Simple Steps To Evaluate And Develop Patient Education Material

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2009
Patient Education: What We Know

- Patients trust information from their provider.
- Helpful to focus on “need to know” & “do” vs. “nice to know”
- Most patients like to take home written information
- Handouts can be used as teaching tools
- “Hand-made” handouts, can be effective- short, to the point, can be personalized.
User Friendly Does Not Mean “Dumbed Down”

- Pamphlet most effective when given by a provider who uses it often
- Racks of pamphlets least effective
- Patients with high education and income still prefer brief, simpler materials
- College educated patients picked up short, simple handout rather than thick detailed booklet
Steps To Evaluate Materials

1) Use ‘readability’ formula to estimate grade

2) Use check list to guide user-friendliness (suitability)

3) Get feedback from patients and providers

Cautions

• Reading formulas are imprecise measures

• Reading grade level of material ≠ patients’ ability to read and understand them

• To estimate ‘reading ease’ other factors also need to be considered
How To Estimate Reading Level*

- Flesch-Kincaid (on computer)
- Fry (quick assessment by hand)
- Lexile (state of the art)

*More than 40 formula give estimate of reading difficulty
Go to ‘Tools’. Click ‘Spelling and Grammar…’. Under ‘Options’ check ‘Readability Statistics’.
Lexile

- Lexile scores are based on sentence length and word frequency in popular literature. Higher values indicate higher levels of reading difficulty.

- Scores range from below 0 (representing a beginning reading level) to 2000.

- The Lexile Analyzer (internet program), calculates the Lexile score for each sample.

- Values can be easily translated to reading grade levels.

  Lexile value of:
  300 = 2nd grade
  400 = 3rd grade
  1300 = 12th grade
1. Count out three 100-word passages in your document (use passages from different sections if possible).

2. Count the number of syllables in each 100-word passage.

3. Count the number of sentences in each 100-word passage.

4. Calculate the average number of syllables per passage and the average number of sentences per passage.

5. Where those intersect on the chart is the approximate grade level of the material.
Exercise

Use Fry to assess readability of AAP print out
Children's Health Topics

School Health

Though the primary mission of schools is to educate students, schools also exercise a powerful role in shaping the health and well-being of young people. Currently approximately 55 million children are enrolled in nearly 125,000 US schools. It is estimated that by graduation each of these students will have spent 12,000 hours in a structured school environment. As such, schools represent one of the greatest opportunities to communicate important health messages to America's children and youth. By providing comprehensive health education programs, coordinated health services and a safe and healthy environment, schools may serve as one of the most important public health intervention sites to address issues such as childhood overweight, chronic disease prevention and risky health behaviors.

Schools not only have an opportunity to teach and reinforce important health messages, but they also have the responsibility of keeping students and staff safe and healthy before, during and after school hours. This includes ensuring proper infection control, assessing and minimizing risks of violence and injury, and meeting the health needs of staff and students, including those with special health care needs.

The American Academy of Pediatrics offers pediatricians, school health professionals, parents, teachers, and school administrators numerous resources to learn about and use effective health and safety policies and practices to promote health and prevent disease in the school setting.
# Reading Level ≠ Comprehension

% Patient Comprehension by Literacy

<table>
<thead>
<tr>
<th>Prescription Label Instructions</th>
<th>Literacy Level</th>
<th>% Comprehension</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Glyburide, 5 mg</strong></td>
<td>High (≥9&lt;sup&gt;th&lt;/sup&gt;)</td>
<td>71%</td>
</tr>
<tr>
<td>Take two tablets by mouth twice daily.</td>
<td>Low (≤6&lt;sup&gt;th&lt;/sup&gt;)</td>
<td>33%*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Take 2 pills by mouth at 8 am and 2 pills at 6 pm.</td>
<td></td>
<td>90%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>76%</td>
</tr>
</tbody>
</table>

*<p><sup>*</sup>p<0.001, ‡ p<0.01

Davis T, *JGIM*, In press.
User-Friendliness: What Do We Mean?*

• Organization and complexity of content
• Layout and length - appearance of format and cover
• Overall tone and cultural appropriateness

*3 References and links to checklists – last 2 slides
Are Patient Education Materials User Friendly?

• Check reading level (tools, spelling, options, readability)
• Aim for <8th grade
• Ask following 5 questions
Is The Layout User-Friendly?

