

# Developing an Instrument to Assess the Understandability and Actionability of Health Information Materials: Results, Challenges and Lessons for the Field

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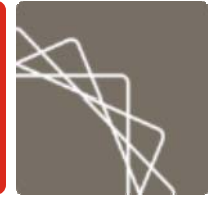


BOLD  
THINKERS  
DRIVING  
REAL-WORLD  
IMPACT

Presentation at the Health Literacy Annual  
Research Conference (HARC) in Bethesda, MD  
October 23, 2012

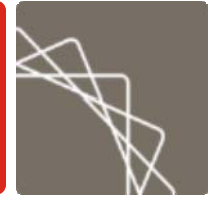


# Acknowledgements



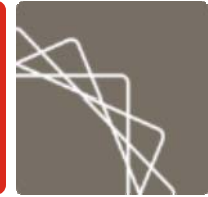
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# Disclosures



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- The content of this presentation does not necessarily reflect the views or policies of the Department of Health and Human Services, nor does the mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government. The author [presenter] assumes full responsibility for the accuracy and completeness of the ideas presented.

# Background



- Health information materials are often poorly understood by patients, especially those with limited health literacy.
- There are a myriad of patient education materials from which someone must choose
- Some instruments available to assess materials
  - Many readability formulas (e.g., Fry formula, SMOG, Flesch)
  - Few instruments to assess suitability / comprehensibility (e.g., SAM, SAM-CAM, others under development)

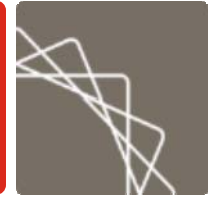
# Background

- While several instruments and formula are available, few assess print and audiovisual materials.



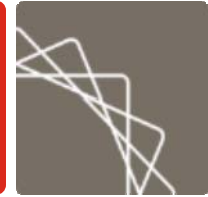
- Actionable information has become recognized as an important aim of patient education materials.
  - No instrument assesses this.

# Aim



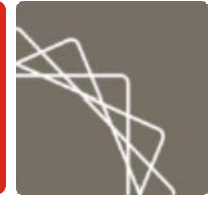
- To develop a reliable and valid instrument to assess the understandability and actionability of health information materials.
  - **Understandability:** Health education materials are understandable when consumers of diverse backgrounds and varying health literacy *can process and explain key messages.*
  - **Actionability:** Health education materials are actionable when consumers of diverse backgrounds and varying health literacy *can identify what they can do based on the information presented.*

# Health Information Rating System (HIRS) Characteristics



- A systematic method to evaluate and compare the *understandability* and *actionability* of materials.
- For use by professionals (e.g., clinicians, health librarians) not formally trained to use the instrument (i.e., untrained).
- Can assess print or printable (i.e., PDF, websites) and audiovisual materials (i.e., videos, interactive media).
- Using the HIRS does not require:
  - Background – development, with whom it was tested
  - Knowing who the target audience is
- Does not assess *comprehensiveness*, *clinical accuracy* or *readability*; can use in conjunction with readability formulas

# HIRS - Understandability



- Understandability Constructs

- Content
- Word Choice and Style
- Use of Numbers
- Organization
- Layout and Design
- Use of Visuals

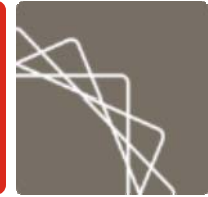
## Example Item

The material uses visual aids whenever they could make content more easily understood (e.g., illustration of healthy portion size).

- Total of 24 items for Understandability



# HIRS – Actionability



- Actionability
  - Consists of 8 newly-developed items

## Example Item

The material breaks down any action(s) into manageable steps.

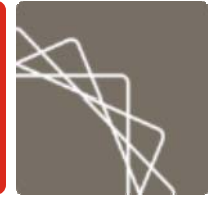
### **Non-manageable steps:**

- Check your blood sugar level.

