Health Literacy: A Primer for Pharmacy Technicians

Tiffaney Threatt, PharmD, CDE
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Faculty Disclosures

• *Tiffaney Threatt* has no actual or potential conflicts of interest in relation to this presentation.
Learning Objectives:

• Describe current prevalence and statistics of health literacy in the United States

• Recognize the impact of limited health literacy on medication use, patient outcomes, and healthcare costs

• List risk factors, common signs, and formal assessment tools that may suggest a patient has limited health literacy

• Discuss strategies for improving communication and health outcomes of patients with limited health literacy
Health Literacy Defined

• “The ability of an individual to obtain, process, and understand basic health information and services needed to make appropriate health decisions and follow instructions for treatment.”

  - U.S. Department of Health and Human Services

Or, in plain language, health literacy is:
A person being able to understand and take the right action to make good health choices.
How doog are your htlaeht ycaretil slliks?

Your naicisyhp has dednemmocer that you have a ypocsonoloc. Ypocsonoloc is a test for noloc recnac. It sevlovni gnitresni a elbixelf gniweiv epocs into your mutcer. You must drink a laiceps diuqil the thgin erofeb the noitanimaxe to naelc out your noloc.
Dr. Richard Carmona, Former U.S. Surgeon General

“Health care professionals DO NOT recognize that patients do not understand the health information we are trying to communicate. We must close the gap between what health care professionals know and what the rest of America understands.”
We Expect Patients to...

• Prevent
  – Eat healthy, exercise regularly, use sunscreen, obtain appropriate dental and eye screenings, etc.)

• Read
  – Labels & medication information inserts, names of medications, dosage instructions, interpret between the lines (twice daily, four times daily)

• Listen
  – Explanations and directions
We Expect Patients to...

• Talk
  – Ask questions or present problems to busy professionals
  – Describe new feelings (side effects, etc.)

• Track
  – Health status (glucose testing, peak flow meter)
  – Watch for side effects and seek help as needed
  – Take action for missed dose

• Calculate
  – Measure, count pills, determine time for refill
  – Use clocks/calendars to determine dosing time
Make an Origami Cup

- Start with your square paper and fold this paper in half. Fold the top corner down to the baseline. Crease well and unfold. Fold the bottom left hand corner of the paper to the crease line just made. Now fold the bottom right hand corner up to the opposite side. Fold the front flap downwards. Now fold the back top flap in the same manner. Open out and you will have a finished drinking cup.
HEALTH LITERACY IN AMERICA

http://rabinmartin.com/insight/save-lives-embrace-health-literacy/
Polling Question #1

According to the 2003 NAAL survey, what percentage of patients had below basic and basic health literacy?

A. 2%
B. 22%
C. 14%
D. 36%
Polling Question #2

The average American reads at what grade level?

A. 5\textsuperscript{th} – 6\textsuperscript{th} grade
B. 8\textsuperscript{th} – 9\textsuperscript{th} grade
C. 10\textsuperscript{th} grade
D. 12\textsuperscript{th} grade
Adults’ Skills

A majority of U.S. adults have difficulty using print materials to accomplish everyday tasks such as:

- Calculate a 15% tip on a bill
- Use a bus schedule to determine time of arrival
- Use labels to compare and contrast safety ratings on a piece of equipment such as a bicycle helmet
- Read an over-the-counter medicine box to determine how much medicine to give a child of a specified weight and age
- Determine the point-of-view [bias] in an editorial

National Assessment of Adult Literacy (NAAL)

  - 19,000 adults age 16 and older
  - Assessed reading AND math skills
    - Focused on the ability to understand and use text, documents, and numbers related to commonly encountered health care situations
      - Identified 36% of adult Americans (90 million) as having health literacy below what is required to understand typical medical information
      - Average American reads on the 8th to 9th grade level
Health Literacy in America:
Results from the NAAL (2003)

12% **Proficient:** Define medical term from complex document, Calculate share of employee’s health insurance costs

53% **Intermediate:** Determine healthy weight from BMI chart, Interpret prescription and over-the-counter drug labels

22% **Basic:** Understand simple patient education handout

14% **Below Basic:** Circle date on appointment slip, Understand simple pamphlet about pre-test instructions

Health Literacy in America
(Continued)

• Williams and colleagues evaluated functional health literacy of patients at two urban hospitals (Atlanta, GA and Torrance, CA) that serve vulnerable populations.

