Design Elements and Scorecard

Slide 1
Welcome to the Readability Design Scorecard section of the Improving Readability by Design toolkit. The following slides will explain how to use the scorecard to evaluate the design of printed patient education documents.

Slide 2
This toolkit identifies seven design elements that affect the readability of printed documents. This could be in a positive or negative way. The seven design elements are: font, paragraphs, line length, how information is grouped within the document, and the use of graphics, color and white space. A separate flash presentation explains each design element.

Slide 3
The scorecard itself is divided into seven sections, one for each of the seven design elements. To explain how the scorecard works, let’s take a look at the first design element: fonts.

Slide 4
Let’s say we are evaluating an existing document, one that we have downloaded from the Internet or one that we already have in our patient education library. For each design element there are both positive and negative points that can be awarded. Positive design elements score 5 points. In this example, the document we are evaluating has fonts ranging from 12 point for the main body text, and 14 point for headings and subheadings. The document uses a serif font, such as Times New Roman, for the main body text and a sans serif font, such as Arial, for the headings and subheadings. Our sample document, then, scores 15 positive points. However, the document contains some minor design flaws. Definitions of medical terms might be in an italicized font, and a warning about side effects is typed in ALL CAPITAL LETTERS. Based on research in legibility and typography, text that is italicized or in all capital letters is more difficult to read. The section on fonts explains why this is so. Because our sample document contains some italicized text and some sentences in all capital letters, one negative point is given for each. The positive points are totaled, the negative points are totaled and then subtracted from the positive points to determine the overall score for this design element. Our sample document scored 13 points. That score is placed in the box on the right side.

Slide 5
There will be an overall score for each of the design elements. At the end of the evaluation, these scores are totaled to determine the total score for the document. Using the score matrix at the end of the scorecard, you can determine whether or not the document you just evaluated is designed to be easy to read. There is a total of 65 positive points that a document can be awarded. Documents that score between 65 and 50 points are designed well; however those with the highest scores are designed to be easier to read. Documents that score between 49 and 40 points have several minor and perhaps one of more major design flaws that should be corrected before using the document with patients. Documents that score below 40 points need a total redesign. If that is not possible, then it is recommended that you not use the document with patients. Let me take an extra minute or two to explain the methodology behind the weighted scores. I originally started with having the negative and positive elements scored at one point each. However, in testing, most documents scored more negative points than positive. So I tried it with a weighted scale. The positive design elements are
very important. After all, a document that set in a font that is too small is very difficult to read, and
often times won't be read at all. However, having some italicized text in a document should not mean
that the document should not be used. I found that by awarding five points for positive design
elements and deducting one point for negative design elements results in a more balanced and
representative score. Note that if our sample document was missing one of more of the positive
design elements, it greatly affects the overall score. This tool is still being tested. As you use it, I
would appreciate getting your feedback, letting me know how the tool worked or didn’t work for you.
My contact information is under the “about me” section on my web site:
www.healthcommunications.org

Definitions

Slide 1
The following slides will lay the foundation for this presentation. We will define health literacy and
readability and the concept of universal design. We will also look at past and present research as well
as the resources that were used in the development of this toolkit.

Slide 2
Definition of health literacy from the Institute of Medicine (IOM) Committee on Health Literacy (2004).
William Smith served on the committee and has since stated: “Health literacy is not a function of an
individual in our minds - but of individuals, organizations, and communities. I wish many times now
that we had found a way to put that in the definition and not in an explanatory note. In the definition
we used the word "individuals" and everyone interprets that to be patients. Again we failed to clarify
that a physician is an individual. Nurses, pharmacists, family members, pharmaceutical executives are
also "individuals" who require "the capacity to obtain, process, and understand basic health
information....." A physician who does not have the capacity to illicit useful information from a patient,
to understand what impact information he gives a patient will have on that patient's compliance, is not
health literate. This is equally true for those us working in prevention – we too are individuals who
require the capacity to obtain, process and understand health information about our audiences if we
are ever to have a health literate America. There is a second aspect of the definition which is often
overlooked. It is the word "services". Too much of our energy is going into making written materials
clear and in training disadvantaged groups to understand the stupid things we tell them. The services
word places emphasis not on what we say, but on what we do to help people make appropriate health
decisions. I would love to see a marketing study of the service aspect of health literacy as well as the
information aspect. We should have done a better job of making this clear in the definition itself.”
(Posted on the National Institute for Literacy listserv, December 4, 2008)

