Health Literacy and Health Disparities

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Acknowledgement

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Learning Objectives

- Define health disparities
- Identify the link between health literacy and health disparities
- Define and appreciate the importance of health literacy and its impact on health care
- Discuss strategies to reduce health disparities caused by low health literacy
**Definition of Health Disparity**

![Image of a diagram showing quality of health care for non-minority and minority groups, with disparity and discrimination factors listed.]

Gomes and McGuire, 2001

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**More Definitions...**

- **What is race?**
  - Socially constructed categories based on parentage and physical appearance

- **What is culture?**
  - The way of life of a population, including shared knowledge, beliefs, values, attitudes, rules of behavior, language, skills, and world view among members of a given society

- **What is an ethnic group?**
  - A group of individuals with a shared sense of peoplehood based on race, religion, or national origin (Gordon, 1964), now commonly used to refer to a group with a distinctive culture

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**A few more definitions...**

- Health Status
- Health Care
Disparities in Health Status and Health Care

How extensive are health care disparities?

Why do health care disparities exist?

What are the perceptions of providers and the public regarding disparities?

“The preponderance of studies...find that even after adjustment for potential confounding factors...racial and ethnic disparities in cardiovascular care remain.”

- Access
- Disease severity
- Site of care
- Disease prevalence
- Co-morbidities or clinical characteristics
- Refusal rates
- Overuse of services

IOM, Unequal Treatment, 2003

A few examples...

- Cardiovascular disease
- Asthma
- Cancer
- Psychiatric disorders

Picture from: school.discoveryeducation.com/.../in-body.html
Disparities in Health Status and Health Care

How extensive are health care disparities?

Why do health care disparities exist?

What are the perceptions of providers and the public regarding disparities?

Why Do Health Disparities Exist?

Potential explanations
- Actual clinical differences
  - e.g., disease, presentation, pharmaco-genomics
- Access to healthcare
  - e.g., insurance and ability to pay
- Patient-provider interaction
  - Differences in patients’ preferences for healthcare
  - Differences in patient-provider communication
  - Discrimination, bias, stereotyping

Adapted from Oddone, 2002

Views of Providers

Physicians
- National Survey of Physicians was based on a nationally representative random sample of 2,608 physicians
- Majority of physicians say the healthcare system “rarely” or “never” treats people unfairly based on racial or ethnic background
  - 55% “rarely”
  - 14% “never”

Kaiser, 2002
The flip slide...

- What about the 29% of physicians who disagree?
  - More likely to be African American or Latino physicians
  - Think lack of minority physicians and communication difficulties are primary reasons.
  - Other

Kaiser, 2002

Views of Patients

Patient-physician communication


<table>
<thead>
<tr>
<th>Provider didn't listen</th>
<th>Provider didn't answer question</th>
<th>Provider didn't explain reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Race affects my health care&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

National Healthcare Services AHRQ, 2005

National Health Disparities Report

- Many racial/ethnic groups as well as poor and less educated patients report:
  - Poor communication with their physicians
  - More problems with some aspects of the patient-provider relationships
  - Greater difficulty accessing healthcare information, including information on prescription drugs

National Healthcare Services AHRQ, 2004
Evidence of Provider Bias: Schulman Study

Patients as portrayed by actors in the video component of the survey

Schulman, 1999

Evidence of Provider Bias

Catheterization referrals differ significantly
- Black patients less likely to be referred than white patients
  - Odds ratio 0.6, p-value 0.02
- Women less likely to be referred than men
  - Odds ratio 0.6, p-value 0.02
- In a combined analysis, black women fared the worst as compared to white males
  - Only 79% of black women were referred for cardiac catheterization as compared to 91% of white men, white women and black men.

Schulman, 1999

Schulman Study

The study examined:
- Physician recommendations for referrals
- Assessment of personality traits
- Predictions of behavior

Multivariate analysis of predictors, adjusted for physician assessment of probability and severity of symptoms

Schulman, 1999
Evidence of Provider Bias

Perception of personal characteristics:
• Physicians more likely to attribute negative personality traits to black patients and women

Individual assessment of predicted behavior:
• Black women more likely to over-report symptoms
• White women more likely to comply with treatment
• White men more likely to sue

Schulman, 1999

Disparities in Geriatric Health Care

- Different from disparities in health status

– *What happens to elders in the health care system?*

Literature on Health Disparities in Geriatric Care

Major limitation in the literature:
• Most studies are on African American/white differences, not all "minorities"
What are the Health Care Disparities for Older Adults?

- Wide range of services less available to older African American than white elders
  - Health care “in perpetuity” promised in return for ceded land not available for many older American Indians
  - Findings from the AHRQ National Healthcare Disparities Reports and Medicare analysis (Fisher): leg amputations and A1C in diabetics; restraint use in nursing homes

Disparities in Skilled Nursing Facilities (SNFs)

- Access to long-term care facilities:
  - Blacks are concentrated in a smaller proportion of LTC facilities
  - Blacks are more likely to occupy Medicaid facilities with deficiencies
  - Blacks more likely to live in understaffed facilities
  - LTC facility racial segregation well-documented in Chicago

Disparities in SNFs

- Racial Health Disparities:
  - development of pressure ulcer (Rosen et al. 2006 and Baumgarten et al. 2004),
  - treatment of diabetes mellitus (Allsworth et al. 2005),
  - assessment and treatment of vision loss (Friedman et al. 2004),
  - treatment for secondary prevention of stroke (Christian et al. 2003),
  - use of advance care planning (Degenholtz et al. 2002).
How do we reduce disparities?

Components of Effective Ethnogeriatric Care

- Organizational commitment to implementing cultural competence at all levels
- Well functioning multidisciplinary teams
- Providers with skills and commitment in cultural competence and geriatrics

Importance of Enhanced Communication with Geriatric Patients

- High-risk patients!
  - Cognitive impairment
  - Impaired sensorium
  - Low functional health literacy
  - Complicated medical history with multiple, chronic medical problems and complex medical regimens.
Important Members of the Ethnogeriatric Team: Cultural Liaisons

- Cultural Navigators
- Promotores
- Community Health Workers
- Health Coach
- Cultural Guides/Cultural Brokers

Green et al, 2008

What else can be done to reduce health disparities?

Improve the health literacy of our population!

What is Health Literacy?

- Functional Health Literacy
  - The wide range of skills/competencies people develop to seek out, comprehend, evaluate, and use health information/concepts to make informed choices, reduce health risks, reduce inequities in health, and increase quality of life.

