Both the National Adult Literacy Survey (NALS, 1992) and the National Assessment of Adult Literacy (NAAL, 2003) confirmed that as much as 50 percent of the American adult population reads at or below the 6th grade reading level. Numerous studies conclude that most health information is written at the 10th grade level and above. There continues to be a disconnect between the health information we write and the audience we are writing it for. Doing readability testing on printed health information materials remains one way to evaluate and improve written materials.

There is a number of readability formulas available, with Flesch-Kincaid, Fog, Fry and SMOG among the most commonly used. Each readability formula uses a different mathematical algorithm to compute a readability score that is usually converted to a reading ease score or reading grade level. While each of the readability formulas calculate scores based on basic semantic and syntactic elements such as length of words and sentences, and number of syllables and sentences in a sample of text, it is possible to get a range of scores for the same sample when using different readability formulas. It is important, then, to choose a readability formula and use it consistently to evaluate your written health information materials.

Microsoft Word includes readability statistics as part of the spelling and grammar check. With a click of a button, documents can be evaluated using the Flesch Reading Ease and the Flesch-Kincaid Reading Grade. However, readability experts warn that the tool within Microsoft Word has a flaw that causes reading grade scores to be about two grades lower than they actually are. Still, the convenience and ease of a score that is calculated by the computer makes this a commonly used tool. Another readability calculator is available for the SMOG formula. Sample text can be cut and pasted into the online tool and a score is generated. However, readability scores that are calculated by hand are usually more accurate. The presentation included 6 examples of calculating SMOG readability scores by hand.

It is important to note that readability formulas have limitations. They cannot compensate for the impact of design and layout or the complexity of most health concepts. They also do not take into account a reader’s familiarity with the subject. A person newly diagnosed with diabetes, for example, will have more of a challenge reading information that includes medical terms and concepts they are encountering for the first time, while as someone who has been managing their diabetes for several years will already be familiar with most of the terms and concepts. Still, readability formulas are useful despite their limitations. They give a benchmark of a document’s reading level that can be compared against retested scores following revisions to the document. Readability formulas are also useful training tools and general guides for writers and educators. They validate and support the use of plain language and the principles of universal design.

Universal design is an important concept to consider when developing written health information materials. Universal design is the design of products, environments and
communications to be useable by people, to the greatest extent possible, without the need of adaptation or specialized design. One example is automatic doors found on most public buildings. While the American with disabilities Act was written to protect and provide services for a specific part of the population, we all benefit from the convenience and ease of doors that automatically open and close. Pictograms on medication bottles that show a wine glass with a slash through it tells us that this medication should not be taken with alcohol. The goal is to use symbols that can be understood without the need to read the text.

Likewise, following the principles of plain language, including using short, simple words, writing short sentences and paragraphs, and avoiding legal, technical and medical jargon are part of universal design. Making health information easy to read, however, is not dumbing it down. In fact, studies show that even patients who read at the college level prefer medical information written at the 7th grade level or below.

Using readability formulas to evaluate written health information ensures that we are writing materials that the majority of the public can understand. The presentation included tips for improving the accuracy of readability formulas, including adding periods to titles and subtitles and at the end of each statement in a bulleted list.

Medical terms, because they are often more than 2 syllables, will raise the readability of a document. The writer must determine which words are important for the patient to understand. For example, a document about high blood pressure may need to include the term “hypertension” because it is a word a patients might hear while speaking with their doctor. However, it may not be necessary to include words like “diastolic” and “systolic” or include “mm Hg” as part of a blood pressure reading. When possible, use alternatives to medical words when appropriate, such as “swelling” for “edema” and “chest pain” for “angina.” Don’t use alternative words that change the meaning of the medical terms, and don’t exclude medical terms just to lower the readability score. Each medical word that is used in a document should be defined clearly. It might be helpful to place medical terms and definitions in a shaded box so readers can refer to it easily, or include a glossary for longer documents.

Perhaps the most important thing to remember is this: there is no magic number. While we should aim for documents to score at the 4th to 6th grade levels, it is sometimes impossible to accomplish. As already stated, including necessary medical words will increase the readability of the document. These words can be removed from the document for readability testing. It’s very important not to write to the formula. In other words, do not remove terms and information that is important for the patient to know. Do not shorten all sentences just to lower the score. This will result in choppy text and may in fact make the document harder to read and understand.

Readability formulas, then, are best used as guides and as training tools for writers and educators. Test for readability as you write. Test the first draft to determine a baseline score, then as you edit and rewrite the document following plain language guidelines and the principles of universal design, retest the document to see if scores are improving. Choose a readability formula that makes sense to you and understand the basic principles of how it calculates a score. Be consistent and use the same method each time. Keep in mind that readability formulas have limitations and remember the tips and suggestions that improve their accuracy. When used correctly, readability formulas can be helpful, informative and persuasive tools that will help you and your organization produce written health information that is both easy to read and understand.