Making Your Charts and Graphs 508 Compliant

Purpose   This tool provides guidelines and tips on how to effectively make your charts and graphs 508 compliant.

Format   This tool provides guidance on making various charts and graphs 508 compliant by providing examples of preferred practices and practical tips.

Audience   This tool is designed primarily for researchers from the Model Systems that are funded by the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR). The tool can be adapted by other NIDILRR-funded grantees and the general public.

Section 508 - Overview

▶ Section 508 (passed in 1998) is an amendment to the Rehabilitation Act of 1973.

▶ Under Section 508, persons with disabilities, such as the visually-disabled (or "print- disabled") could use assistive technology (such as Screen Readers) to access all federal documents and applications.

▶ Effective 2001, all new and redesigned Federal Government Web sites, Web applications, and all attached documents must be Section 508-compliant.

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Section 508 Compliance

▶ Making charts and graphics (created in Excel, PowerPoint, and various data visualization software packages) 508-compliant involves formatting the material so that a person who is print-disabled can use a Screen Reader [such as Adobe Reader or JAWS] to read the document out loud and navigate the document in a logical order.

▶ HHS and many other federal, state, and private entities have extensive and excellent web-resources on 508-compliance for charts and graphics.

▶ This section will highlight only a very few of the key concepts for chart and graphic 508-compliance.

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508 - Color Palette

▶ Section 508 requires that all graphics in which color is used to convey meaning must be expressed in a color palette that persons with any of the various forms of color-blindness can distinguish and interpret.

▶ This means that many of the "standard" performance chart practices (such as red-yellow-green stoplight coding) must be re-expressed in color-blind-acceptable colors (such as shades of orange-gray-blue etc).

▶ Most data visualization software packages offer color palettes that are 508-compliant in this regard.

▶ Many free utilities and add-ons are available on the web that simulate color blindness and can assess and display your images as perceived by a color-blind person.

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508 – Alt Text

▶ Section 508 requires that all charts and graphics be tagged with Alternative Text – often referred to as Alt Text.

▶ Alternative Text is textual material [incorporated "behind the scenes" with each graphic] that a Screen Reader can capture and read aloud to the user.

▶ Alt Text provides a text description of the chart or graphic – including a short Title and a more lengthy Description.

▶ Typically, the person who created the chart or graphic will also create the Alt Text material for each chart or graphic - once the source material has been approved.

