Shining a Light on Health Literacy: What's the Bottom Line for Surgeons?



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LSUHSC-S

Disclosure Information *Terry C. Davis, PhD*

Research Funding

- NIH, Louisiana Clinical and Translational Science Center.
- American Cancer Society "Health Literacy Interventions to Overcome Disparities in CRC Screening"
- PCORI: "Achieving Patient-Centered Care and Optimized Health In Care Transitions by Evaluating the Value of Evidence (PROJECT ACHIEVE)"
- PCORI: "Promoting Successful Weight Loss in Primary Care in Louisiana (PROPEL)"
- NIDDK– "Health Literacy Intervention to Improve Diabetes Outcomes Among Rural Primary Care Patients"







Health Literacy: What do Surgeons Need to Know?

- Health literacy *the ability to obtain, understand and use health information and services significantly* impacts patient understanding and outcomes.
- Nearly 9 of 10 adults have difficulty using health information that is routinely available in healthcare facilities and the media.
- Physicians often fail to grasp the wide chasm between what they want to communicate and what patients understand.
- Most consent documents are not designed to truly inform patients about procedures, or research patients may not understand basic concepts.
- It is increasingly difficult for people to separate evidence-based health information online from misleading ads and gimmicks.

Health Literacy Affects Surgeon/Patient Communication

Patients with Limited Health Literacy:

- Ask fewer questions in general
- Ask fewer questions about surgery procedure and therapeutic regimen

And Therefore:

- Lack adequate understanding of the surgical procedure and discharge instructions
- Make mistakes with medication
- Have more surgical complications

Common Health Literacy Communication Problems

- Orthopedic study. 250 patients at 1st post-op visit
 - 45% knew bone fractured, 19% knew expected healing time, 45% knew weight bearing status.
- Surgery study. 100 patients
 - 95% of surgeons believed patients understood when to resume normal activities vs. only 58% of patients.
- Surgeons only occasionally (29% of the time) asked patients if they had questions — when they did, most (79%) had questions

Roter, D. 2011 Nursing Outlook; Korsch, B. Pediatrics 1968; Castro C 2007 Am J Health Behav; Kadakia, J Ortho Trauma, 2013; Calkins Arch Intern Med, 1997.

The Ripple Effect of Literacy on Surgery

- Poor MD/patient communication
- Inadequate consent process
- Poor understanding & adherence to pre- & post-op instructions
- Improperly taking meds

These may result in:

- avoidable surgery cancellations & postponements
- wasted OR time
- ↑ hospital expense
- ↓ patient outcomes
- ↓ patient satisfaction

Koster, Schmidt, Philbert. J Public Health. 2017; Miller-Matero, Bryce, Hyde-Nolan. Psychosomatics. 2016



National Assessment of Health Literacy

Assessed functional clinical, preventive,& navigational task n= 19,000 Adults, 152 tasks (28 health related)

Below Basic	Circle date on doctor's appointment slip. (AA 24%, Hispanic 41%)



Determine when it's okay to drink before a22%medical test based on short instructions.22%

14%

Intermediate

Determine what time to take prescription 53% medicine based on the label.



Calculate employ share of health insurance based 12% on table.

National Assessment of Adult Literacy (NAAL): National Center for Educational Statistics, U.S. Dept. of Education, 2003

Low Health Literacy is Prevalent in AL: Rates By County





2014 Health Literacy Data Map 🖤

"Perfect Storm" of Patient Safety

- 39.5 million hospital discharges/year
- 20% of patients have a post-discharge adverse event

Hospital discharge is not standardized"

• Loose ends – pending & post-discharge tests



- Communication with PCP, ESL, health literacy
- Poor Information discharge summary quality & availability
- Poor Preparation knowledge of diagnoses, meds, f/u appointments
- Fragmentation who is in charge?

Hansen. Ann Intern Med 2013.; Williams M. S Med Journal 2014.

Medication Errors 2 days after Hospital
DischargePharm D call (n=197)

Patient did not think s/he needs med	15%
Patient did not fill due to cost	17%
Patient did not pick up from pharmacy	11%
Patient did not get prescription on discharge	12%
Patient self-discontinued due to side effects	11%
Patient did not fill because of insurance	8%
Incorrect Administration	%
Wrong frequency/interval	21%
Wrong dose on prescription	18%

Overall, 51% experienced error within 2 days!