• INADEQUATE health literacy
  – 35% of all patients in Atlanta
  – 42% of Spanish-speaking patients in California
  – 12.5% of English-speaking patients in California

• If including MARGINAL health literacy
  – 47% of all patients in Atlanta
  – 62% of Spanish-speaking patients in California
  – 22% of English-speaking patients in California
  – 48%-80% of patients age ≥ 60 years

Health Literacy in America
(Continued)

– Study of community-dwelling Medicare enrollees in a national managed care organization.
  • 33% respondents with marginal or inadequate health literacy
– Systematic review
  • Examined 85 studies/31,129 patients
  • Prevalence of low health literacy up to 68%

Populations at Risk for Limited Health Literacy

- Elderly (65 years and older)
- Ethnic minorities (Hispanic, African American)
- Low income/Unemployed
- Recent immigrants with limited English proficiency
- Persons with English as a second language
- Persons with limited education (did not finish high school)
- Multiple chronic diseases
- Rural geographic location

http://med.fsu.edu/userFiles/file/ahec_health_clinicians_manual.pdf
IMPACT OF LIMITED HEALTH LITERACY

Image: https://www.cdc.gov/healthliteracy/learn/understanding.html
Polling Question #3

Limited health literacy has been associated with:

A. No change in health outcomes
B. Decreased utilization of ER services
C. Increased use of preventative services
D. Increased feelings of shame and avoidance behaviors
Polling Question #4

Patients with limited health literacy may have difficulty with which of the following?

A. Understanding medication directions
B. Understanding and completing forms at the pharmacy
C. Refilling prescriptions on time
D. All of the above
Low Health Literacy and Medication Use

↓ Ability to identify their own medications
   12-18 x greater odds

↓ Understanding of how to take medications
   Take med every 6 hours 52% correct
   Improved understanding over
   “Take 1 tablet 4 times a day”
   Take med on empty stomach 46% correct

↓ Understanding of drug mechanisms and side effects
   Warfarin works by thinning blood 70% correct
   Bleeding/bruising most common SE 49% correct

↑ Misinterpretation of common warning labels
   3-4 x more likely to misinterpret

<table>
<thead>
<tr>
<th><strong>Misinterpretation of Warning Labels</strong></th>
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<tbody>
<tr>
<td><img src="image.png" alt="Icon: Take with Food" /></td>
</tr>
<tr>
<td><strong>Take with Food</strong></td>
</tr>
<tr>
<td><img src="image.png" alt="Icon: Do Not Chew or Crush" /></td>
</tr>
<tr>
<td><strong>Do Not Chew or Crush, Swallow Whole</strong></td>
</tr>
<tr>
<td><img src="image.png" alt="Icon: Avoid Prolonged Exposure" /></td>
</tr>
<tr>
<td><strong>Avoid Prolonged or Excessive Exposure to Direct and/or Artificial Sunlight While Taking This Medication</strong></td>
</tr>
<tr>
<td><img src="image.png" alt="Icon: Do Not Drink" /></td>
</tr>
<tr>
<td><strong>Do Not Drink Alcoholic Beverages When Taking This Medication</strong></td>
</tr>
<tr>
<td><img src="image.png" alt="Icon: Do Not Take Dairy" /></td>
</tr>
<tr>
<td><strong>Do Not Take Dairy Products, Antacids, or Iron Preparations Within One Hour of This Medication</strong></td>
</tr>
<tr>
<td><img src="image.png" alt="Icon: Take with Water" /></td>
</tr>
<tr>
<td><strong>Medication Should Be Taken with Plenty of Water</strong></td>
</tr>
<tr>
<td><img src="image.png" alt="Icon: For External Use Only" /></td>
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<td><strong>For External Use Only</strong></td>
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Low Health Literacy and Medication Use

Understanding of numerical information

If your blood test result for warfarin is just right when it is between 2.0 and 3.0, which of the following results would be “just right”? 29% correct

Medication adherence

Adverse drug events

Low Health Literacy and Medication Use

- Study of 395 hospital-based primary care patients in 3 states
- Objective: To test if more clear/explicit prescription directions could improve comprehension, especially among patients with limited literacy.
- Results:
  - 46% did not understand instructions on 1 or more labels
  - 38% with “adequate” literacy missed at least 1 label

Low Health Literacy and Medication Use

• “Show me how many pills you would take in 1 day.”

71% of low literacy patients could read the instructions correctly

• Only 35% could demonstrate the correct number of tablets to be taken.