- 90 million people in the U.S. have low health literacy

Zarcadoulas, Pleasant, & Greer, 2003; 2005
Aspects of Health Literacy

- Traditional domains
  - Reading
  - Writing
  - Speaking
  - Numeracy
- Scientific
- Cultural
- Civic

Zarcadoolas, Pleasant, & Greer, 2003; 2005

Health Literacy: Complex Interfaces

- Health information
- Forms
- Health promotion & disease prevention
- Chronic disease treatment
- Acute care
- Medical mistakes

Zarcadoolas, Pleasant, & Greer, 2003; 2005

Social Determinant of Health

- Health literacy is more than a predictor of individual behavior
- Health literacy is a complex social determinant of health along with
  - Poverty
  - Social support
  - Employment/working conditions
  - Physical environment
  - Health system performance

Zarcadoolas, Pleasant, & Greer, 2003; 2005
### Low Health Literacy Outcomes

- People with low health literacy:
  - Use screening/preventive services less
  - Present for care with later stages of disease
  - Are more likely to be hospitalized
  - Have poorer understanding of treatment and their own health
  - Adhere less to medical regimens
  - Have increased health care costs
  - Increased mortality; die earlier


### Risk Factors for Limited Health Literacy

- Age
- Low income
- Education
- Minority ethnic group
- Recent immigrants
- Born in U.S. - English is second language (ESL) or limited English proficiency (LEP)

### Low Literacy Behaviors

- Incomplete/inaccurate registration forms
- Inability to give coherent/sequential past history
- Frequent missed appointments, laboratory or other test procedures
- Makes excuses in response to written information
  - I forgot my glasses. I'll read it when I get home. Can you read it for me?
  - Let me take this home and discuss it with my children.
  - Eyes wander over page; look confused.
**Low Literacy Behaviors (cont’d)**

Medication indicators:
- Inability name medications, their purpose or dosing
- Patient may say they are taking their medications but no change in symptoms/conditions
- Identify pills by color/appearance not label

**HL Assessment & Screening Tools**

- NAALS: National Assessment of Adult Literacy Survey
- REALM: Rapid Estimate of Adult Literacy in Medicine and the new version, REALM-R
- TOFHLA, S-TOFHLA, Adapted TOFHLA: Test Of Functional Health Literacy in Adults
- NVS - Newest Vital Sign
- * Single item question
- * Ask Me Three
- * Personal observation

**Asking about Health Literacy**

Some ways to approach patients/clients:
- “What things do you like to read?”
- “We need help fixing the information we give to people -- how do you think we could make this better?”
- Ask patient to read the prescription bottle and what does it mean?
### Types of Health Care Messages

- Oral
- Written/printed
- Visual
- Technological
- Multimedia or combinations

### Improving oral communication is another way to improve health literacy

- Use of interpreters and translators is another

### Teach-Back Method

- Technique to improve communication & confirm understanding among individuals with limited literacy skills
- Individuals recall or explain in their own words what has been discussed.
  - e.g., I always ask my patients to repeat things back to me to make sure I explained things clearly. I’d like you to tell me how you’re going to take the new medicine we discussed today.
Closing the loop: physician communication with diabetic patients who have low health literacy

Figure 1

Guidelines for Trained Interpreter’s Behaviors
- Listen attentively in one language
- Repeat the original message accurately and completely in another language
  - Without adding, omitting, or changing key information or intended meaning
- Interpreter is ethically bound to repeat everything
- Utilize note taking when appropriate
- Recommend optimal positioning
- Ensure confidentiality of patients privacy

Use of a Medical Interpreter: Guidelines for Healthcare Providers
Prior to the visit
- Make an honest, formal assessment of your own foreign language skills, including correct medical terminology
- If not fully competent, use an interpreter
- Arrange for trained interpreter to be present
- Briefly discuss goals for visit with interpreter
- Allow introductions of all parties
- Set the tone for the interview:
  - Ask interpreter to interpret accurately
Guidelines for Healthcare Providers

During the Medical Encounter:

- Look and speak directly to the patient, not the interpreter
- Speak in short sentences and pause
  - Allow the interpreter to repeat what has been said
- Use even pace and normal tone of voice
- Some patients may understand some English, and all patients respond positively to a calm tone of voice and respectful body language

**If provider is fluent in the target language, she should share discussed information with members of her team**

Problems with using Untrained Interpreters

- Interpreting is a learned skill developed by bilingual people through formal training
- Untrained Interpreters may:
  - Not be familiar with medical terminology
  - Lack language skills
  - Omit, add or change the message
  - Not be familiar with HIPAA or how to respect confidentiality rules
  - Not be familiar with patient’s rights and may want to make important decisions for the patient

Problems Using Children/Family as Interpreters

**CHILDREN**
- The information may not be appropriate
- May conflict with family dynamics & roles
- Places child in awkward situation vs. power
- Experiences trauma due to gravity of discussion

**FAMILY**
- May create emotional burden, or family pressure
- May create a conflict of roles within the family structure
- Confidentiality is compromised
- Patient self-determination is at risk
Effect on Clinical Outcomes?

- Untrained Interpreters
  - Incorrectly interpret 23% to 53% of words
  - More likely to make mistakes with potential clinical consequence
  - Quality of care is inferior for LEP patients:
    - Lower likelihood of having medication side effects explained
    - Decreased satisfaction with care
    - Distortions in psychiatric encounters

Marcos 1979; David 1996; Oden 1998; Kuo 1999; Flores 2003

 Appropriately and effectively written health messages also contribute to improved health literacy.

Assessment Tools for Written Health Messages

- Attribute checklists
- Readability formulas
- Suitability of Assessment of Materials (SAM) -
### Ethnogeriatric Considerations for Health Information

- Messages should be culturally appropriate (e.g., sensitive to beliefs, attitudes, values, diet)
- Use familiar and acceptable language, images, and examples
- Written messages should be translated and pilot-tested
- Utilize principles of clear health communication – information simple/clear

### Ethnogeriatric Considerations for Health Information (cont’d.)

- Education level & ability to read/write
- Individual vs. family orientation
- Community support, input, & assistance from key informants/cultural navigators
- Use of indigenous communication methods (e.g., fotonovelas, narrative, visual)
- Consider multiple message strategies through appropriate channels (e.g., computers?)