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Slide 4
Joanne G. Schwartzberg, MD is the Director of Aging and Community Health for the American Medical Association. She stated: “I would like to broaden the definition of health literacy to include the concept of the ability to act on the medical decisions made. It is not enough to understand the information and make an appropriate decision; patients, professionals and institutions need to be able to know how to actually carry out that decision successfully. Part of the concept of literacy in the 1991 definitions was to enable the person to function in society and obtain their full potential. That concept did not get into the health literacy definition, but it is crucial.” (Posted on the National Institute for Literacy listserv, December 4, 2008)

Slide 5
This definition of literacy comes from the National Assessment of Adult Literacy.

Slide 6
Readability refers to the level of success a group of people has with a document. Success is defined as understanding the information, reading it at an optimal speed, and finding it interesting. An additional criteria for health information is whether or not the patient acts on the information. Providing information to the patient is only half of our job. We also need to help the patient apply this information to their situation and experiences and make appropriate decisions regarding their health.

Slide 7
Legibility is often separated from readability in that it specifically deals with the textual and graphical elements of a document. For the purpose of this presentation and toolkit, the term readability will be used to also cover all aspects of documents design.

Slide 8
The concept of universal design can be applied to documents. The goal is to create a document that can be used as many people as possible. This reduces the need to create several versions for different populations according to their needs. Documents that are universally designed save time and money, and documents that are easy to read and well designed benefit most patients.

Slide 9
Walk up to any major retail store or business these days and the door automatically open for us. Electronic doors were originally designed to provide access for the handicapped. Yet, we all benefit from the convenience and ease of electronic doors. This is universal design. One entrance meets the needs of most people.

Slide 10
A good example of universal design. Note that document uses pictures to show rather than tell you how to set up your computer. The text is limited (and in this example, is actually written in 3 different languages). The steps are numbered, as well as each location on the back of the tower. The components are also color-coordinated. Dell Computers does not need to create several versions of this instruction sheet. Instead, this one document can be used by many people around the world.

Slide 11
And finally, an example from health care. Auxiliary labels on prescription pill bottles give us important information about how to take our medications, how to store the medications, and alert us to possible warnings and side effects. Note that the emphasis is on the icon, or small graphic that accompanies the message and not so much on the word themselves. By designing an icon that can be universally understood ensures that those who cannot read very well, or perhaps cannot read at all, and those who do not speak or read English can still understand the important message on the label. This is universal design. It is a very important component of readability. Universal design allows us to develop a document that can be used by the majority of our patients, without having to adapt, change or create several versions. This saves time and money. Research also shows that even those who read at a high level, say 10th grade and above, appreciate information that is clear and easy to understand, written at the 6th to 8th grade level. Just like we are not offended by having electronic doors automatically open for us, we are not offended by information that is written clearly and documents that are well designed. The goal of universal design is to create health information that can be used by as many patients as possible, 80-90 %. There will be some patients who cannot read, or
the visually impaired, or those who do not speak or read English who will not benefit from printed patient education materials. Other methods of patient education are necessary. However, since we are focusing on printed patient education materials, we begin with the assumption that we have assessed the needs of our patients and are providing education and information in a way that meets their needs and preferences.

Research Overview

Slide 1
This section provides a brief overview of some of the research regarding the design of printed patient education materials. I will share some of the resources I used in the development of this presentation and toolkit and provide a rationale for why I developed the design readability scorecard.

Slide 2
While we are focusing on using printed patient education materials, I would be amiss if I did not begin by stressing what several research studies have shown to be true: to be most effective, printed education materials should be used with verbal instruction and education. And the opposite of that is also true. Verbal health information and education that is followed up with printed information greatly increases knowledge retention and understanding. Research also shows that good information, both verbal and written, improves patient satisfaction. Patients who report higher satisfaction also report higher levels of trust and are more likely to comply with recommendations and adhere to treatment.