Rates of Correct Understanding vs. Demonstration
“Take Two Tablets by Mouth Twice Daily”

Impact of Limited Health Literacy

- ↑ in preventable hospital visits and admissions
- ↑ use of services designed to treat complications and less use of services designed to prevent complications.
- ↑ likelihood of reporting health as “poor”
- ↑ negative psychological effects
  - Feel shame
  - Use avoidant behaviors
- ↑ healthcare costs
- ↑ mortality

https://health.gov/communication/literacy/quickguide/factsliteracy.htm
Report on Health Literacy

• Institute of Medicine (IOM)
  – Health information is unnecessarily complex
  – Health systems should develop and support programs to reduce the negative effects of limited health literacy

• Healthy People 2020
  – Improve the health literacy of the population
  – Increase the proportion of persons who report that their health care providers have satisfactory communication skills

• Joint Commission 2007
  – Improve health literacy to protect patient safety
Polling Question #5

What clues indicate limited health literacy?

A. Unable to verbalize the indication for each medication
B. Leaves health forms incomplete
C. Makes excuses
D. Misses appointments
E. All of the above
Polling Question #6

According to the proposed USP standards regarding prescription labeling, which of the following directions would be most appropriate?

A. Take 1 tablet by mouth every 12 hours
B. Take 1 tablet by mouth in the morning and 1 tablet in the evening
C. Take 1 tablet by mouth twice daily
D. Take as directed.
Strategies to Improve Health Literacy

- Recognize barriers to adequate health literacy
- Be aware of clues or red flags for limited health literacy
- Utilize tools to help identify limited health literacy
- Take a universal precautions approach
- Avoid use of technical or medical terminology
- Simplify directions to increase clarity
- Use caution with print materials
Recognizing Barriers to Health Literacy

• Increasing complexity of the healthcare system
  – Greater self-care expectations
  – More medications to treat chronic diseases
  – Formulary and manufacturer changes
  – Lack of medication reconciliation

• Making directions too complicated
• Reliance on print communication
• Delivering verbal directions too quickly
• Focusing on information rather than actions
• Limited awareness of cultural differences
Clues/Red Flags for Limited Health Literacy

• Incomplete or inaccurately completed forms
• Frequently missed appointments, lack of follow-through with tests or appointments
• Nonadherence with medication
• Unable to explain names of medications, purpose of medications, timing of medication administration
• Asks for old prescription bottles to be returned, especially if they have markings or symbols
• Refers to medications by colors and shapes rather than names
• Opens the prescription bottle to identify the medication rather than reading the label
Clues/Red Flags for Limited Health Literacy (Continued)

• Excuses when asked to read
  – “I forgot my glasses. I’ll read that when I get home.”
  – “I forgot my glasses. Can you read this to me?”
  – “Let me bring this home so I can discuss with my daughter/son.”

• Additional clues
  – Views written material upside down
  – Seldom asks questions when receiving new information or prescriptions
  – Keeps folded up papers in pocket/purse

• CAUTION: CAN’T ALWAYS TELL BY LOOKING
Ask Questions to Identify Limited Health Literacy

• How often do you need to have someone help you when you read instructions, pamphlets, or other written material from your doctor or pharmacy? (Single-Item Literacy Screener (SILS), Version 1)

• Have you ever had trouble understanding something a doctor or nurse said to you during an appointment?

• Do you sometimes get confused about how to take a prescribed medication?

• Have you ever struggled to fill out complicated health forms correctly and completely?
Formal Health Literacy Assessments

• REALM (Rapid Estimate of Adult Literacy in Medicine)
• TOFHLA (Test of Functional Health Literacy in Adults)
• NVS (Newest Vital Sign)
**REALM Health Literacy Test**  
*(Rapid Estimate of Adult Literacy in Medicine)*

How many of these words can you read aloud and pronounce correctly, each within five seconds? Start with the first column, reading down. Skip those you cannot read.

<table>
<thead>
<tr>
<th>Fat</th>
<th>Fatigue</th>
<th>Allergic</th>
</tr>
</thead>
<tbody>
<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>
</tr>
<tr>
<td>Stress</td>
<td>Behavior</td>
<td>Medication</td>
</tr>
<tr>
<td>Smear</td>
<td>Prescription</td>
<td>Occupation</td>
</tr>
<tr>
<td>Nerves</td>
<td>Notify</td>
<td>Sexually</td>
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</table>
SCORE
Add up the number of words pronounced correctly.