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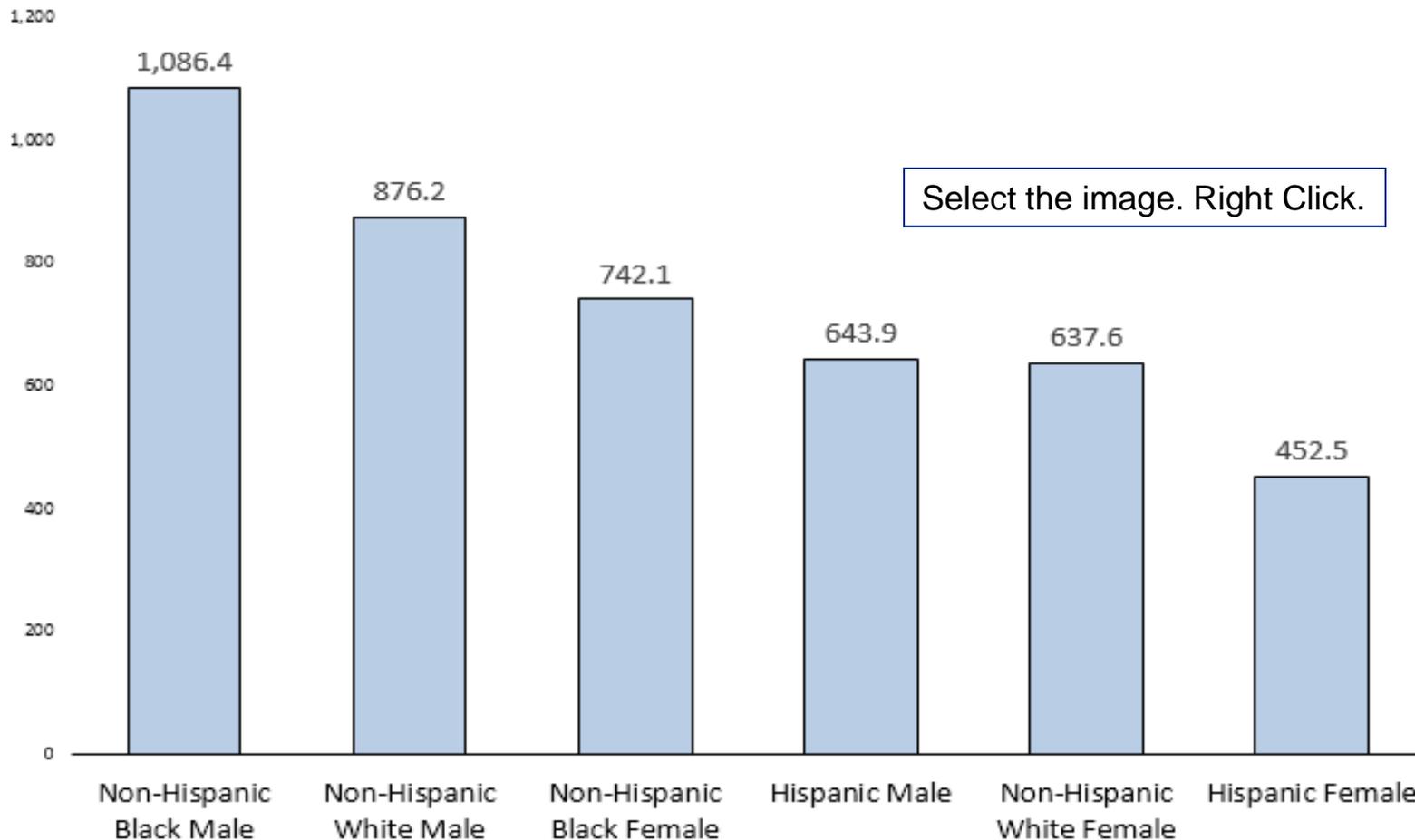SCI · TBI · BURN | Knowledge Translation
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508 – Alt Text

▶ Many resources exist to provide guidance about the amount of content and explanation to include as Alt Text for each chart or graphic.

▶ Too little Alt Text material fails to convey the overall meaning and key facts displayed by the chart or graphic.

▶ Too much Alt Text material unnecessarily slows the user's Screen Reader with material that might be of only secondary interest to the user.

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508 – Alt Text

▶ The functionality to add Alt Text is built into all standard Office software (Word, Excel, PowerPoint etc) as well as in most data visualization software products.

▶ The precise sequence (and wording) of the menu selections to add Alt Text varies slightly across the Office products and among the versions of the products (2013 vs 2010, for example), but all follow the general pattern illustrated in the following slides.
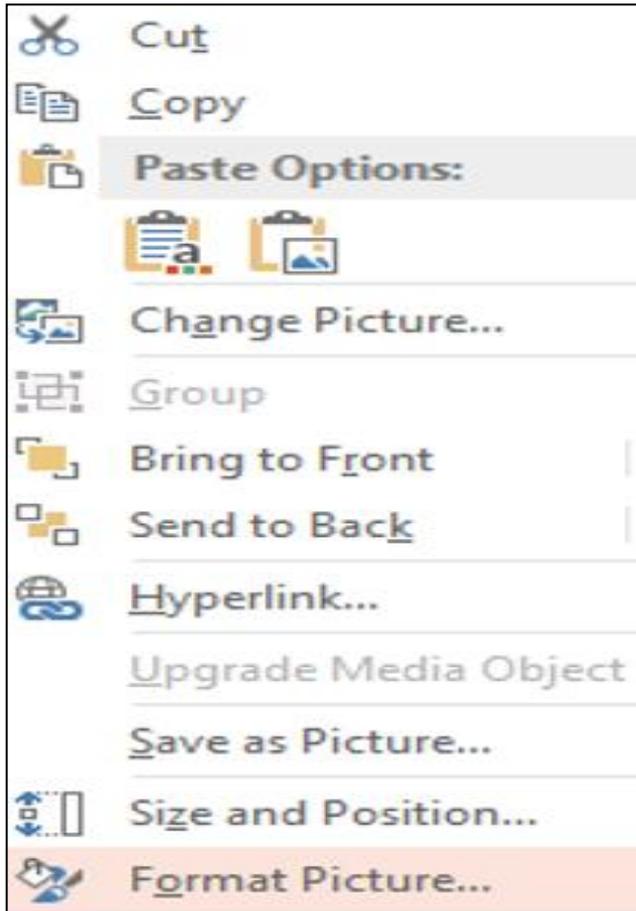
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Simple Column Chart – Categorical Comparisons