Slide 3
Most patient education is done verbally. By that I mean the majority of what we want patients to know about their health, about a particular disease or condition, a treatment, medication, test, screening, or procedure, is done by talking to the patient. This is most often done by the doctor, a nurse, a patient educator, or other member of the health care team. Verbal communication is essential. Printed patient education materials should never replace verbal communication. Instead, printed materials provide additional, more in-depth information, and reinforce what is verbally communicated to the patient. Printed education materials and information serve as a source of future reference and can be shared with family members and other care givers. Patient education materials that are written well and designed well encourage and empower patients to better self-manage their health, share in informed decision-making, and become active participants in their care.

Slide 4
The average adult in the United States reads at about the sixth to eighth grade reading level, even if their total number of years of education far exceeds that grade level. This is often surprising to most people who hear this for the first time. We tend to equate reading level with years of education and we expect someone with a high school diploma to read at the twelfth grade level. However, reading skill varies among individuals who have completed the same number of years of education. Also, reading is a skill that must be retained. A college student may be able to read and understand information that is written at a fourteenth or fifteenth grade level. But after college, unless that student continues to read books and articles at that level, his reading skills will regress. A typical newspaper is written at the tenth grade level. USA Today is written at about the eighth grade level. Most books of the New York Times list of bestsellers are written at the eighth to tenth grade level. We read mostly for information and entertainment, and we usually select reading material that is written at a level that is comfortable for us.

Slide 5
Teaching patients with low literacy skills by Doak, Doak and Root, now out of print, remains a seminal text and resource for health care professionals and educators. Armed with a magnitude or research, and before data from the National Adult Literacy Survey conducted in the early 90’s were widely available, the authors were recommending that health education materials be written at the sixth to eight grade level. They and other researchers also told us that most health information is written at the tenth grade level and often above, far exceeding the reading skills of most Americans. A second national survey, the National Assessment of Adult Literacy, which for the first time included an assessment of health literacy in America, and several research studies helped us focus on the
readability of our printed patient education materials. Despite all the research, the tools and recommendations, we still often produce patient education handouts that exceed the reading level for most of our patients. But we continue to make strides in improving these education materials. While we focus on the words we use, applying the recommendations of plain language, we can easily overlook another important aspect of readability.

**Slide 6**
The design, layout and format of printed patient education materials is just as important as the words we use, and can equally affect readability in both positive and negative ways. You can create a document that is written in plain language and even use a readability formula such as SMOG, FOG or Fry to confirm it is written at the sixth grade level; however, if the font is too small, if the document does not include white space, or the text is not grouped into manageable sections, the document can be difficult to read. If a document looks difficult to read, if it’s heavy on text, with long lines of words in small print that stretch across the width of the page, it is likely that patients will not even attempt to read it. Of course, the reverse is also true. You can have a well designed document that looks easy to read, but if contains long sentences, jargon, and medical terms and concepts that are not clearly defined or explained, the document can be difficult to read. How a document is written, that is the words and style we use, together with the design and format of the document determine whether or not patients perceive that it is easy to read and understand.

**Slide 7**
In the key terms and definitions section of this toolkit, we defined and explained the concept of universal design. The goal is to develop documents that the majority of our patients can use, without having to create several versions of the same document. If most Americans read at the sixth to eighth grade level, and if most people prefer information written at that level despite their years of education attained, it makes sense to produce documents written at this level. It will be appropriate for the majority of your patients. There may be 10 to 20 percent of patients who may need a specialized handout. Older patients often have vision problems, so you might need to make versions of your handouts using a larger font. Or you may have patients who do not speak or read English well or at all, and you should make appropriate accommodations by having your patient education materials translated. The design recommendations in this toolkit are for universal design. There is research as well as tools and resources that can assist you in developing specialized documents customized for your patients that are not included in the 80 to 90 percent for whom universally designed materials are appropriate. Also, we are focusing on printed patient education handouts. Different recommendations often apply to other mediums. Web based documents are a good example. Designing web based education materials and web pages is outside the scope of this toolkit. However, I have posted some links to resources for those who want more information about designing documents for the Internet.

**Slide 8**
Here is the reference citation to Teaching Patients with Low Literacy skills and other resources I consulted while developing this presentation and toolkit.

**Slide 9**
There are a number of manuals, handbooks, and guides to writing and designing patient education materials. Most, including resources from the CDC, CMS and NIH are in the public domain. I have included them as links in the “additional resources you might find helpful” section on the right side of this Web page. The Health Literacy Style Manual, prepared for Covering Kids & Families, a national program supported by the Robert Wood Johnson Foundation, is an excellent resource.