0—18 words  Third grade or below You will not be able to read easy materials. You will need repeated oral instructions, materials composed primarily of illustrations, or audio or videotapes,

19—44 words  Fourth to sixth grade You will need easy materials. You will not be able to read prescription labels.

45—60 words  Seventh to eighth grade You will struggle with most patient education materials and will not be offended by low-literacy materials.

61—66 words  High school You will be able to read most patient-education materials

Source: Rapid Estimate of Adult Literacy in Medicine
The New York Times
### Test of Functional Health Literacy in Adults (TOFHLA)

<table>
<thead>
<tr>
<th>Description</th>
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| Two-part assessment:  
1) Provides participants with medical information or instructions (e.g. Instructions on a prescription label or instructions about preparation for a diagnostic procedure). Participants review the information and then answer questions that test their understanding of the provided information.  
2) Based on the Cloze method, where participants are given passages of text about medical topics with certain words replaced with blank spaces. The participants must fill in the blank spaces using words selected from a multiple choice list.  
| Administration time: 22-25 min |

<table>
<thead>
<tr>
<th>Measurement</th>
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</table>
| • Inadequate Literacy: 0-59  
• Marginal Literacy: 60-74  
• Adequate Literacy: 75-100 |

<table>
<thead>
<tr>
<th>Strengths</th>
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| • Indicator of a patient’s ability to read and understand health-related prose passages and numerical information.  
• Used in health literacy research settings.  
• Spanish version available. |

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<thead>
<tr>
<th>Limitations</th>
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| • Primarily screens for reading ability.  
• Long administration time. |

<table>
<thead>
<tr>
<th>Location</th>
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</table>
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
Newest Vital Sign (NVS)

| Description | This 6-item assessment measures reading and comprehension of a nutrition label.  
|             | Average administration time: 3-6 min |
| Measurement | Patients with low literacy: 0-4 questions answered correctly  
|             | Patients unlikely to have low literacy: 5-6 questions answered correctly. |
| Strengths   | Tests for numeracy, reading ability and comprehension skills.  
|             | Available in English and Spanish.  
|             | Correlates with TOFHLA.  
|             | May be more sensitive to patients with marginal health literacy than other functional health literacy assessments. |
| Limitations | May overestimate the percent of patients with low literacy, due to its specificity.  
|             | Does not differentiate well between adequate and marginal literacy. |
1. If you eat the entire container, how many calories will you eat?

2. If you are allowed to eat 60 grams of carbohydrates as a snack, how much ice cream could you have?

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?

4. If you usually eat 2,500 calories in a day, what percentage of your daily value of calories will you be eating if you eat one serving?

5. Is it safe for you to eat the ice cream?

6. If no, why not?
Take a Universal Precautions Approach

• Key Points
  – You can’t tell by looking
  – Health literacy skills ≠ adequate understanding
  – Stress or anxiety can decrease ability to manage health information
  – Everyone will benefit from clear communications
    • Simplify = minimizing miscommunication
    • Offer clear expectations
    • Verify patient understanding

• AHRQ Health Literacy Universal Precautions Toolkit, 2\textsuperscript{nd} edition
  – Evidence-based guide to ensure systems are in place to promote better understanding by all patients

Avoid Use of Technical or Medical Terminology

<table>
<thead>
<tr>
<th>Screening</th>
<th>Mental Health</th>
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<tr>
<td>Dermatologist</td>
<td>Annually</td>
</tr>
<tr>
<td>Immunization</td>
<td>Depression</td>
</tr>
<tr>
<td>Contraception</td>
<td>Respiratory Problems</td>
</tr>
<tr>
<td>Hypertension</td>
<td>Community Resources</td>
</tr>
<tr>
<td>Oral</td>
<td>Monitor</td>
</tr>
<tr>
<td>Diabetes</td>
<td>Cardiovascular</td>
</tr>
<tr>
<td>Diet</td>
<td>Referral</td>
</tr>
<tr>
<td>Hygiene</td>
<td>Eligible</td>
</tr>
<tr>
<td>Prevention</td>
<td>Arthritis</td>
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Using Plain Language:
What could we say instead of...