### Caveats for Translated Written Materials

- Sixth grade education level
- Literal (word for word) translation usually not appropriate
- Awareness of within-group variation (e.g., Spanish speakers may come from many different countries/regions, dialects)
- Pilot test in the community
- Evaluate
Creating Effective Written Health Care Messages for Older Adults

- Realistic objectives
- Focus on behaviors and skills, less on facts
- Establish a context for new information
- Partition/“chunk” complex instructions
- Cultural values/beliefs
- Include interactive or experiential activity
- Repeat important information
- Motivate the learner
- Relate to past experience
- Write for the patient, not the formula

An older learner must understand what to do and feel enabled to take action.

Doak, Doak, & Reis, 1996

Environment & Health Literacy

- Administrative & Staff Assessment
  - Bilingual staff
  - Attitude of respect & understanding
  - Assist with forms
  - Telephone assistance: live people

- Facilities
  - Signs
  - Wayfinding
  - Accessibility
  - Posted information
  - Other policies

Thank You!

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Health Literacy & Health Disparities
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Presenters: Seema Limaye, MD & Nancy Hikoyeda, DrPH, MPH

References & Resources


Grabowski DC. The admission of blacks to high-deficiency nursing homes. Medical Care. 2004; 42(5):456-64.


Rosen, J. “A new approach to developing cross-cultural communication skills” Medical Teacher Vol 26, No 2, 2004


Telephonic Interpreters
- Language Line: http://www.languageline.com

Language Resources:
- Hablamos Juntos Language Testing 2008
- Ethnomed http://ethnomed.org/

Online Teaching Module:
- NYU online module: Kalet A et al, 2002, 2005
  - http://edinfo.med.nyu.edu/interpreter/
  - http://www.reynolds.med.arizona.edu/EduProducts/HealthLit/index.html Performance

Assessments:

Assessments for Readability
- SMOG (Simple Measure of Gobbledygook) - http://www.harrymclaughlin.com/SMOG.htm
- Fry Formula
- Microsoft Word (go to grammar/spell check, readability)
Good Questions for Your Good Health

Every time you talk with a doctor, nurse, or pharmacist, use the Ask Me 3 questions to better understand your health.

1. What is my main problem?
2. What do I need to do?
3. Why is it important for me to do this?

When to Ask Questions

You can ask questions when:
- You see your doctor, nurse, or pharmacist.
- You prepare for a medical test or procedure.
- You get your medicine.

What If I Ask and Still Don’t Understand?

- Let your doctor, nurse, or pharmacist know if you still don’t understand what you need to do.
- You might say, “This is new to me. Will you please explain that to me one more time?”

Who Needs to Ask 3?

Everyone wants help with health information. You are not alone if you find things confusing at times. Asking questions helps you understand how to stay well or to get better.

The Ask Me 3 questions are designed to help you take better care of your health.

To learn more, visit www.npsf.org/askme3
Your Doctor, Nurse, and Pharmacist Want to Answer 3

Are you nervous to ask your health provider questions? Don’t be. You may be surprised to learn that your medical team wants you to let them know that you need help.

Like all of us, doctors have busy schedules. Yet your doctor wants you to know:
- All you can about your condition.
- Why this is important for your health.
- Steps to take to keep your condition under control.

Asking these questions can help me:
- Take care of my health
- Prepare for medical tests
- Take my medicines the right way
- I don’t need to feel rushed or embarrassed if I don’t understand something. I can ask my doctor again.
- When I Ask 3, I am prepared. I know what to do for my health.

Bring your medicines with you the next time you visit your doctor or pharmacist. Or, write the names of the medicines you take on the lines below.

Like many people, you may see more than one doctor. It is important that your doctors know all the medicines you are taking so that you can stay healthy.

Write Your Doctor’s Answers to the 3 Questions Here:

1. What is my main problem?

2. What do I need to do?

3. Why is it important for me to do this?

Ask Me 3™ is an educational program provided by the Partnership for Clear Health Communication at the National Patient Safety Foundation™ – a coalition of national organizations that are working together to promote awareness and solutions around the issue of low health literacy and its effect on safe care and health outcomes.

www.npsf.org/askme3
Attribute Checklist
Source: Area Health Education Center, Biddeford, Maine

Title of material: ______________________________________________________________

**Directions**: Place a check next to each item that meets the described attribute.

**Organization**
- □ 1. The cover is attractive. It indicates the core content and intended audience.
- □ 2. Desired behavior changes are stressed. “Need to know” information is stressed.
- □ 3. Not more than three or four main points are presented.
- □ 4. Headers and summaries are used to show organization and provide message repetition.
- □ 5. A summary that stresses what to do is included.

**Writing Style**
- □ 6. The writing is in conversational style, active voice.
- □ 7. There is little or no technical jargon.
- □ 8. Text is vivid and interesting. Tone is friendly.

**Appearance**
- □ 9. Pages or sections appear uncluttered. There is ample white space.
- □ 10. Lowercase letters used (capitals used only where grammatically needed).
- □ 11. There is a high degree of contrast between the print and the paper.
- □ 12. Print size is at least 12 point, serif type, and no stylized letters.
- □ 13. Illustrations are simple – preferably line drawings.
- □ 14. Illustrations serve to amplify the text.

**Appeal**
- □ 15. The material is culturally, gender, and age appropriate.
- □ 16. The material closely matches the logic, language, and experience of the intended audience.
- □ 17. Interaction is invited via questions, responses, suggested action, etc.

1. If you eat the entire container, how many calories will you eat?
   
   Answer: 1,000 is the only correct answer

2. If you are allowed to eat 60 grams of carbohydrates as a snack, how much ice cream could you have?
   
   Answer: Any of the following is correct: 1 cup (or any amount up to 1 cup), Half the container  Note: If patient answers “two servings,” ask “How much ice cream would that be if you were to measure it into a bowl.”

3. Your doctor advises you to reduce the amount of saturated fat in your diet. You usually have 42 g of saturated fat each day, which includes one serving of ice cream. If you stop eating ice cream, how many grams of saturated fat would you be consuming each day?
   
   Answer: 33 is the only correct answer

4. If you usually eat 2500 calories in a day, what percentage of your daily value of calories will you be eating if you eat one serving?
   
   Answer: 10% is the only correct answer

READ TO SUBJECT: Pretend that you are allergic to the following substances: Penicillin, peanuts, latex gloves, and bee stings.

5. Is it safe for you to eat this ice cream?
   
   Answer: No

6. (Ask only if the patient responds “no” to question 5): Why not?
   
   Answer: Because it has peanut oil.

