HEALTH LITERACY

A Matter of Healthcare Quality & Equity

Michael Wolf, MA MPH PhD
Health Literacy and Learning Program
Feinberg School of Medicine
School of Education & Social Policy
Northwestern University
Presentation Overview

• Education ~ Literacy ~ Health

• The Value of a ‘Health Literacy’ Perspective
  - HL as an issue of *equity*
  - HL as an issue of *quality*

• A Looming Epidemic

• Call to Action
  - defining a comprehensive response
  - example strategies
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Education, Literacy, & Health

• **↓** Years of schooling linked to **↓** health
  (Kitigawa & Hauser, 1973; Pappas et al, 1993; Lantz et al, 1998)

• **Low literacy predicts poorer health outcomes**
  (Schillinger et al, 2002; Baker et al., 2002; Wolf et al., 2005; Baker et al. 2007)

• **Literacy ~ Education**
  (Gazmararian, et al., 1999)
Literacy and Mortality Risk

STRONGER INDICATOR OF MORTALITY RISK THAN YEARS OF SCHOOLING

An Issue of Equity
Literacy and Education Disparities

High School Drop Out Rates in 2005*:

- 6% White
- 10% Black
- 22% Hispanic

*16-24 year olds w/o H.S. diploma or equivalent.

Source: U.S. Department of Education, National Center for Education Statistics

Literacy Helps Explain Racial Disparities

• **Advanced Stage of Presentation**
  
  (Bennett et al., 1998; Wolf et al. 2006)

• **Medication Adherence**
  
  (Osborn et al., 2007)

• **Health Status**
  
  (Howard et al., 2006; Sentell et al, 2006)
An Issue of Quality
An Unstandardized System

Percent Distribution of Hand-Written Sig Messages in a Public Hospital

Percent Distribution of Electronically-Generated Sig Messages in an Academic Practice

39 ways to say “1 tablet a day”

Bailey et al., under review, Arch Intern Med, 2008
### An Unstandardized System

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dosage Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lipitor 10 mg tabs</td>
<td>- &quot;Take one tablet daily.&quot;</td>
</tr>
<tr>
<td>Take one tab QD</td>
<td>- &quot;Take 1 tablet by mouth for high cholesterol.&quot;</td>
</tr>
<tr>
<td>Dispense #30</td>
<td>- &quot;Take one (1) tablet(s) by mouth once a day.&quot;</td>
</tr>
<tr>
<td>Indication: for high cholesterol</td>
<td>- &quot;Take one tablet by mouth every day for high cholesterol.&quot;</td>
</tr>
<tr>
<td>No refills</td>
<td></td>
</tr>
<tr>
<td>Fosamox 5 mg tabs</td>
<td>- &quot;Take 1 tablet by mouth daily.&quot;</td>
</tr>
<tr>
<td>Take one tab QD</td>
<td>- &quot;Take one tablet by mouth every day for osteoporosis prevention. Do not lie down for at least 30 minutes after taking.&quot;</td>
</tr>
<tr>
<td>Dispense #30</td>
<td>- &quot;Take 1 tablet every day, 30 minutes before breakfast with a glass of water. Do not lie down.&quot;</td>
</tr>
<tr>
<td>Indication: osteoporosis prevention</td>
<td>- &quot;Take one tablet every day.&quot;</td>
</tr>
<tr>
<td>Do not lie down for at least 30 minutes</td>
<td></td>
</tr>
<tr>
<td>Bactrim DS tabs</td>
<td>- &quot;Take one tablet by mouth twice daily for UTI&quot;</td>
</tr>
<tr>
<td>Take one tab BID</td>
<td>- &quot;Take one tablet by mouth twice daily for urinary tract infection.&quot;</td>
</tr>
<tr>
<td>Dispense #6</td>
<td>- &quot;Take 1 tablet by mouth 2 times a day.&quot;</td>
</tr>
<tr>
<td>Indication: UTI</td>
<td>- &quot;Take 1 tablet twice daily for 3 days.&quot;</td>
</tr>
<tr>
<td>No refills</td>
<td></td>
</tr>
<tr>
<td>Ibuprofen 200 mg tabs</td>
<td>- &quot;Take 1 to 2 tablets by mouth as needed for pain.&quot;</td>
</tr>
<tr>
<td>Take 1-2 tabs TID PRN pain</td>
<td>- &quot;Take 1 to 2 tablets by mouth three times daily as needed for pain.&quot;</td>
</tr>
<tr>
<td>Dispense #30</td>
<td>- &quot;Take 1 to 2 tablets by mouth as needed for pain ** Not to exceed 4 times a day&quot;</td>
</tr>
<tr>
<td>No refills</td>
<td>- &quot;Take 1 to 2 tablets 3 times a day as needed for pain.&quot;</td>
</tr>
</tbody>
</table>