Age-Adjusted Death Rates Per 100,000 Standard Population, United States, 2012

Select the image. Right Click.
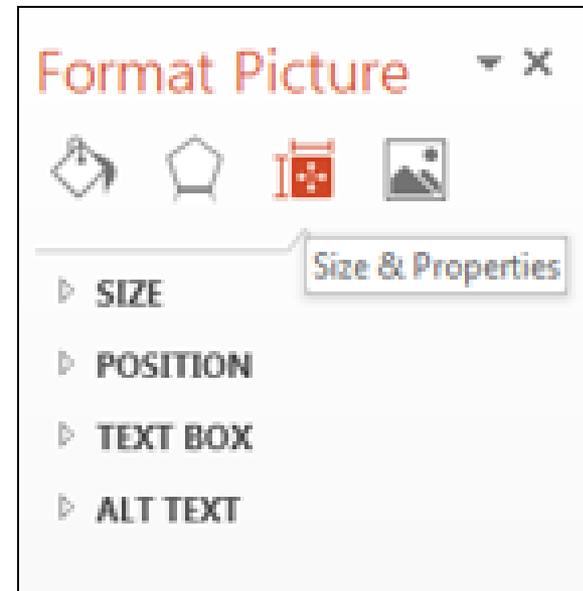
- Non-Hispanic Black Male: 1,086.4
- Non-Hispanic White Male: 876.2
- Non-Hispanic Black Female: 742.1
- Hispanic Male: 643.9
- Non-Hispanic White Female: 637.6
- Hispanic Female: 452.5

Source: CDC, National Vital Statistics System, Mortality

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508 – Alt Text

Select Format Picture

For PP 2013:
Select the Size and Properties icon which is the third icon. Then Select Alt Text

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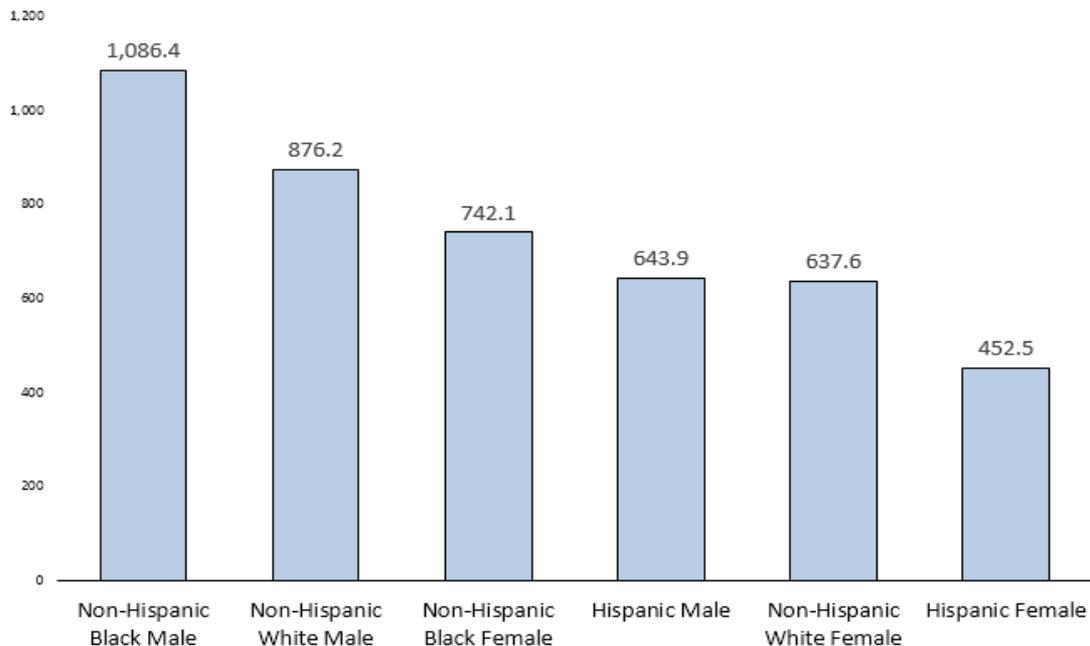
508 – Alt Text