Jack BW, Ann Intern Med 2009

We Need to do a Better Job of Patient Communication and Support

- Less than 1 in 5 patients recall what doctors tell them.
- 20%-30% do not fill initial prescriptions.
- Up to 50% do not take prescriptions as recommended.
- Clinic visit times and hospitalizations are shorter.
- Patients asked to perform more complex self-care.
- Patients often need help and support in changing health behavior and sustaining improvement.

Video: It's Easy to Make a Mistake



Medication Error - Most Common Medical Mistake 1.5 M adverse events (patient error >700,000, persistent error)

- 2 out of 3 patients leave MD visit with Rx
- 4 billion retail Rx filled in 2014
 - Up 50%-60% in 10 years
- 82% adults take at least one med
- Elderly fill 20 Rx/year, see 8 physicians
- 1 in 6 pediatric Rx not dosed correctly (study: 4 in 5 at least 20% off-dose when cups used).
- >300,000 OTC meds (>600 contain acetaminophen)
- Most labels and inserts are in English <u>only</u>





Can Patients Understand Rx labels? *"How Would You Take This Medicine?"*

395 medicine clinic patients in 3 states 48% <9th grade reading, averaged 1.4 meds



- **46%** did not understand instructions \geq 1 labels
- **38%** with adequate literacy missed at least 1 label
- <10% attended to warning labels

Davis, Wolf, Bass, Parker. Ann Intern Med, 2006.

"Show Me How Many Pills You Would Take in 1 Day"

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



Patient Centered Label Can Improve Understanding and Adherence

Micha	el Wolf	04/29	9/71	Rx#: 1234	567	10/30/2008	Important
Glybur	ide 5 mg			You have 1 180 pills Discard aft	l 1 refill: ter 10/	s /30/2009	Do not drink alcohol.
Take f Take	or <u>Diabe</u> 2 pills at 2 pills at	<u>tes</u> : breakfa : dinner	st	Provider:	Ruth Emor (414)	Parker, MD ry Medical Center) 123-4567	Limit your time in the sun.
Breakfast	Lunch	Dinner	Bedtime	Pharmacy:	NoVA (1144 Rest (713)	ScriptsCentral 15 Sunset Blvd. on, VA) 123-4567	
2		2		NDC # 12	34567		

RCT in 11 FQHCs. 429 pts w DM and/or HTN. 39% low literacy



	Standard Label	PC Label
Understanding (baseline)	59%	74%
Adherence (3 months)	30%	49%

State Board of Pharmacy in CA passed legislation for this label.

Hidden Problem: Numeracy

- You drink this whole bottle of soda. How many grams of total carbohydrates does it contain?
- 67.5 grams
- 32% answered correctly
- 200 primary care patients
 - 73% private insurance
 - 67% at least some college
 - 78% read \geq 9th grade
 - 37% math \geq 9th grade



Percentages & Probability are Challenging for Many:

- Approximately <u>half</u> of U.S. adults are unable to calculate a tip.
- <u>20%</u> of college-educated adults **don't** know what is a higher risk – 1%, 5%, or 10%

U.S. adults scored below adults in 23 nations in numeracy and problem solving – OECD 2013



Actual restaurant receipt

Improve Risk Communication

Provide both positive and negative frames.

• "6 in 10 men who have surgery to treat prostate cancer will be impotent. This means 4 in 10 will not."

Give absolute estimates - not relative.

- Drug X could reduce your risk of breast cancer by 50% (relative)
- Drug X could reduce your 5-year risk from 4% to 2% (absolute)





Red Flags For Limited Literacy

- Vacant look
- May say "I forgot my glasses."
- Asks fewer questions (or no questions)
- Incomplete forms
- Frequently missed appointments
- Unable to give coherent, sequential history
- Not taking medications correctly
- Lack of follow-through with referrals



^{*} Health Literacy and Patient Safety: Help Patients Understand – A Manual for Clinicians. 2nd edition. Chicago: AMA Foundation and AMA, 2007. www.ama-assn.org/ama1/pub/upload/mm/367/healthclinicians.pdf

Health Literacy and Numeracy May be Low; Now What?

- **DHHS's National HL Action Plan** health information needs to be *accurate, assessable, understandable ,actionable.*
- We must not blame individuals for not understanding information that has not been made clear to them.
- Everyone, no matter how educated, is at risk for misunderstanding health information if the issue is complex or emotionally charged.