1. Is the layout user-friendly?
   First impressions are important!
   Does the pamphlet:
   • Have ample white space?
   • Limit paragraphs to 4 to 5 lines?
   • Use bullets, boxes, indentation, bolding, vertical lists?
   • Use bifold rather than trifold format?
   • Use font that is 12 point or larger?
   • Avoid use of ALL CAPS, italics and specially fonts in large blocks of text?

   Why does my baby need another hearing test?
   • Some babies may need another test because:
     - Picked up in the ear:
     - Baby was moving a lot.
     - Baby has hearing loss.
   • Special babies who need another test have normal hearing.
   • Some will have hearing loss.

   Why is it important to have another hearing test as soon as possible?
   • Testing is the only way to know if your baby has a hearing loss.
   • The earlier a hearing loss is found, the better it is for a baby.

   Finding hearing loss early can make a big difference in your baby's life.
Do Illustrations Convey The Message?

2. Do illustrations convey the message?

A picture may be worth a thousand words – but which thousand?

Are pictures and captions:
• Serving a purpose (they are not just decorative)?
• Clear and realistic?
• Familiar and likely to be understood?
3. Is the message clear?

- Is the message obvious on the cover, title, and headings?
- Are key messages easy to pick out?
- Does pamphlet get to the point quickly?
- Does pamphlet easily inform the readers of what they need to know and do?

Does cover graphic:

- Target expectant parents?
4. Is the information manageable?

Does the pamphlet:

- Focus on "need to know" rather than "nice to know"?
- Stick to a few key messages to avoid information overload?
- Limit the use of graphs and statistics?

There are two types of hearing screening tests that may be used with your baby. Auditory Brainstem Response Testing (ABR) tests the infants’ ability to hear soft sounds through miniature earphones. Sensors measure your baby’s brainwaves to determine if sounds are detected normally. Otoacoustic emissions (OAE) are measured directly with a miniature microphone and sent to a special computer to determine your baby’s hearing status. Both tests are very safe and take only minutes to evaluate each ear. Most babies sleep through the hearing screening tests. (College reading level)

- The test is safe and painless and can be done in about ten minutes.
- Most babies sleep through the test.
- You will get the test results before you leave the hospital. (6th grade reading level)
Does Reader See This Is “Meant for Me”?

5. Does the pamphlet make the reader feel "this information is meant for me"?

Does the pamphlet:

• Use a personal, conversational tone rather than a textbook or bureaucratic one?
• Focus on parent rather than on the NBS program?
• Use familiar words, situations and pictures?
• Address the reader; personalize information ("your baby" not "the baby")?
• Show cultural sensitivity?

The Department of Health Services (DHS), Children’s Medical Services Branch (CMS) has implemented a statewide comprehensive Newborn Hearing Screening Program to help identify hearing loss in infants. The program helps guide families to the appropriate services needed to develop communication skills. (College reading level)

Why should my baby’s hearing be tested?

• Most babies can hear fine when they are born, but some cannot.
• We test all babies to find the ones who may not be able to hear us.
• Testing is the only way to know if a baby has hearing loss. (6th grade reading level)
Exercise

Use these 5 questions to assess user friendliness of poster

1. Is the layout user-friendly?
2. Do illustrations convey the message?
3. Is the message clear?
4. Is the information manageable?
5. Does it look like it's meant for me?
Ask Your Doctor About Baby Shots

1. What shots will my child get today?
2. How do these shots help my child?
3. Are there any side effects?
4. What do I do if my child has a side effect?
5. What are the serious risks of the shots?
6. Are there some children who should not get these shots?
7. When are the next shots?

You Can Protect Your Child
Are Rx Drug Labels User Friendly?

- Layout
- Illustrations
- Clarity
- Manageable
- Meant for me
## Suitability Assessment (SAM*)

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

*Doak, 1996*
<table>
<thead>
<tr>
<th>Section</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Layout and Typography</td>
<td></td>
</tr>
<tr>
<td>a) Layout factors</td>
<td></td>
</tr>
<tr>
<td>b) Typography</td>
<td></td>
</tr>
<tr>
<td>c) Subheads</td>
<td></td>
</tr>
<tr>
<td>5. Learning Stimulation, Motivation</td>
<td></td>
</tr>
<tr>
<td>a) Interaction used</td>
<td></td>
</tr>
<tr>
<td>b) Behaviors are modeled and specific</td>
<td></td>
</tr>
<tr>
<td>c) Motivation – self efficacy</td>
<td></td>
</tr>
<tr>
<td>3. Cultural Appropriateness</td>
<td></td>
</tr>
<tr>
<td>a) Match in logic, language, experience</td>
<td></td>
</tr>
<tr>
<td>b) Cultural image and examples</td>
<td></td>
</tr>
<tr>
<td>Score each 0 – 2:</td>
<td></td>
</tr>
<tr>
<td>0 if not suitable, 1 if ok,</td>
<td></td>
</tr>
<tr>
<td>2 if superior, N/A</td>
<td></td>
</tr>
<tr>
<td>if does not apply</td>
<td></td>
</tr>
</tbody>
</table>