**Slide 10**
Despite all of the available resources for writing and designing patient education materials, I found variation in the recommendations, and some, to be quite honest, were downright vague and not very helpful. For example, I consulted ten different resources looking for recommendations about white space, and in particular, guidelines for setting document margins. I found ten different answers. Some resources offered specific recommendations, such as “leave at least ½ to 1 inch of white space between the margins of the page and between columns.” Others only offered vague suggestions like “allow wider margins.” Still other handbooks and guides didn’t offer any recommendations or suggestions about margins and white space at all. For this toolkit, then, I looked at the available
research and resources and collated the best recommendations based on the evidence. Because of the variation in recommendations, design of documents is often left to the subjective judgment of the writer or graphic designer. However, there are key design elements that do impact the readability of printed patient education materials and I have included them in this toolkit along with illustrative examples and design strategies proven to have a positive impact on readability. At the same time I wanted to develop a design evaluation tool beyond a simple checklist or list of recommendations. Just as readability formulas and tools like FOG, SMOG and Fry provide a score or grade level for the text, I wanted to develop a design evaluation tool that converts what are often subjective judgments into a quantifiable, numeric score that has meaning, can be validated, and can provide a standard for evaluating and comparing documents based on design. The design score, together with a score from a readability formula, provide a more complete evaluation and help ensure that our patient education documents are both written and designed to be “easy to read.”

1. Font

Slide 1
I’ll be the first to admit that I don’t know everything about graphic design. Most word processing software refers to font as the name for a specific set of characters or type. I’ve also heard it referred to as fontface. There are also “font families.” Arial is a popular font. But there is also Arial Narrow, Arial Black, and Arial Unicode MS. Within each of these fonts you can bold, italicize, or do both. Under the advance settings you can manipulate the height and width of the letters, change the spacing between letters, and adjust a number of other settings that will change how the letters look and print. For consistency and simplicity, I am using the term “font” to mean all of this, and more. The first thing to evaluate is the size of the font. The design manuals and style guides I reviewed for this toolkit offered similar, yet often too vague advice. A lot of what we evaluate regarding the design of documents is subjective. To recommend that you use a font that is comfortable for most people to read can mean different things to different people. When in doubt, involve the end users. Invite patients to review and evaluate patient education materials and collect feedback about how the documents are designed. However, that is not always a feasible option. Following the basic design guidelines in this toolkit will at least provide an evidence-based framework for how to design documents that are easy to read. With that said, let’s continue our evaluation of fonts. The prevalent recommendation in the research is to select a font that is at least 12 in size. Twelve what? Font size is commonly measured in points or picas. For this toolkit we are using points. The fonts used in patient education documents should be between 12 and 15 points. Why the range? I’m glad you asked!

Slide 2
Font size is not universal. While we should think of points or picas as a measurement, it’s interesting to note that one font in 12 point size may look larger than other fonts at 12 point. This table shows a comparison between some common fonts. Notice, too, that using a bold option for a font increases the amount of space it uses on the page, but it is still the same point size as the “normal” or non-bold font within the same font group.

Slide 3
Here is perhaps a better illustration. Note that the phrase “exercise for healthier heart” in each of the 3 sample fonts takes up about the same amount of space on the page: 20 characters, about 2 ¼ inches. To make a simple recommendation such as “use a 12 point font” is really not that helpful, because using Verdana at 10.5 point size is comparable to using Times New Roman at a 13 point size. The recommendation in this toolkit, then uses Arial 12 point font as the standard. Depending on which font you use in your document, as this example shows, could mean using a font at 10.5 point or 13 point, but the size is comparable with (i.e. the same size as) our standard measure of Arial 12 point. That’s why the recommendation is a font size between 12 and 15 point. For audiences that may need larger print (the elderly, for example) you can go larger to Arial 14 point, which would be comparable to Times New Roman at 15 point. Using larger fonts than this is really not feasible in printed documents and you should consider using a assistive devices, such as a magnifier or digital reader, or perhaps finding an alternate method for providing information and education to patients with low vision.
The second consideration is the type of font. There are two basic types: serif and sans-serif. You can recognize serif fonts because the letters have end strokes or “footers.” Times New Roman is a commonly used serif font. In print, serif fonts are considered easier to read, especially as main body copy or long passages of text. Sans-serif fonts use letters without the end strokes or footers. Arial is a common sans-serif font. In printed documents, sans-serif fonts are considered more difficult to read and are not recommended for main body copy or long passages of text. Sans-serif fonts are best used in smaller doses, which makes them ideal for titles, headings and subheadings. The contrast between sans-serif headings and serif body copy is both attractive and functional, as it helps guide the reader through the document and clearly marks where one section of information or topic ends and another begins.