Health Literacy Interventions to Overcome Disparities in CRC Screening in Rural FQHCs

Pre-intervention CRC screening Rate 3% - 5%



Patient Enrollment	(N = 620)
Race	
African-American	66%
White	34%
Gender	
Female	55%
Male	45%
Literacy	
< 9 th Grade Reading Leve	el 40%
>= 9 th Grade Reading Leve	el 60%



Methods





All participants given CRC screening recommendation, patient friendly materials (*written in conversational language, 4th grade level, pictures from clinic, focused on behavior, positive tone*), FIT kit with simplified, illustrated instructions and *teach back* used to confirm comprehension.

Patients randomized to personal follow–up call or automated call in 4 and 8 weeks if no FIT returned.



Year 2 and 3 materials & FIT mailed with simplified instructions. Follow-up calls conducted as in first year





Results - Year 1

620 patients enrolled - (6 withdrew before completing test)

Automated Call Arm (n=308)

69% completed FIT

• 40% needed at least one follow-up call

Personal Call Arm (n=306)

67% completed FIT

• 41% needed at least one follow-up call

58-60% patients given FIT in clinic returned without prompting

Providing FIT + literacy appropriate education at clinic visit with follow-up call (if needed) increased CRC screening rates of low income, rural patients.

Results – Year 2

<u>Automated call arm (n=)</u>

40% completed FIT

• 74 % needed at least one follow-up call

Personal call arm (n=)

37% completed FIT

• 74% needed at least one follow-up call

23-25% patients mailed returned FIT without phone prompting

Sustaining annual screening with FIT is challenging. Follow-up calls were essential in year 2.

Lower cost automated call just as effective as personal call both years

Health Literacy Focus has Shifted from Patients to Providers, Researchers, and Health Systems



Health Literacy Keys to Improving Patient Education

- Slow down
- Avoid medical jargon, use plain language
- Use pictures, teaching tools (pamphlets, brown bag meds)
- Limit advice (1-3 concepts)
 - Write brief take-home information
- Repeat and summarize information
- 'Teach back'/'show back' to confirm understanding
- Be positive and motivating



Residents Commonly Used Jargon

- •Lesion
- Excision
- Resection
- Tracheostomy
- Endoscopic
- Portacath
- •Gastritis
- •CT vs MRI



Pictures Can be Good Teaching Tools *Patients may not understand or use measurements*





Strategy for Limiting Information Lessons learned from patients

Tell me 3

- What's wrong? (briefly)
- What do I need to do?
- Why is it important that I do this?

(Diagnosis) (Treatment)

(Benefit/Context)

If meds – "break it down" for me

- <u>What</u>'s it for? (*indication*)
- When to take? How many pills at a time, how long? (duration)
- <u>Why</u>? (benefit)
- What to expect? (side effects)

Teach-Back Method



- "Tell me your understanding"
- "How will you describe this to your family?"
- Avoid asking:
 - Do you understand?
 - Do you have any questions?

Remember- what's clear to you is clear to you!

Communication Insight Relevant for Surgeons

The single biggest problem within communication is the illusion that it has taken place. George Bernard Shaw, Playwright

Communication does not take place because we tell somebody something.

Communication takes place when we observe patients closely and get signals that we are on the right track; that we have started at a place they are familiar with and track their ability to follow us.

We forget what it's like not to know something.

Alan Alda, Actor. Center for Communicating Science, Stony Brook University



Addressing Low Health Literacy at Discharge: Project RED

Aim: effectively prepare patients for hospital discharge

RN 'Discharge Advocate' works with inpatients to:

- Educate them with individualized instruction booklet (also sent to PCP)
- Arrange follow-up appointments
- Confirm medication reconciliation
 - Avg total time: 87 min per patient (42 min w patients, 45 min reviewing EMR, communicating w medical team & preparing discharge booklet)

Clinical PharmD calls patients 2-4 days after discharge to **review meds** and reinforce discharge plan

- Avg total time: 26 min per patient (10-19 min counseling)
- 65% of patients had at least 1 med problem

AHRQ March 2013

RED Template for Meds

EACH DAY f	ollow this sc	hedule for yo	our medicines	5
What time of day do I take this medicine?	Why am I taking this medicine?	Medicine name Amount	How many do I take?	How do I take this medicine?
Morning 🔆				
Noon				
Evening [500 Strengthered Str				
Bedtime				
Only if you need it for				

RED Template for Follow-up Appointments

John Doe

What is my main medical problem?

