Optimizing Care for Patients with Limited Health Literacy

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Common Social Vulnerabilities

Violence

Uninsured

Literacy and Language

Neglect

Economic hardship/food insecurity

Race/ethnic discordance, discrimination

Addiction

Brain disorders, e.g. depression, dementia

Immigrant

Legal status

Isolation/Informal caregiving burden

Transportation problems

Illness Model

Eyes and Ears

Shelter

Schillinger 2007
What is Health Literacy?

- “The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make [informed] health decisions.”

- 3 domains:
  1. oral (speaking, listening)
  2. written (reading, writing)
  3. numerical (quantitative)

- Web? Patient portals?

- Capacity/Preparedness ↔ Demand Mismatch

Schillinger Am J Bioethics 2007
1st National Assessment of Health Literacy  
n=19,714 US Adults

- **Below Basic**: Circle date on doctor’s appointment slip

- **Basic**: Give 2 reasons a person with no symptoms should get tested for cancer based on a clearly written pamphlet

- **Intermediate**: Determine what time to take prescribed medicine based on label

- **Proficient**: Calculate employee share of health insurance costs using table

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1st National Assessment of Health Literacy
n=19,714 US Adults

53% Intermediate (Average) (Medicare)
12% Proficient
14% Below Basic
22% Basic (Hispanic)

Prevalence & Disparities in Limited Health Literacy

Percentage of adults in each health literacy level, by race/ethnicity, 2003

Source: NAAL
Patients with Diabetes and Low Literacy Less Likely to Know Correct Management

**Need to know:**
Symptoms of low blood glucose (hypoglycemia)

**Need to do:**
Correct action for hypoglycemic symptoms

Williams et al., Archive of Internal Medicine, 1998
Health Literacy is Associated with Glycemic Control

N=408

Schillinger, D. JAMA. 2002;288(4):475-482
Lower Health Literacy is Associated with Diabetes Complications

<table>
<thead>
<tr>
<th>Complication</th>
<th>n**</th>
<th>AOR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retinopathy</td>
<td>111</td>
<td>2.33</td>
<td>(1.19-4.57)</td>
</tr>
<tr>
<td>Nephropathy</td>
<td>62</td>
<td>1.71</td>
<td>(0.75-3.90)</td>
</tr>
<tr>
<td>Lower Extremity Amputation</td>
<td>27</td>
<td>2.48</td>
<td>(0.74-8.34)</td>
</tr>
<tr>
<td>Cerebrovascular Disease</td>
<td>46</td>
<td>2.71</td>
<td>(1.06-6.97)</td>
</tr>
<tr>
<td>Ischemic Heart Disease</td>
<td>93</td>
<td>1.73</td>
<td>(0.83-3.60)</td>
</tr>
</tbody>
</table>

Schillinger, D. JAMA. 2002;288(4):475-482
Limited Health Literacy Patients Experience More Serious Hypoglycemia/Year

N>14,000


P for all<0.001

My doctor said, “Only 1 glass of alcohol a day”. I can live with that.

“The problem with communication is the assumption that it has occurred.”

- GB Shaw
Conceptual Framework: 4 Basic Functions of Communication in Outpatient Care

Recommendation #1: Eliminate Jargon (Use “Living Room Language”)

- GLUCOMETER
- HEMOGLOBIN A1c
- DIALYSIS
- ANGINA
- RISK FACTORS
- CREATININE
<table>
<thead>
<tr>
<th>Jargon Terms</th>
<th>...unclarified</th>
<th>...clarified</th>
<th>...from patient’s own visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucometer</td>
<td>Angina</td>
<td>Benign</td>
<td></td>
</tr>
<tr>
<td>Immunizations</td>
<td>Microalbuminuria</td>
<td>Baseline</td>
<td></td>
</tr>
<tr>
<td>Weight is stable</td>
<td>Ophthalmology</td>
<td>Blood drawn</td>
<td></td>
</tr>
<tr>
<td>Microvascular complication</td>
<td>Genetic</td>
<td>Blood count</td>
<td></td>
</tr>
<tr>
<td>System of nerves</td>
<td>Creatinine</td>
<td>Vaccine</td>
<td></td>
</tr>
<tr>
<td>HbA1c</td>
<td>Symptom</td>
<td>Increase your R</td>
<td></td>
</tr>
<tr>
<td>EKG abnormalities</td>
<td>Correlate</td>
<td>Stool</td>
<td></td>
</tr>
<tr>
<td>Dialysis</td>
<td>Stool was negative</td>
<td>Renal clinic</td>
<td></td>
</tr>
<tr>
<td>Wide Range</td>
<td>Respiratory tract</td>
<td>Blood cells</td>
<td></td>
</tr>
<tr>
<td>Risk factors</td>
<td>Washed out of your system</td>
<td>CAT scan</td>
<td></td>
</tr>
<tr>
<td>Kidney function</td>
<td>Receptors</td>
<td>Screening</td>
<td></td>
</tr>
<tr>
<td>Interact</td>
<td>Short course</td>
<td>Polyp</td>
<td></td>
</tr>
</tbody>
</table>

UCSF
Function of Clinician Jargon in Outpatient Visit

Assess Symptoms 10%
Deliver Test Results 24%
Provide Health Education 29%
Provide Recommendations 37%

n = 60

Dialysis “Do you know what the number one cause for people in this country being on dialysis is? Diabetes.”