Total SAM score: __________
Total Possible score: ________
Percent score: ______________

*Doak, 1996*
Exercise

Use SAM* to assess suitability of AAP print out

Note: Reading level is 1520 according to the Lexile

*Doak CC, Doak LG, Root JH. Teaching Patients With Low Literacy Skills, 2nd ed., 1996
EAR INFECTIONS

Ear infections are common in young children resulting in millions of office visits and antibiotic prescriptions annually. Acute otitis media (AOM) includes intense signs and symptoms of infection and inflammation and is the most common bacterial illness in children for which antibacterial agents are prescribed in the United States. Otitis media with effusion (OME) is even more common. About 90% of children have OME at some time before school age, most often between ages 6 months and 4 years. OME often follows colds and viral infections or actual ear infections and will usually clear up on its own without treatment.

In May 2004, the American Academy of Pediatrics (AAP) and the American Academy of Family Physicians (AAFP) jointly released the first national clinical practice guideline on appropriate diagnosis and treatment for AOM. The guideline outlines steps for more accurate diagnosis, encouraging pain relief, reducing antibiotic-related adverse effects, and targeting antibiotics for children likely to receive the most benefit.

The clinical practice guideline on OME also was released in May 2004 by the AAP, AAFP, and the American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS) to provide evidence-based recommendations on diagnosing and managing OME in children. The OME guideline emphasizes appropriate diagnosis and provides management options including observation, medical intervention and referral for surgery for children who are not at risk.
Discussion

• What are the pros and cons of using SAM and/or the 5 Questions to evaluate user-friendliness of health materials?
Developing User-Friendly Materials

- Is not rocket science
- But harder and more tedious than it seems
- Patient input needed (for comprehension, organization, clarity)

“It’s time we face reality, my friends. … We’re not exactly rocket scientists.”
6 Steps to Developing Health Materials that are Evidence Based and User Friendly

1. Review literature and current materials
2. Conduct focus groups of patients and providers to get feedback on current material and the “need to know and do”
3. Develop iterative drafts of a mock up (limit scope to “need to know and do”)
4. Conduct iterative cognitive interviews with target audience
5. Continue to tweak mock up
6. Evaluate patient satisfaction and understanding
Avoid a Common Mistake

Most materials not organized from pts’ perspective:

Medical model
- Description of problem
- Statistics on incidence and prevalence (tables)
- Treatment forms and efficacy

Is more helpful to use:

Newspaper model
- Gives most important information first

Health belief model
- Your baby may be at risk
- There is something you can do about it
- Your baby will get personal benefits if you do
Common Mistakes in Developing Materials

- Lack of patient and provider input (for content, clarity and comprehension)
- Too much information – key messages buried
- Not attending to white space
- Illustrations are only decorative
- Lack of clear, compelling cover
- Not considering how patients will get it
Distribution And Sustainability

• How and when will patients get info?
  – Racks of pamphlets least effective
• How will providers get info?
• Where will materials be kept?
• Computer materials are free but where and how good is printer?
• What is plan to update?
• How will patient education plan be sustained?
Hidden Problems With Video Tapes, CD, Etc.

- Often too long (limit to 4-6 minutes)
- Too much “talking heads”
- Organized using medical model not patient-centered (focus on need to know and do)
- Attend to ‘tone’, patient emotions
- What staff will show? Where? Teachable moment

*Little is known about efficacy of using multimedia tools over print media*
Patients Self-Management Guide

- Developed by a team from LSU, UNC, UCSF
- Grounded in health literacy and health behavior theory and created with patients and providers
- 16 focus groups in both public and private sectors
- 70 individual cognitive interviews in English and Spanish
- English, Spanish 5th grade level

*Funded by American College of Physicians Foundation*
Exercise

What’s different about this Guide?

• What do you like about this Guide?
• What are the main points?
• Readability is 5th grade, is it user-friendly?

What about the Spanish Guide?

• How is the language?
• Is it culturally appropriate?
Content of the Guide

• Information limited to avoid overwhelming patients

• 6 topics identified in focus groups as most important
  – Introduction to diabetes
  – Diet
  – Exercise
  – Monitoring blood sugar
  – Taking medication (pills)
  – Insulin
Focus Is On Doing

You Can Do It!