Interpretation

Number of correct answers:

Score of 0-1 suggests high likelihood (50% or more) of limited literacy
Score of 2-3 indicates the possibility of limited literacy.
Score of 4-6 almost always indicates adequate literacy.
### Nutrition Facts

<table>
<thead>
<tr>
<th>Serving Size</th>
<th>½ cup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Servings per container</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Amount per serving</th>
<th></th>
<th>Fat Cal</th>
<th>120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories</td>
<td>250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>%DV</td>
<td></td>
<td></td>
<td>120</td>
</tr>
<tr>
<td>Total Fat</td>
<td>13g</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Sat Fat</td>
<td>9g</td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td>Cholesterol</td>
<td>28mg</td>
<td>12%</td>
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</tr>
<tr>
<td>Sodium</td>
<td>55mg</td>
<td>2%</td>
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</tr>
<tr>
<td>Total Carbohydrate</td>
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<td>12%</td>
<td></td>
</tr>
<tr>
<td>Dietary Fiber</td>
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<td></td>
</tr>
<tr>
<td>Sugars</td>
<td>23g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protein</td>
<td>4g</td>
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<td></td>
</tr>
</tbody>
</table>

*Percentage Daily Values (DV) are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

**Ingredients:** Cream, Skim Milk, Liquid Sugar, Water, Egg Yolks, Brown Sugar, Milkfat, Peanut Oil, Sugar, Butter, Salt, Carrageenan, Vanilla Extract.
RAPID ESTIMATE OF ADULT LITERACY IN MEDICINE (REALM)

Chart #  Examine date:

Name  Birth date:

REALM generated reading level:  Grade completed:

<table>
<thead>
<tr>
<th>List 1</th>
<th>List 2</th>
<th>List 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fat</td>
<td>Fatigue</td>
<td>Allergic</td>
</tr>
<tr>
<td>Flu</td>
<td>Pelvic</td>
<td>Menstrual</td>
</tr>
<tr>
<td>Pill</td>
<td>Jaundice</td>
<td>Testicle</td>
</tr>
<tr>
<td>Dose</td>
<td>Infection</td>
<td>Colitis</td>
</tr>
<tr>
<td>Eye</td>
<td>Exercise</td>
<td>Emergency</td>
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<tr>
<td>Stress</td>
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<tr>
<td>Smear</td>
<td>Prescription</td>
<td>Occupation</td>
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<td>Nerves</td>
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<td>Sexually</td>
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<tr>
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</tr>
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<td>Pregnancy</td>
<td>Inflammatory</td>
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<tr>
<td>Attack</td>
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<td>Bowel</td>
<td>Syphilis</td>
<td>Anemia</td>
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<tr>
<td>Asthma</td>
<td>Hemorrhoids</td>
<td>Obesity</td>
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<tr>
<td>Rectal</td>
<td>Nausea</td>
<td>Osteoporosis</td>
</tr>
<tr>
<td>Incest</td>
<td>Directed</td>
<td>Impetigo</td>
</tr>
</tbody>
</table>

# of (+) Responses in List 1:  # of (+) Responses in List 2:  # of (+) Responses in List 3:

LEGEND: (+)=Correct  (-)=Word not attempted  (/)=Mispronounced word

Raw Score:
The REALM-R is a word recognition test consisting of 11 items used to identify people at risk for poor literacy skills (Bass et al, 2003). Words that appear in this test are:

<table>
<thead>
<tr>
<th>Fat</th>
<th>Osteoporosis</th>
<th>Anemia</th>
<th>Colitis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flu</td>
<td>Allergic</td>
<td>Fatigue</td>
<td>Constipation</td>
</tr>
<tr>
<td>Pill</td>
<td>Jaundice</td>
<td>Directed</td>
<td></td>
</tr>
</tbody>
</table>

Fat, Flu, and Pill are not scored and are positioned at the beginning of the REALM-R to decrease test anxiety and enhance confidence.

SPECIAL CONSIDERATIONS WHEN USING THE REALM-R

1. Examiner Sensitivity
   Many adults with low literacy skills will attempt to hide their deficiency. Ensure that you approach each person with respect and compassion. You may need to provide encouragement and reassurance. Many people with low literacy feel ashamed. Be sensitive.

2. Visual Acuity
   If the person wears glasses, ask them to wear the glasses for the test. The word list should be set in 18-point font.

3. Pronunciation
   Dictionary pronunciation is the scoring standard.

4. Dialect, Accent, or Articulation Problems
   Count a word as correct if it is pronounced correctly and no additions or deletions have been made to the beginning or ending of the word. For example, a person who says “jaundiced” would not receive credit for the word “jaundice”; “directs” would not receive credit for the word “directed”. Words pronounced with a dialect or accent should be counted as correct, provided there are no additions or deletions to the word. Particular attention should be paid to persons who use English as a second language.

5. Limitations of the REALM-R
   The REALM-R can only be used for persons who read English; it has not been validated in other languages.

Source: adultmeducation.com
ADMINISTRATION

1. Print the list in 18-point font or greater.

2. Introduce the REALM-R to the person. The words “read” and “test” should be avoided when introducing and administering the REALM-R. The following statement can be used to introduce the REALM-R:

   “Sometimes in the health care system, medical words are used that many people are not familiar with. I would like to get an idea of what medical words you are familiar with.”

3. Give the person the list of the REALM-R words. Point to the first word and ask the person read the 11 words out loud. Be sensitive to dialect, accent, and articulation problems.

4. If the person takes more than five seconds on a word, they should be encouraged to move on to the next word (e.g., say “Let’s try the next word.”) If the person begins to miss every word or appears to be struggling or frustrated, tell them, “Just look down the list and say the words you know.”

SCORING

Use the REALM-R Examiner Record to record the outcome of the test. The words Fat Flu and Pill are not scored. Count as an error any word that is not attempted or is mispronounced. Place a check mark (“√”) next to each word the person pronounces correctly, and an “X” next to each word the person does not attempt or mispronounces. Those with a score of 6 or less should be considered to be at risk for poor health literacy.

Source: adultmeducation.com
SAM Evaluation Criteria

1. **Content**

   **A. Purpose**
   - Superior: Purpose is explicitly stated in title, or cover illustration, or introduction
   - Adequate: Purpose is not explicit. It is implied, or multiple purposes are stated.
   - Not suitable: No purpose is stated in the title, cover illustration, or introduction

   **B. Content topics**
   - Superior: Thrust of the material is application of knowledge/skills aimed at desirable reader behavior rather than nonbehavior actors.
   - Adequate: At least 40 percent of content topics focus on desirable behaviors or actions.
   - Not suitable: Nearly all topics are focused on nonbehavior facts.