<table>
<thead>
<tr>
<th>Medical Term</th>
<th>Plain Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adverse reaction</td>
<td>Side effect</td>
</tr>
<tr>
<td>Hypoglycemia</td>
<td>Low sugar</td>
</tr>
<tr>
<td>PRN</td>
<td>When you need it</td>
</tr>
<tr>
<td>Suppository</td>
<td>Pill that goes in your bottom/behind</td>
</tr>
<tr>
<td>Topical</td>
<td>On skin</td>
</tr>
</tbody>
</table>
Simplify to Increase Clarity

How can we simplify?

Jane Doe        Dr. Best

Take two tablets by mouth twice daily.

Mucinex 600mg
1 refill
Simplify to Increase Clarity

How can we simplify?

Take 2 tablets by mouth in the morning and 2 tablets by mouth in the evening to thin congestion.

Mucinex 600mg 1 refill

Jane Doe Dr. Best

– Use numeric rather than alphabetic characters
– Avoid vague instructions (bid, tid, q 12 hours)
– Avoid “take as directed” unless clear counseling provided
– Include purpose of use (“for high blood pressure”)
– Limit auxiliary info
– Address limited English proficiency
– Improve readability
Rates of Correct Understanding

“Take 2 Tablets by Mouth Twice Daily”
vs. “Take 1 tablet in the morning and 1 tablet at 5pm

Use Caution with Print Materials

- Ensure that print materials are appropriate for the patient’s level of understanding
  - Average American reads at the 8th-9th grade level
  - Average health education material is at the 12th grade level
  - Recommended for print material to be at the 5th grade level (3rd grade level may be best)
- Avoid relying on print materials
- Best practices
  - If a new prescription, make sure pharmacist makes offer to counsel
  - Check with patient on refills
Directions: Paste in a sample of text and click "CHECK TEXT READABILITY." A sufficient sample size consists of 4-5 full sentences; approximately 200 - 500 words total. For larger texts, such as books, pull 1-2 sample sizes from each chapter. (Note: Our free readability assessment tool limits sample size to 600 words. Sample sizes over 600 words are automatically truncated.)

Paste sample of plain text here. Your sample must be between 150-600 words. Thank you! :)

WARNING: THIS MEDICINE CAN CAUSE SEVERE AND SOMETIMES FATAL BLEEDING. Bleeding is more likely to occur at the start of treatment or with high doses. Patients who have a history of stomach or bowel bleeding, high blood pressure, stroke or "mini-stroke" (transient ischemic attack / TIA), serious heart disease, anemia, cancer, certain genetic factors, or kidney problems may be at greater risk. Patients who have inconsistent INRs (a blood test); have taken this medicine for a long time; have a recent injury or surgery; or are 65 years of age or older are also at greater risk. Certain blood clotting tests will be performed regularly while you take this medicine. Certain medicines, dietary changes, and other factors may affect INR levels while taking this medicine. Discuss any questions or concerns with your doctor. CONTACT YOUR DOCTOR RIGHT AWAY if you notice any unusual bleeding or bruising. Symptoms of bleeding problems include unusual bruising; bleeding gums; bloody or coffee ground-like vomit; coughing up blood; dizziness; increased bleeding from cuts; increased menstrual or vaginal bleeding; nosebleeds; pain, swelling, or discomfort; pink or brown urine; red or black stools; unusual headaches or weakness. Some medicines or medical conditions may interact with this medicine. INFORM YOUR DOCTOR OR PHARMACIST of all prescription and over-the-counter medicine that you are taking. DO NOT TAKE THIS MEDICINE if you are also taking mifepristone, streptokinase, or urokinase. ADDITIONAL MONITORING OF YOUR DOSE OR CONDITION may be needed if you are taking heparin; other anticoagulants; antiplatelet...

Security check - Are you human?: ✓ Yes. (Click the checkmark)

Check Text Readability  Clear
The average reading level for U.S. high school and adult readers is between 7th and 8th grade. Your text’s grade level is 14.
Now with pictures...try again

1. Start with your paper white side up. Fold in half, as shown.
2. Fold the top corner down to the baseline. Crease well and unfold.
3. Fold the bottom left hand corner up to the crease line just made.
4. Now fold the bottom right hand corner up to the opposite side.
5. Fold the front flap downwards.
6. Now fold the back top flap backwards in the same manner.
7. Open out. Your drinking cup is finished!
How Will You Help Improve Health Literacy?

Image: http://www.healthliteracymonth.org/health-literacy-heroes/
Key Points

• Limited health literacy is a major public health concern
  – Poor patient outcomes
  – Increased healthcare utilization
  – Increased mortality rates
• Addressing health literacy = higher quality care