*Wolf et al., under revision Medical Care, 2008*
Patient Communication

- Consumer Rx materials written > 12th grade level
- Less than one third routinely review (Wolf et al., 2006)
- Physicians, pharmacists missing opportunities to counsel patients (Metlay et al., 2005; Tarn et al., 2006)
Not Necessarily Patient-Centered

• Physicians most trusted source of health information
  (Makoul & Arnston, 2001)

• Often only source for patients with limited health literacy
  (Wolf et al., 2004)

• Medical encounters often incomplete, without review
  (Schillinger et al., 2003; Wolf et al., 2007)

• Consequence: ↓ patient understanding, ↓ informed decisions
  ↓ health behaviors, ↓ health outcomes, ↑ adverse events
  (Schillinger et al., 2003; Davis et al., 2006; Persell et al., 2007; Khankari et al., 2007; McCaffery 2008)
A Health Literacy Perspective

- Simplify the health care experience
- Support comprehension, action
- Maintain communication

Health Literacy = Patient-Centered Care
A Looming Epidemic
Perfect Storm 2030 Prediction

Reasons for Literacy Decline

- Failures in Education System
  - stagnant H.S. grad rates
- Shifting Demographics
  - new, larger immigrant population
- Changing Economy
  - growth in knowledge-intensive jobs
A Call to Action
Quality Improvement Targets

- Patient skills
- Health materials
- Clinician skills
- Health system design
Quality Improvement Targets

- Patient skills
  - General – Bridge Education System
  - Specific – Chronic Care Management
- Health materials
- Clinician skills
- Health system design
Quality Improvement Targets

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Enhanced Rx Label Design
Enhanced Prescription Drug Label Design to Support Patient Understanding and Use
(R01 HS017687-01; PI Wolf)

**Overall Objective:** to test the efficacy of an evidence-based, enhanced prescription drug container label design to improve older patients’ understanding of instructions for use.
<table>
<thead>
<tr>
<th>1.</th>
<th>2.</th>
<th>3.</th>
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</thead>
<tbody>
<tr>
<td><strong>Dose:</strong></td>
<td><strong>Dose:</strong></td>
<td><strong>Dose:</strong></td>
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<tr>
<td><strong>Take for:</strong></td>
<td><strong>Take for:</strong></td>
<td><strong>Take for:</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Schedule</th>
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<tbody>
<tr>
<td>Morning</td>
</tr>
<tr>
<td>----------</td>
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<td></td>
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</tbody>
</table>

**Additional Instructions**
- Take with a meal
- Swallow whole
- Do not drink alcohol
- Limit your time in the sun
- Other ____________________

- Take with a meal
- Swallow whole
- Do not drink alcohol
- Limit your time in the sun
- Other ____________________
Overall Objective: to improve patient understanding and use of newly prescribed drugs via distribution of ‘enhanced print’ instructions generated by the electronic medical record.
Patient Instructions

LIPICTOR (ATORVASTATIN)

Purpose
This medication can lower "bad" cholesterol.

Benefit
It can help prevent a heart attack or stroke.

Length of Treatment
You may need to be on this medication for the rest of your life.

Options
Some patients can lower their cholesterol with diet, exercise, and weight loss.

Instructions
Take this medicine by mouth once a day. Try to take it at bedtime.
Diabetes Guide
American College of Physicians Foundation, MFH

- Clinical Trial (N=1,080)

- 9 Missouri Clinics

- **Question:** Can you embed patient education in clinical practice?

- ‘Carve-in’ vs. ‘Carve-Out’
  - Practice responsibility
  - Care management model
Moving Forward

• What are we asking of patients?

• How are we supporting them?

• Multi-disciplinary approach needed
Summary

• Simplify Health Care for Patients

• Develop Strategies with Target Population

• Seek Sustainable Solutions

• Comprehensive Strategies Needed!
Contact Information:

Michael S. Wolf, PhD MPH
Assistant Professor of Medicine and Learning Sciences
Director, Health Literacy and Learning Program
Division of General Internal Medicine
Institute for Healthcare Studies
Northwestern University Feinberg School of Medicine
750 N. Lake Shore Drive, 10th Floor
Chicago, IL 60611
(312) 503 – 5592
mswolf@northwestern.edu