   **C. Scope**
   - Superior: Scope is limited to essential information directly related to the purpose. Experience shows it can be learned in time allowed.
   - Adequate: Scope is expanded beyond the purpose; no more than 40 percent is nonessential information. Key points can be learned in time allowed.
   - Not suitable: Scope is far out of proportion to the purpose of time allowed.

   **D. Summary and review**
   - Superior: A summary is included and retells the key messages in different words/examples.
   - Adequate: Some key ideas are reviewed.
   - Not suitable: No summary or review is included.

2. **Literacy demand**

   **A. Reading grade level (Fry Formula)**
   - Superior: 5th-grade level or lower (t years of schooling level)
   - Adequate: 6th, 7th, or 8th-grade level (6-8 years or schooling)
   - Not suitable: 9th-grade level and above (9 years or more of school)

   **B. Writing style**
   - Superior: Both factors: (1) mostly conversational style and active voice; (2) Simple sentences are used extensively; few sentences contain embedded information.
   - Adequate: (1) About 50% of the text uses conversational style and active voice; (2) less than half of the sentences have embedded information.
   - Not suitable: (1) Passive voice throughout; (2) Over half of the sentences have extensive embedded information.

   **C. Vocabulary**
   - Superior: All three factors: (1) Common words are used nearly all of the time; (2) Technical, concept, category, value judgment (CCVJ) words are explained by examples; (3) Imagery words are used as appropriate for content.
   - Adequate: (1) Common words are frequently used; (2) Technical and CCVJ words are sometimes explained by examples; (3) Some jargon or math symbols are included.
   - Not suitable: Two or more factors: (1) Uncommon words are frequently used in lieu of common words; (2) No examples are given for technical and CCVJ words; (3) Extensive jargon.
D. **In sentence construction, the context is given before new information**
   - **Superior** Consistently provides context before presenting new information
   - **Adequate** provides context before new information about 50 percent of the time
   - **Not suitable** Context is provided last or no context is provided.

E. **Learning enhancement by advance organizers (road signs)**
   - **Superior** Nearly all topics are preceded by an advance organizer (a statement that tells what is coming next).
   - **Adequate** About 50 percent of the topics are preceded by advance organizers.
   - **Not suitable** Few or no advance organizers are used.

3. **Graphics (illustrations, lists, tables, charts, graphs)**

   A. **Cover graphic**
      - **Superior** the cover graphic is (1) friendly, (2) attracts attention; (3) clearly portrays the purpose of the material to the intended audience.
      - **Adequate** The cover graphic has one or two of the superior criteria.
      - **Not suitable** The cover graphic has none of the superior criteria.
   
   B. **Type of illustrations**
      - **Superior** Both factors: (1) Simple, adult-appropriate, line drawings/sketches are used; (2) Illustrations are likely to be familiar to the viewers.
      - **Adequate** One of the superior factors is missing.
      - **Not suitable** None of the superior factors are present.
   
   C. **Relevance of illustrations**
      - **Superior** Illustrations present key messages visually so the reader/view can grasp the key ideas from the illustrations alone. No distractions.
      - **Adequate** (1) Illustrations include some distractions. (2) Insufficient use of illustrations.
      - **Not suitable** One factor: (1) confusing or technical illustrations (nonbehavior related). (2) No illustrations or an overload of illustrations.

D. **Graphics: lists, tables, graphics, charts, geometric forms**
   - **Superior** Step-by-step directions, with an example, are provided that will build comprehension and self-efficacy
   - **Adequate** “How-to” directions are too brief for reader to understand and use the graphic without additional counseling.
   - **Not suitable** Graphics are presented without explanation.

E. **Captions are used to “announce”/explain graphics**
   - **Superior** Explanatory captions with all or nearly all illustrations and graphics.
   - **Adequate** Brief captions used for some illustrations and graphics.
   - **Not suitable** Captions are not used.

4. **Layout and typography**

   A. **Layout**
      - **Superior** At least five of the following eight factors are present:
         1. Illustrations are on the same page adjacent to the related text.
         2. Layout and sequence of information are consistent, making it easy for the patient to predict the flow of information.
         3. Visual cuing devices (shading, boxes, arrows) are used to direct attention to specific points or key content.
4. Adequate white space is used to reduce appearance of clutter.
5. Use of color supports and is not distracting to the message. Viewers need not learn color codes to understand and use the message.
6. Line length is 30-50 characters and spaces.
7. There is high contrast between type and paper.
8. Paper has non-gloss or low-gloss surface.

Adequate At least three of the superior factors are present
Not suitable (1) Two (or less) of the superior factors are present. (2) Looks uninviting or discouragingly hard to read.

B. Typography
Superior The following four factors are present:
1. Text type is in uppercase and lowercase serif (best) or sans-serif
2. Type size is at least 12 point
3. Typographic cues (bold, size, color) emphasize key points.
4. No ALL CAPS for long headers or running text.

Adequate Two of the superior factors are present
Not suitable One or none of the superior factors are present. Or, six or more type styles and sizes are used on a page.

C. Subheadings or “chunking”
Superior (1) lists are grouped under descriptive subheadings or “chunks.” (2) No more than five items are presented without a subheading.
Adequate No more than seven items are presented without a subheading.
Not suitable More than seven items are presented without a subheading.

5. Learning stimulation and motivation

A. Interaction included in text and/or graphic
Superior Problems or questions presented for reader responses.
Adequate Question-and-answer format used to discuss problems and solutions (passive interaction).
Not suitable No interactive learning stimulation provided.

B. Desired behavior patterns are modeled, shown in specific terms
Superior Instruction models specific behaviors or skills.
Adequate Information is a mix of technical and common language that the reader may not easily interpret in terms of daily living.
Not suitable Information is presented in nonspecific or category terms such as the food groups.

C. Motivation
Superior Complex topics are subdivided into small parts so that readers may experience small successes in understanding or problem solving, leading to self-efficacy.
Adequate Some topics are subdivided to improve the readers’ self-efficacy.
Not suitable No partitioning is provided to create opportunities for small successes.

3
6. Cultural appropriateness

A. Cultural match: Logic, language, experience (LLE)
   Superior    Central concepts/ideas of the material appear to be culturally similar to the LLE of the target culture.
   Adequate    Significant match in LLE for 50 percent of the central concepts
   Not suitable Clearly a cultural mismatch in LLE.