ALT TEXT

Title ⓘ

Chart of US Death Rates in 2012 by Race and Gender

Description

Age-adjusted death rates per 100,000 vary substantially by race ethnicity and gender. Non-Hispanic Black Males have the highest death rates, followed by Non-Hispanic White Males, Non-Hispanic Black Females, Hispanic Males, Non-Hispanic White Females, and Hispanic Females. For comparison, the death rate for Non-Hispanic Black Males is 1086 per 100,000 and the death rate for Hispanic Females is 453 per 100,000, with the other race-ethnicity and gender groups in between.

Sample Alt Text that would accompany this chart

Age-Adjusted Death Rates Per 100,000 Standard Population, United States, 2012

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508 – Flatten Images

▶ For complex graphics and slides [such as the example on the following slide], you may wish to "flatten out" the various components of the slide.

▶ Typically, this involves selecting all the component elements of the slide, right click on the grouped cluster of components, then File Save As an Image (PNG or JPG).

▶ Then insert the PNG or JPG file as a picture into a new PowerPoint slide.
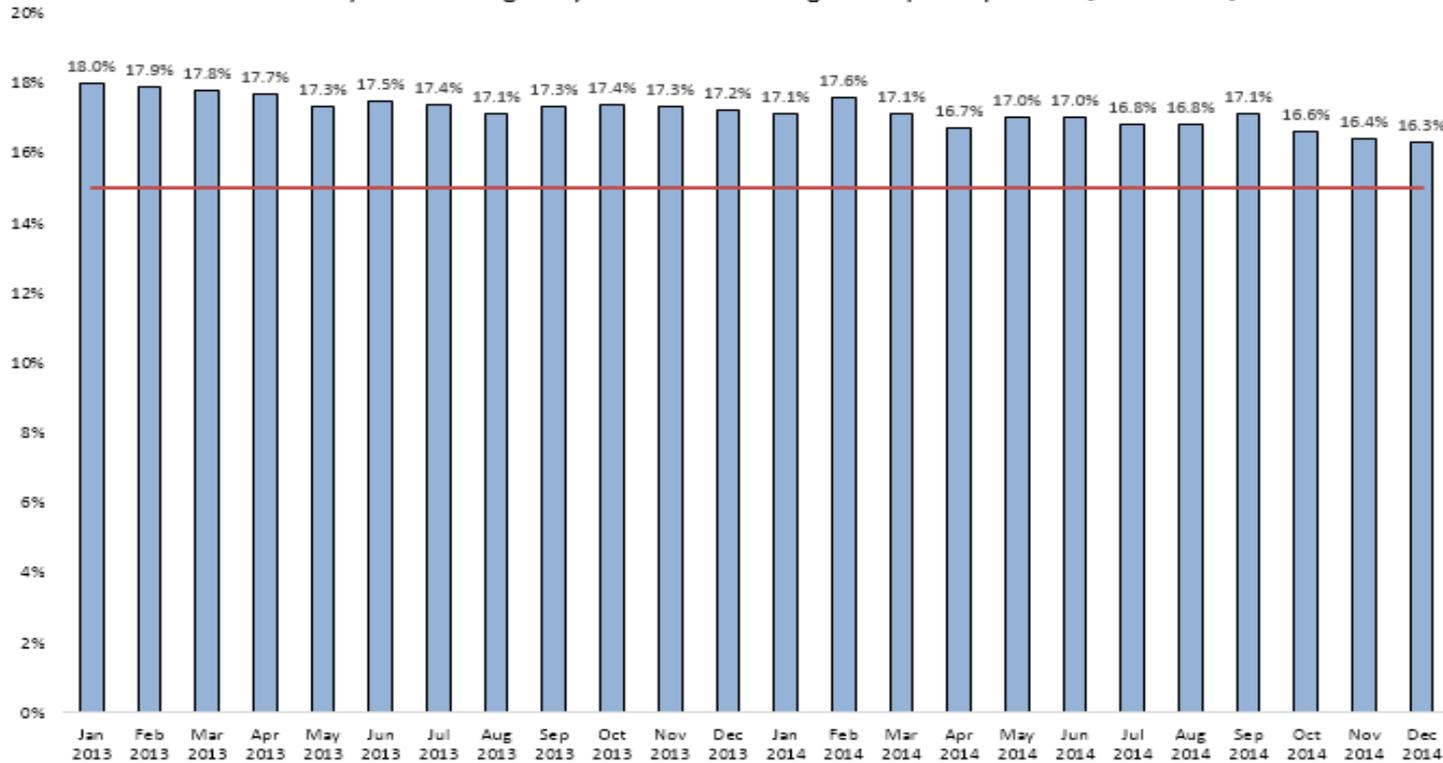
▶ Then add Alt Text to the consolidated image.

