

# Development of Meaningful Survey Instruments

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1-3pm (break at 2pm)

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[www.gim.med.ucla.edu/FacultyPages/Hays/](http://www.gim.med.ucla.edu/FacultyPages/Hays/)



# Today's Bottom Line Messages

- A good measure does not fall from the sky.
- There are several systematic steps to follow.
- Developing a good measure takes a substantial investment of time and resources.
- However, ...
  - ◆ GE principle
  - ◆ When all else fails,



# A Good Measure

- Same people get same scores
- Different people get different scores
- People get scores you expect
- Measure is feasible and practical

# Measurement Steps

- Review literature
- Focus groups
- Define constructs
- Draft items
- Pretest (cognitive interviews)
- Revise and finalize items

# Review Literature

- [www.ingenta.com](http://www.ingenta.com)
- <http://www.library.ucla.edu/libraries/biomed/>



# Search Internet

- <http://www.google.com/>
- <http://www.sf36.com/>
- <http://www.rand.org/health/surveys.html>
- <http://www.qlmed.org/>
- <http://www.themeasurementgroup.com/>

# Literature Review

- Edgell, E. T., et al. (1996). A review of health-related quality-of-life measures used in end-stage renal disease. Clinical Therapeutics, 18, 887-938.
- Coons, S. J., et al. (2000). A comparative review of generic quality of life instruments. Pharmacoeconomics, 17, 13-35.
- Golomb, B., Vickrey, G., & Hays, R. D. (2001). A review of health-related quality-of-life measures in stroke. Pharmacoeconomics, 19, 155-185.

# Focus Groups

- Discuss feelings, attitudes, perceptions
- Learn
  - ◆ Vocabulary and thinking patterns
- Conversational meeting
  - ◆ Moderator and 6-10 people
  - ◆ Questions posed
  - ◆ Group synergy
  - ◆ Economical



# Focus Group Logistics

- HSPC/IRB
- Recruitment and payment
- Moderator and note-taker
- Visitors
- Audio-record (backup)
- Background questionnaire

Focus group excerpts follow

## ■rhays:

■Example of unique issue that would be missed if survey only asked whether Jenny cut down on work instead of asking whether she adjusts her work behavior to ensure she doesn't deplete her energy reserve.

■Question 14a

# Conservation of Energy

- Because of Hepatitis C, Jenny has had to set “boundaries” with people. For example, she has had to close her office door and say “no” at times.
- She has had to figure out how much energy she has to get to the finishing line. “If I don't have enough energy to get to the finishing line, it means I won't be available for everyone else.”

■rhays:

■Question 15d,  
16e, 25g

# Longer Recovery Period

- Candy has a full-time job (fixing earthquake damage) and “needs the rest of the day to be able to do that.”
- She engages in heavy work, but it takes her several hours to recover from it.

■rhays:

■Quest. 4a-d  
may not capture  
this very well.

# Worklife accommodation and physical limitations

- Manny is a self-employed builder who has owned his business for 25 years. He goes to bed at about 9:00 and gets up about 5:30 am. He wakes up several times during the night.
- Manny has changed from participating actively on the job site with his employees to only setting up the job and supervision.

■rhays:

■Questions 12a,  
b, n

# Symptoms of disease

- Since he went off interferon, Manny has had a lot of muscle fatigue. His legs cramp when he surfs.
- He can't arm wrestle his 12-year old son, etc. Forcing himself to do even 10 pushups now is difficult.
- Manny has also been getting little pimples on his legs ("cryo globulins") due to inadequate blood circulation.

■rhays:

■Questions 14c,  
14f, 27a

# Side effect of medicines

- When taking interferon Manny said that he tended to get angry and yell and scream at his wife.
- Manny also indicated that he gets a stomach ache daily somewhere between noon and 2 pm whether or not he has eaten. “All of the sudden I feel nauseous.”

■rhays:

■Question 14e,  
16d, 26e

# Daily unpredictability; change in relationships

- Tammy lost her best friend as a result of hepatitis C, because the friend didn't like her last minute cancellations caused by the disease.
- However, it has brought her very close to her spouse—he is very supportive and even “babies” her now.