This example speaks for itself. Which font is easier to read?

This brings me to what I call “character characteristics.” In selecting a font, it is a good idea to look at all of the letters in that font. You may want to swap out one letter for one from another font that is easier to read. There are some fonts that blur the line between serif and sans-serif, like a hybrid font. In the previous example using the word “ill” you might want to swap out the capital I in Arial with one from another font that is easier to read, but still fits with the rest of the font you are using and doesn’t look out of place. Some letters, such as o, s, and m do not vary much between different fonts. Other letters like Q and G, as well as some punctuation such as question marks, do vary quite a bit. In your document, you can swap out any “odd” characters with a better alternative from a similar font.

For a more in depth review of fonts, see Alex Poole’s Literature Review on which is easier to read: serif or sans-serif fonts. http://www.alexpoole.info/academic/literaturreview.html

Now let’s take a look at how fonts can have a negative impact on readability: the first being too many different fonts within one document.

Here is a document that uses several different fonts. While the addition of color seems to help make the different sections stand out, it is recommended to not use more than 3 different fonts in one document.

This is the bottom half of the same document. I count 7 different fonts. Again, the design of this document, including the use of color, is meant to segment the text into separate chunks. However, in a typical print document, too many different fonts can make the document look sloppy and actually make it harder to read. It also adds strain to the eyes. Again, the recommendation is to use no more than 3 different fonts within the same document.

Another negative impact on readability is the use of fancy, script, or novelty fonts.

While these fonts are fun and tempting to use, they often make your documents harder to read.

The designer of this brochure on stuttering in children, chose a child’s handwriting script for the headings. The word “disfluent” in the first heading is not a word I was familiar with, so it when my eyes scanned the page they stopped there. Note how the f and the l are connected to form one character. For readers with low literacy, there may be several words they are unfamiliar with, and a script font can make it even more difficult for them.
Another negative impact on readability is the overuse of italicized and/or underlined text.

Here are examples from 3 different documents. Notice how large blocks of italicized text change the look of a document. While underlining may be used to add emphasis, it’s best to restrict it to just key words. Underlining entire paragraphs is not recommended. When using underlining for emphasis, it is important to select the key words you want to highlight, because overuse of underlining really defeats the purpose. The same rules apply to italicizing text for emphasis. Use both sparingly but consistently in your document.

Another negative impact on readability is using ALL CAPS.

This example pretty much says it all. When reading, our eyes recognize shapes and patterns that help us recognize letters and words faster. Text that is in ALL CAPS forces the eye and the brain to read the individual letters for comprehension. This slows down reading speed considerably. Also, for readers with lower literacy who rely more on patterns and shapes, will find text in ALL CAPS much more difficult to read.

The final consideration regarding fonts is the contrast between the text and the background.

Contrast is also a consideration when using color. This toolkit considers contrast to both be part of font selection and use of color. Documents are easiest to read when dark copy text is over a light background. Bolding a font can often improve contrast. When using a shaded text box to emphasize key information, there should be a high contrast between the text and the shaded background.

Often times we design a document in high contrast: black text on a white background. But we then may choose to print the document on colored paper. Contrast is important to consider here. Documents where the contrast between the text and the background is low are much more difficult to read.

It is important to note that contrast and the choice of fonts are important considerations even in black and white or grayscale documents.

Use the readability design scorecard to evaluate the fonts used in your document. Add up the positive points, and subtract the negative points to determine the total score for this design element.

2. Paragraphs

How paragraphs are formatted can impact readability. Documents that use blocked paragraphs are easier to read. Blocked paragraphs should not indent the first line, they should be left justified, and have one return (or white space) between each paragraph. Headings and subheadings should begin each section or topic in the document. Headings should be descriptive and provide clues to what information is included in the following paragraphs. Good headings serve as signposts and help the reader scan longer documents to find the information they are looking for.