Chest Pain

When are my appointments?

Wednesday	Thursday,	Wednesday
August 8	August 16	September 12
at 11:30 a.m.	At 3:20 p.m.	At 9:00 a.m.
Dr. Mark Avery	Dr. Anita Jones	Dr. Lin Wu
Primary care doctor	Rheumatologist	Cardiologist
100 Main St. 2 nd floor Anytown ST	100 Pleasant Rd, Suite 105 Anytown, ST	100 Park Rd, Suite 504 Anytown, ST
For a follow up appointment	For your arthritis	To check your heart
Office phone number	Office Phone#:	Office Phone#:
(555) 555- 5555	(555) 555-5555	(555) 555-4444

Project RED Effective and Cost Effective Randomized Control Trial — 30 days after D/C

Participants

- 749 patients, mean age: 50, mean stay: 2.7 days
- 59% low literacy; 50% AA, 27% White

RED vs. standard discharge

- 30% lower hospital use
- 30% more likely to follow-up PCP
- 34% lower cost

2007 National Quality Forum "Safe Practice" for hospital discharge based largely on RED

Problems With Written Health Information

- Organized using medical model, not patient-centered
- Scientific/bureaucratic not personal/conversational
- Too long, too much information, key message buried
- Illustrations complex, confusing, or "don't look like me"
- Lack of attention to 'tone,' patient emotions
- Lack of patient and provider input in development
- Distribution and sustainability not thought out
 - How and when will patients get the information? Who gives it to them? When is teachable moment? Plan to update?
- Lack of awareness of what's on Google/blogs

Literacy Tests Used in Healthcare Research

Years of schooling is NOT a good measure of literacy level

- The most commonly used
 - **REALM** (Rapid Estimate of Literacy Medicine)
 - **REALM-SF** (short form)
 - **TOFHLA** (Test of Functional Health Literacy)
 - NVS (Newest Vital Sign)
- These are often referred to as tests of health literacy

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Newer: If the pa	rticipant takes m	ore than 5 seconds on a	a word, say "pass" and				a. nttie	a. toes	
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	(F	REALM-SF)				a. take	a. beds		
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Subject	4 P	Birch	Level		Your doctor has	sent you to	nave a	X-ray.	

Qualitative:

How confident are you filling out medical forms by yourself?Extremely – Quite A Bit – Somewhat – A Little Bit – Not At All(0)(1)(2)(3)(4)

Tests and ordering instructions are in resources at the end of the presentation.

Health Literacy Communication Recommendations

- Slow down, sit down and engage patient (and family member)
- Use plain language avoid surgical jargon
- Give easy to understand information and instructions
- Use pictures to help convey message and teach back to confirm understanding
- Ensure clinical and research materials are written in plain language and formatted for reading and navigation ease
- Websites need to be easy to understand and navigate
- Encourage staff to offer patients help with filling out forms

Health Literacy Surgery Research Ideas

- Can surgery disparities be partially explained by inadequate health literacy?
- Few studies examine role of HL in perioperative setting.
- Does HL influence family caregiver/patient understanding of complex self-care post surgery?
- QI project looking at impact of staff offering help with forms or providers using teach back.



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Resources Informed Consent

Templates and Terms

- The Agency for Healthcare Research and Quality (AHRQ) Informed Consent and Authorization Toolkit for Minimal Risk Research.
- First Clinical Research Glossary for Informed Consent: http://firstclinical.com/icfglossary/ http://firstclinical.com/glossary/

Helpful Links for Written Health Information

CDC (2013) *Clear Communication Index*

www.cdc.gov/healthcommunication/ClearCommunicationIndex

AHRQ (2013) The Patient Education Materials Assessment Tool (PEMAT)

<u>www.ahrq.gov/professionals/prevention-chronic-care/improve/self-</u> <u>mgmt/pemat/index.html</u>

CMS (2011) Toolkit for making written materials clear and effective <u>www.cms.gov/writtenmaterialstoolkit/</u>

Scientific American and The Alan Alda Center for Communicating Science at Stony Brook University (2017) Free Online Writing Workshop for Scientists http://sb.cc.stonybrook.edu/news/general/2017-06-26-scientific-american-and-aldacenter.php