B. Cultural image and examples
   Superior    Images and examples present the culture in positive ways.
   Adequate    Neutral presentation of cultural images or foods.
   Not suitable Negative image such as exaggerated or caricatured cultural characteristics, actions, or examples.

Total Score ___________ (44 points maximum = 100%)
[Subtract 2 points for each N/A from 44 total and obtain percentage.]

Interpretation:

70-100 percent    superior material
40-69 percent      adequate material
0-39 percent       not suitable material
Suitability Assessment of Materials (SAM) - Scoring Sheet

2 points for superior rating
1 point for adequate rating
0 points for not suitable rating
N/A if the factor does not apply to this material

<table>
<thead>
<tr>
<th>Factor to be Rated</th>
<th>Score</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Content</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Purpose is evident</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) Content about behaviors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c) Scope is limited</td>
<td></td>
<td></td>
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<tr>
<td>(d) Summary or review included</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Literacy demand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Reading grade level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) Writing style, active voice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c) Vocabulary uses common words</td>
<td></td>
<td></td>
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<tr>
<td>(d) Context is given first</td>
<td></td>
<td></td>
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<tr>
<td>(e) Learning aids via “road signs”</td>
<td></td>
<td></td>
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<tr>
<td>3. Graphics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Cover graphic shows purpose</td>
<td></td>
<td></td>
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<tr>
<td>(b) Type of graphics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c) Relevance of illustrations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(d) List, tables, etc., explained</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(e) Captions used for graphics</td>
<td></td>
<td></td>
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<tr>
<td>4. Layout and typography</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Layout factors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) Typography</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c) Subheads (“chunking”) used</td>
<td></td>
<td></td>
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<tr>
<td>5. Learning stimulation, motivation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Interaction used</td>
<td></td>
<td></td>
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<tr>
<td>(b) Behaviors are modeled and Specific</td>
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<td></td>
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<tr>
<td>(c) Motivation – self-efficacy</td>
<td></td>
<td></td>
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<tr>
<td>6. Cultural appropriateness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Match in logic, language, experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) Cultural image and examples</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total SAM score: ______
Total possible score: ______ Percent score: ________%

To calculate the SMOG (Simplified Measure of Gobbledygook) reading grade level, begin with the entire written work that is being assessed, and follow these four steps:

1. Count off 10 consecutive sentences near the beginning, in the middle, and near the end of the text.
2. From this sample of 30 sentences, circle all of the words containing three or more syllables (polysyllabic), including repetitions of the same word, and total the number of words circled.
3. Estimate the square root of the total number of polysyllabic words counted. This is done by finding the nearest perfect square and taking its square root.
4. Finally, add a constant of three to the square root. This number gives the SMOG grade, or the reading grade level that a person must have reached if he or she is to fully understand the text being assessed.

A few additional guidelines will help to clarify these directions:

- A sentence is defined as a string of words punctuated with a period (.), an exclamation point (!), or a question mark (?).
- Hyphenated words are considered as one word.
- Numbers that are written out should also be considered, and if in numeric form in the text they should be pronounced to determine if they are polysyllabic.
- Proper nouns, if polysyllabic, should be counted, too.
- Abbreviations should be read as unabbreviated to determine if they are polysyllabic.

Not all pamphlets, fact sheets, or other printed materials contain 30 sentences. To test a text that has fewer than 30 sentences:

1. Count all of the polysyllabic words in the text.
2. Count the number of sentences.
3. Find the average number of polysyllabic words per sentence as follows: 
   \[
   \text{Average} = \frac{\text{Total # of polysyllabic words}}{\text{Total # of sentences}}
   \]
4. Multiply that average by the number of sentences short of 30.
5. Add that figure on to the total number of polysyllabic words.
6. Find the square root and add the constant of 3.

Perhaps the quickest way to administer the SMOG grading test is by using the SMOG conversion table. Simply count the number of polysyllabic words in your chain of 30 sentences and look up the approximate grade level on the chart (see page 3).

An example of how to use the SMOG Readability Formula and the SMOG Conversion Table is provided on the next page.
In Controlling Cancer—You Make a Difference
The key is action. You can help protect yourself against cancer. Act promptly to:

Prevent some cancers through simple changes in lifestyle.

Find out about early detection tests in your home.

Gain peace of mind through regular medical checkups.

Cancers You Should Know About
Lung Cancer is the number one cancer among men, both in the number of new cases each year (79,000) and deaths (70,500). Rapidly increasing rates are due mainly to cigarette smoking. By not smoking, you can largely prevent lung cancer. The risk is reduced by smoking less, and by using lower tar and nicotine brands. But quitting altogether is by far the most effective safeguard. The American Cancer society offers Quit Smoking Clinics and self-help materials.

Colorectal Cancer is second in cancer deaths (25,100) and third in new cases (49,000). When it is found early, chances of cure are good. A regular general physical usually includes a digital examination of the rectum and a guaiac slide test of a stool specimen to check for invisible blood. Now there are also Do-It-Yourself Guaiac Slides for home use. Ask your doctor about them. After you reach the age of 40, your regular check-up may include a “Procto,” in which the rectum and part of the colon are inspected through a hollow, lighted tube.

Prostate Cancer is second in the number of new cases each year (57,000), and third in deaths (20,600). It occurs mainly in men over 60. A regular rectal exam of the prostate by your doctor is the best protection.

A Check-Up Pays Off
Be sure to have a regular, general physical including an oral exam. It is your best guarantee of good health.

How Cancer Works
If we know something about how cancer works, we can act more effectively to protect ourselves against the disease. Here are the basics:

1. Cancer spreads; time counts—Cancer is uncontrolled growth of abnormal cells. It begins small and if unchecked, spreads. If detected in an early, local stage, the chances for cure are best.
2. Risk increases with age—This is not a reason to worry, but a signal to have more regular, thorough physical check-ups. Your doctor or clinic can advise you on what tests to get and how often they should be performed.
3. What you can do—don’t smoke and you will sharply reduce your chances of getting lung cancer. Avoid too much sun, a major cause of skin cancer. Learn cancer’s Seven Warning Signals, listed on the back of this leaflet, and see your doctor promptly if they persist. Pain is usually a late symptom of cancer; don’t wait for it.

Know Cancer’s Seven Warning Signals

1. Change in bowel or bladder habits.
2. A sore that does not heal.
3. Unusual bleeding or discharge.
4. Thickening or lump in breast or elsewhere.
5. Indigestion or difficulty in swallowing.
6. Obvious change in a wart or mole.
7. Nagging cough or hoarseness.