Here is an example of a brochure that uses blocked paragraphs. The first sentence of each paragraph is not indented. The paragraphs are left justified, with a jagged right margin. Paragraphs are
separated by white space, and headings follow a “question and answer” format that makes the document easy to scan and navigate.

Slide 3
Here is another example of blocked paragraphs. Notice the descriptive headings.

Slide 4
A jagged left margin can have a negative impact on readability.

Slide 5
Some of the paragraphs in this document are indented, other are not. There is also is no white space between paragraphs. Compared to the previous example, this document looks more “text heavy” and the jagged left margin is not as clean as documents that use blocked paragraphs as previously described.

Slide 6
This is an example of a patient education sheet used at my organization. Notice the jagged left margin, which is most noticeable in documents with short paragraphs.

Slide 7
As part of a Centers for Medicare and Medicaid demonstration project, we redesigned our patient education template to use blocked paragraphs. Notice that the bullet points line up along the left margin as well. This creates clean lines and the extra space between paragraphs and bullet points makes the document look less crowded and easier to read.

Slide 8
Another negative impact on readability are paragraphs that use short, non-descriptive headings and subheadings.

Slide 9
Here are some examples from some of our old patient education documents.

Slide 10
Here is another example. What does “contagion” mean to patients reading this handout? Wouldn’t a better heading for that section be “Impetigo is contagious?” Notice, too, that are headings and subheadings were not always consistent in format. And again you see a good example of how a jagged left margin makes your eye zig-zag through the document.

Slide 11
Here is an example of a document that not only doesn’t use good descriptive headings, but also doesn't have a consistent format.

Slide 12
Another negative impact on readability is awkward spacing between lines of text.

Slide 13
Too little spacing between lines makes the text look squished together. Readers can lose their place and skip some of the text when the lines are too close together. Likewise, too much space between lines is awkward to read and readers can lose their place here, too.

Slide 14
Text should be left justified as shown in previous examples of blocked paragraphs. Text that is center, right, or full justified is harder to read because it interferes with the natural process of reading from left to right.

Slide 15
This is an example of a tri-fold brochure. The cover panel is on the right. Note the text in the middle panel (which is the back of the brochure) is center justified.
While center-justified text may be appropriate for a short block of text on the back of a brochure, longer passages and full paragraphs should not be center-justified.

Text that is justified on the right is more difficult to read. Compare the text that is left-justified with the text that it is the yellow box.

Text that is full-justified has straight edges on both the left and the right. To accomplish this, the space between letters and words is manipulated. This causes some of the letters and words to be pushed closer together, while creating unequal gaps of white space. Because of this, text that is full-justified is more difficult to read.

Use the design readability scorecard to evaluate how paragraphs are formatted in your document. Total the positive points and subtract the negative points to determine the document’s overall score for this design element.

3. Line Length

The third design element is line length.

When researching this design element, several sources referred to long lines of text contributing to “eye fatigue” and the added stress on low literacy readers who had to read text that crossed the width of a standard 8 ½ by 11 page. Shorter lines of text are considered easier to read and the following recommendations are common ways to measure appropriate line length: Columns of text should be between 2 ½ to 4 inches across. Or 7 to 14 words (depending on the length of the words and the size of the font you are using). Another measurement, known as “alphabet and a half,” results in lines of text that are about 39 characters long, including spaces between words and after punctuation marks. For a standard 8 ½ x 11 page, it is recommended to use a two-column format. Sometimes a smaller third column, often referred to as a “side bar” can be used. A standard page in landscape, that is 11 x 8 ½, is often designed using a three-column layout. A tri-fold brochure is a good example.

Lines that are too long have a negative impact on readability.

Consider this example. Reading large blocks of text in this type of layout results in “eye fatigue” which causes strain on the eye muscles and frustration for many readers. Most documents we read, including books, magazine and newspaper articles, use short lines of text. Whenever possible, it is recommended to use a two-column layout for patient education materials.

Here is an example of two layouts: one has text that goes across the width of the page, the other is designed using two columns. Which document looks easier to read?

Another negative impact on readability is lines of text that are too short.

In this example, a four-column layout creates lines that are too short. It is most noticeable when bullet lists are included as part of the text. Unlike long lines of text that contribute to “eye fatigue” as a result of the eyes scanning back and forth across the full width of the page, short lines of text cause rapid back and forth eye movements. This is equally frustrating to readers. In this example of a document designed in landscape format, it is recommended to use a three-column layout. For a
standard 8 ½ x 11 page that is not in landscape format, it is recommended to use a two-column layout.