Assess Reading Statistics on Microsoft

- Flesch- Kincaid estimates difficulty of reading form
- Microsoft 2007 & 2010
 - Go to File Tab; select Options
 - Click on Proofing
 - Check "Show Readability Statistics"
 - Go to Review Tab
 - Select Spelling & Grammar
 - Readability results will show after spelling has been checked

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		healthcare research			
	Goal				
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	Objections	skills and confidence in assessin	ig literacy in h	ealth care settings	
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		Material	and		
	Description.	Interactive workshop on evaluat	ting and develo	pping patient	
		centered materials.		100 million (100 million)	
	Goal:	Become familiar with methods	tor evaluating	and designing	
	Obientiere	patient-friendly written material	IS	ble to	

Lexile -

An Internet Program that Calculates Reading Level

www.lexile.com

- Scores based on sentence length and word frequency in popular literature
- Scores range from 0 (beginner level) to 2000 (higher values indicate higher reading difficulty. Aim for <900
- Save text as Plain Text file

Go to <u>www.lexile.com</u> Click on Lexile Analyzer Upload file and press analyze

Values can be easily translated to reading grade levels.

Lexile Value of $300 \rightarrow 2^{nd}$ grade Lexile Value of $400 \rightarrow 4^{th}$ grade Lexile Value of $1300 \rightarrow 12^{th}$ grade

Patient Education Materials Assessment Tool (PEMAT)

- A systematic method to assess patient education materials and evaluate their *understandability* and *actionability*
- **Understandability:** patients of diverse backgrounds and varying levels of health literacy can process and explain key messages.
- Actionability: patients can identify what they can do based on the information presented.

PEMAT-P for print materials

PEMAT-A/V for audiovisual materials e.g., videos, multimedia materials,

Health Literacy Resources

- Health Literacy Universal Precautions Toolkit: <u>http://www.ahrq.gov/professionals/quality-patient-safety/quality-resources/tools/literacy-toolkit/index.html</u>
- Health Literacy as an Essential Component to Achieving Excellent Patient Outcomes: <u>http://www.iom.edu/~/media/Files/Perspectives-</u> <u>Files/2014/Discussion-Papers/BPH-EssentialComponent.pdf</u>
- "What Did the Doctor Say?:" Improving Health Literacy to Protect Patient Safety: http://www.jointcommission.org/assets/1/18/improving_health_literacy.pdf
- Promising Practices for Patient-Centered Communication with Vulnerable Populations: Examples from Eight Hospitals: <u>http://www.commonwealthfund.org/Publications/Fund-</u> <u>Reports/2006/Aug/Promising-Practices-for-Patient-Centered-Communication-</u> <u>with-Vulnerable-Populations--Examples-from-Ei.aspx</u>
- DHHS Health Literacy Action Plan: <u>http://www.health.gov/communication/hlactionplan/pdf/Health_Literacy_Action</u> <u>Plan.pdf</u>
- CDC Plain Language Checklist: <u>http://www.cdc.gov/healthliteracy/pdf/checklist.pdf</u>



Health Literacy Information

Koh HK, Brach C, Harris LM, Parchman ML. **A proposed 'health literate care model' would constitute a systems approach to improving patients' engagement in care.** Health Aff (Millwood). 2013 Feb;32(2):357-67.

Koh HK, Berwick DM, Clancy CM, Baur C, Brach C, Harris LM, Zerhusen EG. **New federal policy initiatives to boost health literacy can help the nation move beyond the cycle of costly 'crisis care'.** Health Aff (Millwood). 2012 Feb;31(2):434-43.

Shoemaker SJ, Wolf MS, Brach C. **Development of the Patient Education Materials Assessment Tool (PEMAT): a new measure of understandability and actionability for print and audiovisual patient information.** Patient Educ Couns. 2014 Sep;96(3):395-403.

AHRQ health literacy web site

Health Literacy Tests:

- REALM and REALM-Teen
 - tdavis1@lsuhsc.edu
- TOFHLA
 - http://peppercornbooks.com/catalog
- NVS
 - http://www.clearhealthcommunication.com/physicia ns-providers/newest-vital-sign.html
- SAHLSA
 - http://www.ahrq.gov/populations/sahlsatool.htm
- •1 Question
 - Chew, L. J Gen Intern Med. 23(5) 561-4

Cautions about Assessing Health Literacy Clinically CAUTION

- Testing individual patients will **NOT confirm** their ability to understand and act on health information.
- No evidence that individual literacy testing improves health care or outcomes when testing is done strictly for clinical use.
- To get the most accurate measure of patient's specific health literacy clinically use "teach back."
- "Universal precautions" (plain language) are recommended to make materials user-friendly.
- For clinical use –test clinics /systems in the aggregate.