If you have a warning signal, see your doctor.

Unproven Remedies
Beware of unproven cancer remedies. They may sound appealing, but they are usually worthless. Relying on them can delay good treatment until it is too late. Check with your doctor or the American Cancer Society.

More Information
For more information of any kind about cancer—free of cost—contact your local unit of the American Cancer Society.
We have calculated the reading grade level for this example.

Compare your results to ours, and then check both with the SMOG conversion table:

**Readability Test Calculations**

| Total Number of Polysyllabic Words | =38 |
| Nearest Perfect Square              | =36 |
| Square Root                         | = 6 |
| Constant                            | = 3 |
| SMOG Reading Grade Level            | = 9 |

**SMOG Conversion Table**

<table>
<thead>
<tr>
<th>Total Polysyllabic Word Counts</th>
<th>Approximate Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>4</td>
</tr>
<tr>
<td>3-6</td>
<td>5</td>
</tr>
<tr>
<td>7-12</td>
<td>6</td>
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<tr>
<td>13-20</td>
<td>7</td>
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<tr>
<td>21-30</td>
<td>8</td>
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<td>31-42</td>
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<tr>
<td>43-56</td>
<td>10</td>
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<td>57-72</td>
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<tr>
<td>73-90</td>
<td>12</td>
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<tr>
<td>91-110</td>
<td>13</td>
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<tr>
<td>111-132</td>
<td>14</td>
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<td>133-156</td>
<td>15</td>
</tr>
<tr>
<td>157-182</td>
<td>16</td>
</tr>
<tr>
<td>183-210</td>
<td>17</td>
</tr>
<tr>
<td>211-240</td>
<td>18</td>
</tr>
</tbody>
</table>


**Developed by: Harold C. McGraw, Office of Educational Research Baltimore County Schools, Towson, Maryland.
PASSAGE A

Your doctor has sent you to have a __________ X-ray.
   a. stomach
   b. diabetes
   c. stitches
   d. germs

You must have an __________ stomach when you come for _____.
   a. asthma            a. is.
   b. empty             b. am.
   c. incest            c. if.
   d. anemia            d. it.

The X-ray will ______ from 1 to 3 ______ to do.
   a. take a. beds
   b. view b. brains
   c. talk c. hours
   d. look d. diets

THE DAY BEFORE THE X-RAY.

For supper have only a ______ snack of fruit, ______ and jelly,
   a. little a. toes
   b. broth b. throat
   c. attack c. toast
   d. nausea d. thigh

with coffee or tea.
After ___________, you must not ________ or drink
a. minute, a. easy
b. midnight, b. ate
c. during, c. drank
d. before, d. eat

anything at ________ until after you have ________ the X-ray.
  a. ill a. are
  b. all b. has
  c. each c. had
  d. any d. was

THE DAY OF THE X-RAY.

Do not eat __________.
  a. appointment.
  b. walk-in.
  c. breakfast.
  d. clinic.

Do not ________ , even ____________.
  a. drive, a. heart
  b. drink, b. breath
  c. dress, c. water
  d. dose, d. cancer

If you have any __________, call the X-ray ____________ at 616-4500.
  a. answers, a. Department
  b. exercises, b. Sprain
  c. tracts, c. Pharmacy
  d. questions, d. Toothache

Available from Peppercorn Books. www.peppercornbooks.com
PASSAGE B

I agree to give correct information to ________ if I can receive Medicaid.

a. hair  
b. salt  
c. see  
d. ache

I ________ to provide the county information to ___________ any

a. agree  
b. probe  
c. send  
d. gain

statements given in this ______________ and hereby give permission to

a. emphysema  
b. application  
c. gallbladder  
d. relationship

the ______________ to get such proof. I ____________ that for

a. inflammation  
b. religion  
c. iron  
d. county

Medicaid I must report any _____________ in my circumstances

a. changes  
b. hormones  
c. antacids  
d. charges

within ________ (10) days of becoming ________ of the change.

a. three  
b. one  
c. five  
d. ten  
a. award  
b. aware  
c. away  
d. await
I understand __________ if I DO NOT like the ____________ made on my
   a. thus                      a. marital
   b. this                      b. occupation
   c. that                      c. adult
   d. than                      d. decision

case, I have the ____________ to a fair hearing. I can ____________ a
   a. bright                    a. request
   b. left                      b. refuse
   c. wrong                     c. fail
   d. right                     d. mend

hearing by writing or ____________ the county where I applied.
   a. counting
   b. reading
   c. calling
   d. smelling

If you __________ TANF for any family ____________, you will have to
   a. wash a. member,
   b. want b. history,
   c. cover c. weight,
   d. tape d. seatbelt,

________ a different application form. ____________, we will use
   a. relax a. Since,
   b. break b. Whether,
   c. inhale c. However,
   d. sign d. Because,

the ____________ on this form to determine your ____________ .
   a. lung a. hypoglycemia.
   b. date b. eligibility.
   c. meal c. osteoporosis.
   d. pelvic d. schizophrenia.
PASSAGE C

It has been explained to _______ that during the course of the

a. my
b. me
c. he
d. she

_____________ or procedure, unforeseen conditions may be ___________

a. syphilis
b. hepatitis
c. colitis
d. operation

that necessitate an extension of the __________ procedure(s) or

a. appendix
b. another

c. original
d. addict

different procedure(s) than those _______ forth in paragraph 2.

a. get
b. set
c. see
d. go

I, therefore, ___________ and request that the above named

a. exercise
b. authorize
c. energize
d. pressurize

_____________ , his assistants or attending physicians ____________ such

a. infection
b. pregnant
c. insurance
d. physician

a. perform
b. smear
c. onset
d. stress

Available from Peppercorn Books. www.peppercornbooks.com
procedures as are necessary and ______________ in the exercise of professional judgment.
   a. undesirable
   b. emergency
   c. desirable
   d. diagnosis

The authority ____________ under this Paragraph 3 shall ____________
   a. granted    a. pretend
   b. treated    b. extend
   c. tested     c. recede
   d. X-rayed    d. proceed

to treating all conditions that ____________ treatment and are not known
   a. reason
   b. refer
   c. require
   d. relate

________ the time the operation or ____________ is commenced.
   a. us    a. cholesterol
   b. be    b. menopause
   c. or    c. gonorrhea
   d. at    d. procedure
Using Readability Formulas

Readability in terms of U.S. School grade levels can be determined by formula. Formulas, for the most part, are applicable to running text but not to lists, charts and tables. The majority of formulas establish readability based on two factors:

- The number of hard words in a sample – the more hard words, the more syllables in the sample and the higher the readability level.