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Vertical Axis Scaling
Principles, Tips, Preferred Practices

Add Context. Goal was to reduce readmissions to below 15% by Dec 2014.

Potentially Preventable Inpatient Hospital Readmissions Within 30 Days of Discharge

Percent of Persons With Selected Target Discharge Diagnoses Readmitted
Within 30 Days of Discharge - By Month of Discharge - Hospital System X [Mock Data]

Start vertical axis at zero

Best representation of actual improvement. Reduced readmissions from 18.0% to 16.3%. But have not yet achieved goal of Under 15%.

Context [in this case, goal red line at 15%] is always useful

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508 – Reading Order

▶ Alternatively, for complex graphics and slides [such as the preceding example], you may wish to add Alt Text to the main chart, then use the 508 Accessibility Checker (described, shortly) to assign a Reading Order to the remaining text-based material.

▶ For example, the PowerPoint 508 Accessibility Checker to inform the user's JAWS Reader etc to read the main title first, followed by the Alt Text in the main chart, then read the green box, then the center blue text under the main chart, then the red left lower item, then the red right lower material, and finally the upper left corner material.

508 – More Complex Images

▶ Detailed Multi-Point Charts and Maps may require additional 508 efforts – such as including an embedded data table by which a JAWS Reader could read aloud all the data points, or an appended table listing all plotted map values etc.

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508 – Accessibility Checker

All Office Products include a 508 Accessibility Checker. For PP 2013: Select File Info . Then click on the Check For Issues button by Inspect Presentation. Then select Check Accessibility

508 – Accessibility Checker

This will activate an Accessibility Checker that will review every slide and image in the document and report back on: Errors, Warnings, and Tips. Plus suggestions on how to remediate each.

Accessibility Checker

Inspection Results

ERRORS

▲ Missing Alt Text
Content Placeholder 5 (Slide 3)
Content Placeholder 5 (Slide 4)
Content Placeholder 2 (Slide 6)
Rectangle 2 (Slide 15)
Rectangle 2 (Slide 16)

WARNINGS

▲ Blank Table Rows or Columns
Content Placeholder 1 - 1 Row or Column (Slide 51)

TIPS

▲ Duplicate Slide Title
Project Team (Slide 3)

Check Reading Order
Slide 1

Why Fix:

People who cannot view the slide will hear slide text, shapes, and content read back in a specific order. You should verify that the reading order and labels will make sense in the order they will be read back.

How To Fix:

To check the order content will be read back:
1) Switch to the Home tab, click Arrange, and choose Selection Pane.
2) The Selection Pane lists the objects on the slide. Objects will be read back beginning with the bottom list item and ending with the top list item. Correct any out of order items using the Re-order arrows on the bottom of the pane.

Remediate all Errors and Warnings. Tips may or may not be actual issues that can or should be addressed.

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