REALM

0-18 correct = $\leq 3^{rd}$ grade

19-44 correct = 4th-6th grade

45-60 correct = 7th-8th grade

61-66 correct = high school

45-00 correc

Davis, Fam Med, 1993

List 1	List 2	List 3
fat	fatigue	allergic
flu	pelvic	menstrual
pill	jaundice	testicle
dose	infection	colitis
еуе	exercise	emergency
stress	behavior	medication
smear	prescription	occupation
nerves	notify	sexually
germs	gallbladder	alcoholism
meals	calories	irritation
disease	depression	constipation
cancer	miscarriage	gonorrhea
caffeine	pregnancy	inflammatory
attack	arthritis	diabetes
kidney	nutrition	hepatitis
hormones	menopause	antibiotics
herpes	appendix	diagnosis
seizure	abnormal	potassium
bowel	syphilis	anemia
asthma	hemorrhoids	obesity
rectal	nausea	osteoporosis
incest	directed	impetigo

REALM - SF

		REALM-S	F Administ	rator Form	
atient ID #:		Dat	e;	i	Examiner Initials:
at (Not	scored)				
lu (Not	scored)				
		Behavior	·		
		Exercise	_		
		Menopause	_		
		Rectal	_		
		Antibiotics	_		
		Anemia	_		
		Jaundice	_		
		TOTALSCO	RE _		
Administe	ring the test:				
Suggested that patien words prov to improve providers a words."	Introduction: "P nts don't underst viders often use e communication and patients. Her	roviders often use w and. We are looking with their patients in between healthcar re is a list of medical	vords g at n order e		
"Starting a aloud to m	at the top of the l ne. If you don't re	ist, please read each cognize a word, you	n word I can	Total Correct (0-7)	Grade Level
	and move on to t	the next word.		0	\leq 3 rd grade
say 'pass' a		cipant the word list.	If the	1-3	4 th - 6 th grade
say 'pass' a Interviewe participant	er: Give the partie t takes more that	n 5 seconds on a wo	103,	-	
say 'pass' a Interviewe participant say "pass" scoring she	er: Give the partie t takes more than and point to the pet so that it is p	n 5 seconds on a wo next word. Hold thi next visible to the	5	4-6	7 th - 8 th grade

REALM - TeenS

diabetes exercise prevention asthma nausea atigue dolescent nemia etanus bronchial

f	Reading Level	Raw Score
	3rd grade and below	0-2
6	4th to 5th grade	3-4
	6th to 7th grade	5-6
6	8th to 9th grade	7-8
4	10th grade and above	9-10
l	`	

S - TOFHLA

1	PASSACE A		
	Your destar has cont you to have a		
	four doctor has sent you to have a		
	a. stom		
	b. diabe	etes	
	c. stitches		Scoring:
	d. germs		
			0-16
		C.	
	You must have an stomach when you come for		Inadequate func. HL
	a. asthma	a. is.	
	b. empty	b. am.	17-22
	c. incest	c. if.	
	d. anemia	d. it.	Marginal func. HL
		,	
	The X-ray Will from 1 to 3 to 0	10.	23-36
	a. take a. beds		Adaguata funa III
	b. view b. brains		Adequate func. HL
	c. talk c. hours		
	d. look d. diets		
	THE DAY BEFORE THE X-RAY.		
	For supper have only a snack of fruit,		
	a. little	a. toes	
	b. broth	b. throat	
	c attack	c toast	
	d nauson	d thigh	
	u. Ilausta	u. ungn	Parker, J Gen Intern Med, 1995

NVS

Nutrition Facts	
Serving Size	1/2 cup
Servings per container	4
Amount per serving	1.2.2.1
Calories 250	Fat Cal 120
	%DV
Total Fat 13g	20%
Sat Fat 9g	40%
Cholesterol 28mg	12%
Sodium 55mg	2%
Total Carbohydrate 30g	12%
Dietary Fiber 2g	
Sugars 23g	
Protein 4g	8%

* Percent 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.