<table>
<thead>
<tr>
<th>Would you please tell me in your own words what dialysis means?</th>
<th>In your own words, what do you think the doctor was trying to tell the patient?</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Check something every day.”</td>
<td>“Sugar is too high.”</td>
</tr>
<tr>
<td>“What? Is that about your toes?”</td>
<td>“I can't say it.”</td>
</tr>
<tr>
<td>“It means that your diabetes is going worse that you have to exercise to make diabetes.”</td>
<td>“Means that more people are getting diabetes.”</td>
</tr>
<tr>
<td>“You got to get on machine to pump... redo blood to come up to par.”</td>
<td>“That the sugar was not...hmm.”</td>
</tr>
<tr>
<td>“...regarding kidney.”</td>
<td>“Diabetes is one cause of kidney problems.”</td>
</tr>
<tr>
<td>“That is a warning...about the kidney...my doctor told me about those side effects of the diabetes.”</td>
<td>“About dialysis, because they are warning us, they are telling me about the complications...that if I'm having problems in my kidney, I'm going to have dialysis.”</td>
</tr>
<tr>
<td>“It’s a way to clean blood get off toxins out the blood.”</td>
<td>“That you need to be on dialysis to cleanse blood or gonna die.”</td>
</tr>
</tbody>
</table>
Patient Comprehension of Jargon (% Some /Total Understanding)
Recommendation #2: Assess Comprehension w/ “Teach-back” Method, AKA “Closing the Loop”

- In this interactive technique, the clinician prioritizes amongst the information exchange and explicitly asks the patient to “teach-back” what he/she has recalled and understood re those high-priority domains.

- Similarly, clinicians can use the strategy to assess patient’s perceptions of the information or advice given.

- The technique can be used toward the end of a visit or during the course of the visit, so as to tailor communication earlier.

Closing the Loop: Interactive Communication to Enhance Recall & Comprehension

‘Teaching’ is one thing......
…. But ‘learning’ is quite another
We Rarely “Close the Loop” –
But It’s Good When We Do

- Physicians assessed recall or comprehension for 15/124 new concepts (12%)

- When new concepts included patient assessment, patient provided incorrect response half the time (7/15=47%)

- Visits using interactive communication loop not longer (20 min vs. 22 min)

- Application of loop associated with better HbA1c (AOR 9.0, p=.02)

How to Use “Teach Back”?

Example 1 (medication change):

- **Provider (to patient):** “I want to make sure I did a good job explaining your diabetes medications, because this can sometimes be confusing. Can you tell me what changes we decided to make and how you NOW will take the medications?”

- **Note** how the provider places the onus of any possible miscommunication on him/herself. In other words, the “teach-back” task is conveyed not as a test of the patient, but of how well the provider explained the concept.
Example #2: Taking the Easy Way Out

- **Provider (to patient):**
  
  “Do you understand what we just talked about?” or “Do you understand the plan regarding your blood pressure medications?” or “Did that makes sense?”

- These routine queries, which do not require explicit articulation of recall, comprehension, or perceptions on the part of the patient, will universally be met with an uninformative (and possible falsely re-assuring), “Yes, doctor”.
Recommendation #3: Employ Well-Tested Visual Aids

or shorter url: http://bit.ly/1TZZVYv
Pictures Help Tell the Story

Patients looked at pictures first. Particularly liked pictures of food comparisons.

Too Much

Right Size

or shorter url: http://bit.ly/1TZZVYv
Carb Counting Vs. Plate Method?

Plate Model > Carb Counting > Usual Care in lowering HbA1c, especially for low numeracy

Recommendation #4: Use Accessible Technology

The future is already here, it's just not evenly distributed

*William Gibson* *The Economist* *2003*
Key Findings of IDEALL Program
Estimating Public Health “Reach” of Programs

Composite reach product

<table>
<thead>
<tr>
<th></th>
<th>ATSM</th>
<th>GMV</th>
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<tbody>
<tr>
<td>Overall</td>
<td>22.1</td>
<td>4.8</td>
</tr>
<tr>
<td>English</td>
<td>20.0</td>
<td>6.4</td>
</tr>
<tr>
<td>Chinese</td>
<td>22.0</td>
<td>2.7</td>
</tr>
<tr>
<td>Spanish</td>
<td>24.3</td>
<td>4.0</td>
</tr>
<tr>
<td>Adequate Literacy</td>
<td>15.6</td>
<td>7.6</td>
</tr>
<tr>
<td>Limited Literacy</td>
<td>28.0</td>
<td>3.6</td>
</tr>
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</table>