**Slide 8**
Here are some basic examples of two-column layouts. Columns can be of equal size, or one column can be wider than the other. This creates a main column and what is commonly referred to as a sidebar. Information that you want to highlight, contact information, a quote, or a list or additional resources related to the main topic are often found in sidebars. In a two-column layout, one column can be for text, the other can be used for graphics or photos that illustrate key points in the text. Using columns creates several options for your documents. Not only does it set your text in a line length that is easier to read, documents designed using columns look easier to read and provide a grid that promotes good blocking and layouts that are attractive.

**Slide 9**
Score your document using the readability scorecard. Add up the positive points for line length. Subtract any negative points to determine the overall score for this design element.

4. **Grouping**

Notes not available for this section.

5. **Graphics**

Notes not available for this section.

6. **Color**

**Slide 1**
The sixth design element is color. Color adds appeal to documents. It attracts attention and makes readers want to pick up a brochure or handout. Color also can be used to add emphasis. Text that is in color can stand out on the page. To catch the eye of the reader, we often put important "need to know" information in colored text box to catch the reader’s attention. Color also helps the reader scan and navigate through longer documents. Headings that are in a bold color help readers find the information they want and can also serve as signposts guiding readers through the document. Color can also increase identification and meaning, especially when we choose colors that have a cultural or social meaning to the intended audience. A consistent color theme in your documents can also help your audience identify your organization or brand.

**Slide 2**
This is an example of a document that uses color well. It is the inside panels of a tri-fold brochure. Color is used to identify headings in the document and draw the reader’s attention to important information listed as bullet points. Color photos and graphics add appeal and make this an attractive document.

**Slide 3**
Here is another example of a document that uses color well. Notice how your eye is drawn to the headings. This makes the document easy to scan and navigate. Notice, too, that your eye is drawn to the shaded boxes that highlight quotes from patients.

**Slide 4**
This is an example of using colors, graphics and photos that have cultural and social meaning for a specific audience.

**Slide 5**
One way color can have a negative impact on readability is what I call "color overload."
Here is an example. Readability would improve for this document if the main sections of text were in black, and only the headings and key information were presented in color.

Contrast is an important consideration when using color. Contrast is also addressed in the discussion of fonts, but is included again here because low-contrast is a common error when using color.

Here are some examples of low contrast. The yellow text is hard to read on a white background. Also note the blue shading behind blue text in both examples.

You can design your document in high contrast, for example black text on a white background. But the contrast between text and background is altered when printed on colored paper. In your opinion, which one of these examples is the most difficult to read?

Keep in mind that low contrast can also be a problem in black and white or grayscale, too.

Approximately one out of twelve men and one out of two hundred women are born with a color deficiency. About 99% of people with color blindness are “red weak” and “green weak” and have difficulty distinguishing the difference between these two colors. In total, there are actually 7 types of color deficiency. In addition, the elderly see colors differently, but are not color blind in the usual sense of the term. Use colors with high contrast and avoid using colors that are similar in shade or intensity.

Reverse text, light text over a dark background, is more difficult to read than dark text over a light background.

Here is an example. Notice that the main body text is difficult to read. The larger, bolded text, however, is much easier to read. It is best to limit the use of reverse text. However, it can sometimes be used effectively as headings or to draw attention to important information. The key is to reserve the use of reverse text for small chunks of text and avoid putting longer passages in reverse text.

A good test for using color is to check how the document transfers to black and white (or grayscale). Color printing is expensive, and there may be times when you want to make copies of a handout or brochure in black and white. If you designed your color document well, it should easily transfer. Documents that have low-contrast between the text and the background, as well as documents that use reverse text often do not transfer well from color to black and white.

Here is the example of a document using reverse text.

And here is that same document in black and white. Notice that it is more difficult to read than the original color document.

Here is an example of a document that uses color well.

And here is that same document in black and white. Notice that it retains much of its readability.
Slide 19
Use the design readability scorecard to evaluate the use of color in your documents, giving both positive and negative points when appropriate. Subtract the total negative points from the total positive points to determine the document’s design score for use of color.

7. White Space

Notes not available for this section.