6 Questions

- If you can have 60 grams of carbs for a snack - how much ice cream can you have?
- *Score* :1 point for each correct answer
 - 0-1 Inadequate literacy
 - 2-3 Marginal literacy
 - 4-6 Adequate literacy

Ordering Information

REALM and REALM-Teen

• tdavis1@lsuhsc.edu

TOFHLA, TOFHLA-Spanish and STOFHLA

http://peppercornbooks.com/catalog

NVS

 http://www.clearhealthcommunication.com/physiciansproviders/newest-vital-sign.html

WRAT

http://www3.parinc.com/products/product.aspx

Evaluation of Reading Level for Written Materials

- Flesch Kincaid Reading Level and Flesch Reading Ease:
 - Automatically bundled with Microsoft WordTests sentence complexity
- Vocabulary Profiler:
 - Helps determine uncommon words
 - Very useful for non-native English speakers
 - ex: <u>http://www.sfu.ca/~msevier/WebVocabularyProfilerCS.htm</u>
- Lexile Level
 - Analyzes both sentence complexity and word frequency
 - <u>http://www.lexile.com/analyzer/</u>
- Fry Readability Formula
 - Randomly select three separate 100 word passages
 - Count the number of sentences in each 100 word sample to the nearest tenth
 - Count the number of syllables in each 100 word sample
 - Plot the average sentence length and the average number of syllables on a Fry Graph to determine the grade level

SMOG

The "SMOG" Readability Test (Short Version)

For materials containing > 30 sentences

- Count off 10 consecutive sentences at the beginning, middle and end of the text.
- Count the number of words with 3 or more syllables in the 30-sentence sample. Answer:
- 3. Use the answer to step 2 to look up the reading grade level in the chart.

For materials containing < 30 sentences

- 1. Count the number of sentences:
- Count the number of words with 3 or more syllables in the sample: _____
- Divide the number of sentences in the sample into 30 (i.e., 30/25) and multiply this number by the number of words from step 2. Answer:
- Use the answer to step 3 to look up the reading grade level in the chart.

Note:

- A sentence is defined as a string of words punctuated with a period, exclamation point, or question mark.
- Hyphenated words are considered one word
- Numbers should be considered as if they were written out (i.e. both "25" and "twenty-five" should be considered to have 3 or more syllables).
- Proper nouns should be considered
- Abbreviations should be considered in their unabbreviated form.

"SMOG" Conversion Chart

Number of words with 3 or more syllab les in a 30 sentence samp le:	Approximate Reading Grade Level (plus or minus 1.5 grades)
0-2	4
3-6	5
7-12	6
13-20	7
21-30	8
31 - 42	9
43 - 56	10
57 - 72	11
73 90	12
91 - 110	13
111 -132	14
133-156	15
157-182	16

http://prevention.sph.sc.edu/tools/SMOG.pdf

Checklists to Evaluate User-Friendliness (Suitability)

- Osborn H. (2004) Health Literacy from A to Z: Practical Ways to Communicate Your Health Message.
- Arnold CL, Davis TC, Ohene Frempong J, et al (2006) : *Assessment of newborn screening parent education materials.* Pediatrics. 2006;117:320-5.
- Doak CC. (1996) *Teaching Patients With Low Literacy Skills*, 2nd ed., 1996.
- Rudd R. (1994) *Learner developed materials: An empowering product*. Health Education quarterly. (Fall) 1994.

Suitability Assessment (SAM)*

	Score
1. <u>Content</u>	
a) Purpose is evident	
b) Content about behaviors	
c) Scope is limited	
d) Summary or review included	
2. <u>Literacy Demand</u>	
a) Reading grade level	
b) Writing style, active voice	
c) Vocabulary uses common words	
d) Context is given first	
e) Learning aids via "road signs"	
3. Graphics	
a) Cover graphics show purpose	
b) Type of graphics	
c) Relevance of illustrations	
d) List, tables, etc explained	
e) Captions used for graphics	

Suitability Assessment (SAM)* cont.

	Score					
4. <u>Layout and Typography</u>						
a) Layout factors						
b) Typography						
c) Subheads						
 5. <u>Learning Stimulation, Moti</u> a) Interaction used b) Behaviors are modeled and c) Motivation – self efficacy 	<u>vation</u> d specific 					
6. <u>Cultural Appropriateness</u>						
a) Match in logic, language, experience						
b) Cultural image and examp	les					
Score each 0 – 2:	Total SAM score:					
0 if not suitable, 1 if ok,	Total Possible score:					
2 if superior, N/A	Percent score:					
if does not apply		*Dool 1006				