### **Manageable steps:**

- Insert a new test strip into the meter.
- Wash your hands.
- Gently prick the side of your finger with the lancet to draw out a drop of blood.
- Touch the test strip to the drop of blood.

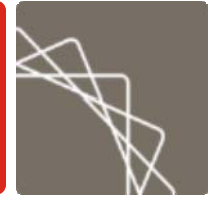
# Development Approach



Multi-stage, systematic approach to develop the HIRS

- **Stage 1:** Identified and synthesized evidence from 22 (of 31) existing instruments/guides to assessing health information materials. Identified 64 potential items.
- **Stage 2:** Assessed face and content validity of the constructs and 36 items using an expert panel. Experts indicated whether they thought a material's performance on each item would affect the understandability or actionability of a material.
  - Retained items experts agreed on, dropped poor ones, and refined others

# Development Approach

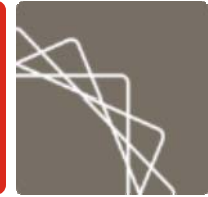


- **Stage 3:** Assess the reliability (external consistency: % agreement & Kappa) & internal consistency (Cronbach's  $\alpha$ ) – multiple rounds

## Round 1 and Round 2 Rating Task

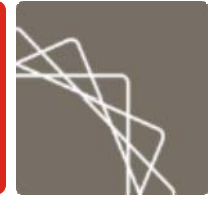
	ROUND 1	ROUND 2
<b>Raters</b>	8 raters (4 English; 4 Spanish)	12 raters
<b># of Materials</b>	16 materials	12 materials
<b>Material Types</b>	Printable and audiovisual	Printable and audiovisual
<b>Material Language</b>	English and Spanish	English only
<b>Material Topics</b>	Colonoscopy (both), Inhaler (Eng), Hypertension (Span)	Colonoscopy, Inhaler, Cholesterol, Diabetes
<b>Response Scale</b>	4-point (Str Disagree – Str Agree)	2-point (Disagree – Agree)

# Development Approach



- **Stage 3: Preliminary Results**
  - Strong internal consistency ( $\alpha$ ) both Rounds
  - Slight/fair agreement across 4 & 12 raters (Rounds 1 & 2)
  - Substantial agreement in pairs of raters (Kappa) in Round 2
  - Better agreement (Kappa) with 2-pt vs. 4-pt response scale
  - For both internal consistency and external consistency (IRR) results for actionability were better than understandability
- Next Steps: Refine items based on previous rounds' results and debriefs with raters; conduct another round of testing.

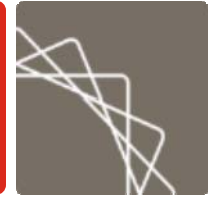
# Development Approach



- **Stage 4:** Assess construct validity of the HIRS by conducting testing with 48 consumers
- **Stage 5:** Finalize the HIRS and instructions.

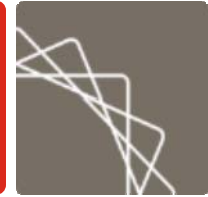


# Challenges and Lessons



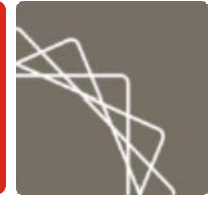
- Dichotomous response options produced greater inter-rater reliability
- Adding examples to items increased reliability
- Developing a reliable instrument using ‘untrained’, lay professionals is a ‘high bar’
  - Criteria that health literacy experts may readily recognize in a material are not as self-evident to ‘lay’ raters
- Limited evidence on what audiovisual characteristics affect understandability
- Challenging to test actionability of materials independent of understandability

# Summary



- Health Information Rating System (HIRS)
  - To be completed Summer 2013
  - Does not assess *comprehensiveness, clinical accuracy* or *readability*; can use in conjunction with readability formulas
  - For both audiovisual and print/printable materials
  - For professionals who are making decisions about which patient education materials to share with patients
    - Does not require formal training to use the HIRS
    - Does not require information beyond the actual material

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