Choose one of these easy ideas or write down 1 or 2 things you will do for the next few weeks. Remember, little changes in your eating can make a big difference in your blood sugar.

- I will switch from juice or soda to diet soda.
- I will eat breakfast every morning.
- I will order regular size instead of super size at fast-food restaurants.
- I will pack a healthy lunch some days instead of eating out.
- I will keep healthy snacks on hand, like cottage cheese, carrot sticks, hard-boiled eggs, unbuttered popcorn, or sugar-free popsicles.
- I will eat slowly, and wait before getting a second serving.
- 
- 
- 
- “It was hard to stop drinking regular soda, but now I like diet drinks and water.”
ACPF Guide is Patient-Centered

- Warm, conversational tone
- 5th – 7th grade reading level
- People are real, healthy looking

Example:

*Having diabetes is life-changing.*

*People with diabetes say they sometimes feel overwhelmed. Some people feel alone. You are not alone. Millions of people have diabetes.*
ACPF Guide is Practical and Personal

• Patients’ voices illustrate concrete, practical tips

• Patients suggest achievable goals

• Authentic photos help tell the story

Snack attack!

What should you do when you get hungry between meals? Snack on these:

Keep foods like these close by so you can get to them easily when you feel hungry. Stay away from foods that are high in carbs or sugar (like chips, crackers, candy bars, or pretzels).

“I keep a little bag of nuts in my desk at work. I snack on them in the afternoon.”

“I eat sugar-free gelatin for my snack and dessert. It is so easy to make!”
Everyone Looks At Pictures First

Particularly like pictures of food comparisons.

Too much

Right size
Photographs Resonate with Patients

Standard Guide

ACPF Guide
Photographs are Preferred to Clip Art

How much is a serving of vegetables?

Examples of 1 serving:

- 1/2 cup cooked carrots
- 1/2 cup cooked green beans
- 1 cup salad

Examples of 2 servings:

- 1/2 cup cooked carrots + 1 cup salad
- 1/2 cup vegetable juice + 1/2 cup cooked green beans

Examples of 3 servings:

- 1/2 cup cooked greens + 1/2 cup cooked green beans and 1 small tomato
- 1/2 cup broccoli + 1 cup tomato sauce

Vegetables

The good news is most vegetables are low in carbs, so you can eat as much of these as you want.

- Broccoli
- Cabbage
- Spinach
- Green Salad
- Carrots
- Celery
- Bell peppers
- Peppers
- Cucumbers
- Jicama
- Mushrooms
- Tomatoes
- Potatoes
- Corn
- Sweet Potatoes
- French Fries

Watch out! These vegetables are starchy and are high in carbs! Keep the portion sizes small.
Nuts and Bolts Exercises: Write in Plain English

• Familiar words (ideally ≤ 3 syllables)
• Conversational tone
• Personal pronouns
• Avoid jargon, abbreviations
• *Tip: Using conversational language and warm tone will lower reading level and limit complexity and jargon*
Written Materials: What We Know

- Patients are more likely to keep high quality materials
- Written materials, when used alone, will not adequately inform
- Simplified materials are necessary but will not solve communication problems
- User-friendly material is a great teaching tool
Tips To Use Material As Teaching Tool

1. SLOW DOWN
2. Limit Information
3. Point to key concepts in handout
4. Be specific and concrete – not general
5. Repeat and summarize
6. Use teach back method
7. Be positive, empowering
Brief Pt Education That Works

• Introduce Guide

• Ask: Is there anything you would like to do this week to improve your health?

• Help set a specific action plan: After patient states general goal, narrow to achievable baby step, assess confidence

• Follow-up phone call: maintain, modify, set new Action Plan
Goal Setting: Lessons Learned

- Setting goals with provider was not a familiar strategy
- Patients 1st goal too general “I want to lose weight”
- Many physicians expect too big a step or too many steps
What is an Action Plan?

- Very specific, easy-to-achieve, short-term activity a patient chooses to do to reach a long-term goal
  
  - Long-term goal: lose weight
  - Action plan: I will walk around the block before I sit down to watch TV after dinner 3 times during the next 7 days.

Action Plans Can Be Powerful

• Created by the patient (Physician only acts as facilitator).