- The average length of sentences – the longer the sentences, the more words in the average sentence and the higher the readability level.

While many formulas – both manual and computerized – exist, Pfizer has chosen to use the manual Fry formula.

Fry was selected because it:
- Is easy to use and takes only about 15 to 20 minutes to obtain results.
- Uses reasonable small sample sizes (100 words), so it is suitable for both short and long documents.
- Reveals which types of words and sentences are difficult
- Is well recognized within the reading community.
- Is not copyrighted.

Fry specifies sample sizes of 100 words each. Except for very short pieces, three or more samples are selected and then averaged. The reason for selecting three samples is that the readability levels are often not uniform throughout the text. One could be misled if only one sample were used.

Using the Fry Formula

Directions:

1. Select three 100-word passages from the material you wish to test. Count out exactly 100 words for each passage, starting with the first work of a sentence (omit headings). If you are testing a very short pamphlet that may have on a few hundred words, select a single 100-word sample to test.

   Readability levels may vary considerably from one part of your materials to another. Therefore, select the three samples from different content topics, if possible.

   Additional Information:
   - Count proper nouns. Hyphenated words count as one word.
   - A word is defined as a group of symbols with a space on either side (i.e. “IRA,” “1994,” and “&” are each one word.)

2. Count the number of sentences in each 100 words, estimating the fractional length of the last sentence to the nearest 1/10. For example, if the 100th word occurs five words into a 15-word sentence, the fraction of the sentence is 5/15 or 1/3 or 0.3.
3. Count the total number of syllables in each 100-word passage. You can count by making a small check mark over each syllable. For initializations (e.g. IRA) and numerals (e.g. 1994), count one syllable for each symbol. So, “IRA” = three syllables and “1994” = four syllables.

4. Calculate the average number of sentences and the average number of syllables from the three passages. This is done by dividing the totals obtained from the three samples as shown in Table 1.

<table>
<thead>
<tr>
<th></th>
<th>Number of Sentences</th>
<th>Number of Syllables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st 100 words</td>
<td>5.9</td>
<td>124</td>
</tr>
<tr>
<td>2nd 100 words</td>
<td>4.8</td>
<td>141</td>
</tr>
<tr>
<td>3rd 100 words</td>
<td>6.1</td>
<td>158</td>
</tr>
<tr>
<td>Totals</td>
<td>16.8</td>
<td>423</td>
</tr>
<tr>
<td>Divide totals by 3</td>
<td>5.6 average</td>
<td>141 average</td>
</tr>
</tbody>
</table>

5. Refer to the Fry graph.

On the horizontal axis, find the line for the average number of syllables. On the vertical axis, find the line for the average number of sentences. The readability level of the material is found at the point where the two lines intersect. In this example, the readability level is 8th grade.
During the months before your baby is born, your own health as an expectant mother is extremely important and can affect the health of your baby. Get regular checkups, exercise, eat healthy foods and don’t smoke, drink alcohol, or use drugs. These are the most important things you can do for both you and your baby. It is important that you talk with your partner, your family and friends about ways to handle all the changes that will come into your life after the baby is born. Keep all doctor appointments before your baby is born. Remember to take your [prenatal vitamins if your doctor prescribes them.]

Your baby still needs to be fed every 2 or 3 hours. Until your baby is 12 months old, breast milk or fortified formula will be his main source of nutrition. Do not feed your baby honey until after the first year because it can cause botulism, or food poisoning. Over the next few months, as your baby is becoming more aware of the world, feeding may get more difficult. If your baby pulls away from your breast or bottle often during feeding, try feeding in a quiet, darkened room. Do not nurse your baby to sleep or put him [to bed with a bottle.]

Your baby is using her entire body to communicate. If your baby sees something she likes, she will crawl toward it. Your baby may be trying to stand and will try to walk over the next few months. Along with this mobility comes new opinions. Your baby may protest if you leave the room or feed her new foods. She will test you by reaching for things you’ve taken away from her. Continue to use distraction and a firm voice for discipline. At this stage, your baby wants to find out how things work and will push on a [toy truck to make the wheels turn and shake a rattle to make a noise.]
<table>
<thead>
<tr>
<th></th>
<th>Number of Sentences</th>
<th>Number of Syllables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; 100 words</td>
<td>5.3</td>
<td>141</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; 100 words</td>
<td>5.6</td>
<td>140</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; 100 words</td>
<td>7.5</td>
<td>130</td>
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<tr>
<td>Totals</td>
<td>18.4</td>
<td>411</td>
</tr>
<tr>
<td>Divide totals by 3</td>
<td>6.1 average</td>
<td>137 average</td>
</tr>
</tbody>
</table>

Readability Level: 7<sup>th</sup> Grade
Example 2

1st 100 words

How do I check my blood sugar levels?

Wash my hands with soap and water. Take a test strip out of the bottle and slide it into the machine. Make sure that I close the bottle of testing strips right away, or my testing strips will not work right. Use a needle from my diabetes supplies to stick the side of my finger to obtain a drop of blood. Place the drop of blood on the test strip. Within one minute, the machine will show a number on the screen that indicates my blood sugar level. Write my blood sugar [level in my Passport to Health.]

2nd 100 words

The food that I eat gives me energy. When my blood sugar is high I have low energy and I feel tired. That is because my body is not using sugar the right way. Insulin is like a key that my body uses to unlock the sugar in my blood so my cells can use it for energy. When I have diabetes, my insulin key does not work right and locks the sugar in the blood so it cannot be used for energy. When I have high blood sugar, I can have one or more symptoms. These include thirst, blurred [vision and hunger.]

3rd 100 words

I will learn about the other things I need to do to control my diabetes. These things include being active and keeping all my visits with my doctor. I should ask my doctor any questions I have about diabetes, such as what the long term problems are. I will learn what my medicines are and how I should take them. I will learn how to involve my family in my diabetes care. Physical activity can help keep my blood sugar under control. It will also help me lose weight or maintain a healthy weight. Exercise can help my body use [my medicines better.]

Syllables

Sentences
## Example 2

<table>
<thead>
<tr>
<th></th>
<th>Number of Sentences</th>
<th>Number of Syllables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; 100 words</td>
<td></td>
<td></td>
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<tr>
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<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; 100 words</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divide totals by 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Readability Level:**

(Answer: 5<sup>th</sup> grade)