fields that collect user data e.g. first name, last name, address, email, etc. It's not applicable for fields relating to security and privacy data e.g. a credit card input.

People affected: People who are visually impaired or who have low vision, motor or cognitive impairments

WCAG Details: https://www.w3.org/WAI/WCAG21/Understanding/error-suggestion

11.5 WCAG Success Criterion 1.3.2 Meaningful Sequence (Level A)

The reading and navigation order of form elements needs to be in a logical and intuitive manner not to distort the meaning when using a screen reader.

This also applies to the reading and navigation order on a page (under section 'Keyboard Navigation' above). The order needs to be logical and intuitive.

People affected: Visually impaired people

WCAG Details: https://www.w3.org/WAI/WCAG21/Understanding/meaningful-sequence

11.6 WCAG Success Criterion 4.1.2 Name, Role, Value (Level A)

HTML and non-HTML markup of all elements needs to be accessible and work with all assistive technology. This relates to all user interface components including links, form control and components generated by script.

The name and role need to be programmatically determined. Also, the role, state and property need to be exposed to assistive technologies, e.g. for an accordion.

Standard HTML controls, when used according to specification, already meets this success criterion. Custom user interface components do not automatically meet this success criterion. Therefore, ARIA (Accessible Rich Internet Applications) is required to augment accessibility.

People affected: Visually impaired people and people with low vision or motor impairment (using speech recognition software)

WCAG Details: https://www.w3.org/WAI/WCAG21/Understanding/name-role-value

11.7 WCAG Success Criterion 2.5.3 Label in Name (Level A)

The accessible name for elements such as links and buttons, must be the same name that is visible on the label or link text. So, users with a speech recognition software can select the element with a voice command. This is also helpful to low vision users who use a screen reader as the accessible name will match the visible name.

People affected: Visually impaired people, people with low vision or motor impairment using speech software

WCAG Details: https://www.w3.org/WAI/WCAG21/Understanding/label-in-name.html

12 Audio or Video

In conjunction with the below Success Criteria for Audio or Video accessibility, follow the steps above for keyboard navigation and labelling. The controls on the media player needs to be labelled correctly and be accessible by keyboard.

12.1 WCAG Success Criterion 1.2.1 Audio-only and Video-only (Prerecorded) (Level A)

For audio or video content a descriptive text transcript needs to be provided that describes all visual (for video) and auditory content. Audio content can be a MP3 files or podcast. The transcript can then be presented in many different ways by assistive technology such as converting it to braille.

Disability Type: People who are visually impaired, deaf or hard of hearing

WCAG Details: https://www.w3.org/WAI/WCAG21/Understanding/audio-only-and-video-only-prerecorded

12.2 WCAG Success Criterion 1.2.2: Captions (Prerecorded) (Level A)

Provide captions for non-live video. Captions are a text equivalent for the audio content and needs to be synchronised to appear on screen with the relevant audio information, such as sound effects dialogue and music.

People affected: People who are Deaf or hard of hearing

WCAG Details: https://www.w3.org/WAI/WCAG21/Understanding/captions-prerecorded

12.3 WCAG Success Criterion 1.2.5: Audio Description (Prerecorded) (Level AA)

Provide an audio description of video content. It's a descriptive narration of the visual content to enhance the audio. It needs to be synchronised with the content; during existing pauses in the main soundtrack. This description must relate to the actions, characters, scene changes and on-screen text that are important to understand the video presentation.

Disability Type: People who are visually impaired or have low vision

WCAG Details: https://www.w3.org/WAI/WCAG21/Understanding/audio-description-prerecorded

13 Further Reading and References

Web Content Accessibility Guidelines (WCAG) Overview
https://www.w3.org/WAI/standards-guidelines/wcag/

How to Meet WCAG (Quick Reference)
https://www.w3.org/WAI/WCAG21/quickref/

Web Content Accessibility Guidelines (WCAG) 2.1
https://www.w3.org/TR/WCAG/

The WebAIM Million: An annual accessibility analysis of the top 1,000,000 home pages - 98.1% of home pages had detectable WCAG 2 failures!
https://webaim.org/projects/million/

Making the Web Accessible
https://www.w3.org/WAI/

DWP Accessibility Manual
https://accessibility-manual.dwp.gov.uk/

Web Accessibility Tutorials Guidance on How to Create Websites that Meet WCAG
https://www.w3.org/WAI/tutorials/

GOV.UK Design System: Components
https://design-system.service.gov.uk/components/

WAI-ARIA Authoring Practices 1.1
https://www.w3.org/TR/wai-aria-practices-1.1/

ARIA in HTML - W3C Working Draft 14 December 2020
https://www.w3.org/TR/html-aria/

14 Copyright, Resources & Contact Details

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