Magic of a “Baby Step”

• It doesn’t matter what the step is
• Personally relevant and immediate
• Engages patient in self-care
• Increases self-efficacy
• Teaches problem-solving
Evaluation Study

225 patients, 3 sites, English and Spanish (76% minority; DM 9yrs; BMI 36; A1C 8.6)

1. Introduce the guide
   Ask: Is there anything you would like to do this week to improve your health?

1. Brief counseling by non-medical staff to help patient set Action Plan

2. Follow up call at 2 weeks and 4 weeks, visit at 12-16 weeks

## Patients Recalled Action Plans

**Changed Behavior And Problem Solved**

<table>
<thead>
<tr>
<th></th>
<th>n=250</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2 Week Calls</strong></td>
<td></td>
</tr>
<tr>
<td>- Recall AP</td>
<td>96%</td>
</tr>
<tr>
<td>- Behavior sustained</td>
<td>75%</td>
</tr>
<tr>
<td>- Other behavior</td>
<td>56%</td>
</tr>
<tr>
<td><strong>4 Week Calls</strong></td>
<td></td>
</tr>
<tr>
<td>- Recall AP</td>
<td>94%</td>
</tr>
<tr>
<td>- Behavior sustained</td>
<td>69%</td>
</tr>
<tr>
<td>- Other behavior</td>
<td>34%</td>
</tr>
<tr>
<td><strong>Final Visits</strong></td>
<td></td>
</tr>
<tr>
<td>- Recall AP</td>
<td>88%</td>
</tr>
<tr>
<td>- Behavior sustained</td>
<td>67%</td>
</tr>
<tr>
<td>- Other behavior</td>
<td>45%</td>
</tr>
</tbody>
</table>

- Most patients (89%) chose diet and exercise
- Equally effective with low and high literacy patients

Significant Improvement
In Pre- and Post-tests*

- Knowledge
- Self-care of diabetes
- Problem solving ability
- Confidence
- Diabetes distress
- Taking ownership of health care

*p<0.01

Providers Response to Using Guide and 3 Step Approach to Education

- Quickly get health literacy principles looking at Guide.
- Apply baby step method to their approach to patients (and their own lives).
- Medical students appreciate structure of “baby step” approach to patient ed.
- Focus on small changes helps patients AND providers problem-solve and feel positive.
Is Cover Compelling?

Standard Cover

ACPF Cover
Small Group Exercise to Improve Your Health Materials

1. Plan
   - Who is your audience? How will they get material?

2. Focus
   - What is your message?
   - What are 3-5 key points you want patient/family to know and do?
   - Organize from patient’s point of view

3. Mock Up
   - Will help to limit messages, improve format
   - Tip: use bi fold - tri folds confuse patients

4. Attend to cover
   - Think of compelling title, picture that conveys message and speaks to target audience
Nuts and Bolts to Edit Your Materials

• Short sentences (8-10 words)
• Short paragraphs (3-4 lines, 1 idea)
• Avoid ALL CAPS and cutsie font
• Use simple headers, bolding, boxes (lump and clump info)
• Use lots of white space
• Use fonts > 12 point
  – Arial, Times New Roman
Pictures Help Carry Message

- Use appealing pictures
- Avoid clipart, complex, scientific drawings
- Place next to text
- Put captions under graphics
Take Home Messages

• Education needs to be ‘patient-centered’ – focused on what the patients need to know and do

• Resources are available to help design materials

• Patients and providers need to be involved in development

• For research – assess patient knowledge, attitude, behavior, satisfaction and feasibility. Changes in health outcomes may not be feasible.
Summary/Take-Aways:

- What have I learned that:
  - Will help me evaluate or develop patient education materials?

- What have I learned about the components of user-friendly materials that I can apply to oral patient education?
Checklists to Evaluate User-Friendliness (Suitability)

- Centers for Disease Control and Prevention. Simply Put: A guide for creating easy-to-read print materials that your audience will be able to read and use, 3rd ed., 2007.
- Osborn H. Health Literacy from A to Z: Practical Ways to Communicate Your Health Message. 2004
- Doak CC. Teaching Patients With Low Literacy Skills, 2nd ed., 1996.
- Rudd R. Learner developed materials: An empowering product. Health Education quarterly. (Fall) 1994.
Helpful Links

Maine Health Literacy (great conference)
• http://www.mainehealthliteracy.org/materials.php

Rima Rudd
• http://www.hsph.harvard.edu/healthliteracy/

Helen Osborne
• http://www.healthliteracy.com/

NIH
• http://www.nih.gov/icd/od/ocpl/resources/healthliteracyresearch.htm

AHRQ
• http://www.ahrq.gov/
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