■rhays:

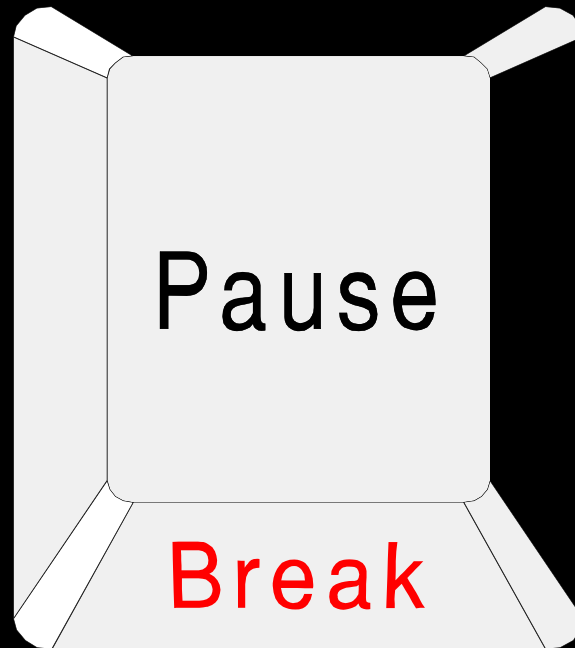
■Questions 26e,  
i, m

# Keeping disease secret from others

- Fred only recently told other people that he had hepatitis C (other than his wife). He told a few people and recommended that they get checked for it themselves.
- He is more comfortable telling people now because he has more information about the disease and can explain what it is.



# 10 Minutes



# Draft Items

- Educational level of target audience
- Appropriate time frame
- Response choices



# Questionnaire Writing



- “Cut and try, see how it looks and sounds, see how people react to it, and then cut again, and try again” (Converse & Presser, 1986, p. 78)

# Educational Level



- Literacy expert
- Readability indices

Morales et al. (2001).  
Readability of CAHPS® 2.0  
child and adult core  
surveys. In M. L. Cynamon  
& R. A. Kulka (eds), Seventh  
Conference on Health  
Survey Research Methods  
(pp. 83-90). DHSS  
Publication No. (PHS)  
01-1013, Hyattsville,  
Maryland.

# Appropriate Time Frame

- Implicit now
- Last 4 weeks versus last month
- Last 6 months
- Last 12 months

# 5-7 Well-Chosen Response Options

- Threshold for reliable assessment
- Strongly correlated with responses to items with more choices
- Miller, D. G. (1956). The magical number seven, plus or minus two: Some limits on our capacity for processing information. Psychology Review, 2, 81-96.



# How Tall Is Ted?

- Very tall (+3)
- Moderately tall (+2)
- Tall (+1)
- Short (-1)
- Moderately short (-2)
- Very short (-3)

*(r = 0.94)*

# Choice of Response Alternatives

- Respondents assume:
  - ◆ Average behavior (attitude) is located in middle of scale
  - ◆ Extreme behavior located in extremes of scale.



# How Many Hours a Day Do You Watch TV? (A)

- Up to  $\frac{1}{2}$  hour
- $\frac{1}{2}$  hour to 1 hour
- 1 hour to 1.5 hours
- 1.5 to 2 hours
- 2 hours to 2.5 hours
- More than 2.5 hours

# How Many Hours a Day Do You Watch TV? (B)

- Up to 2.5 hours
- 2.5 hours to 3 hours
- 3 hours to 3.5 hours
- 3.5 hours to 4 hours
- 4 hours to 4.5 hours
- More than 4.5 hours

# Percentage of Sample Who Reported Watching TV > 2.5 Hours Per Day

- A: 16%
- B: 38%

# Goals of Pretesting

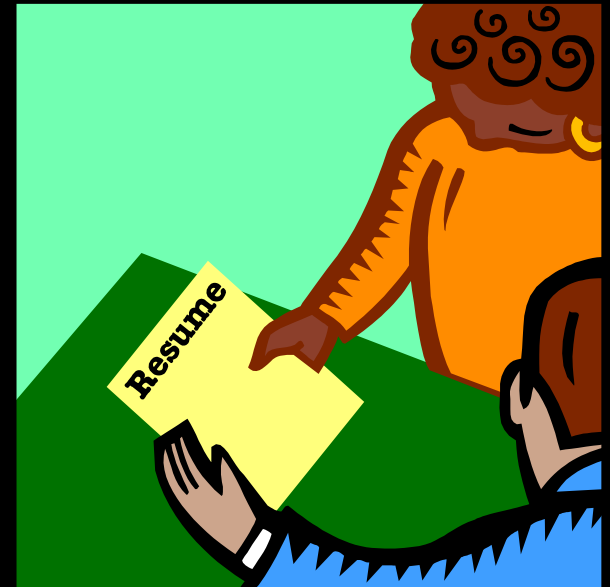
- Identify potential problems
  - ◆ Item stem or response options
  - ◆ Comprehension
  - ◆ Retrieval of information
  - ◆ Skip patterns
  - ◆ Response burden

# Cognitive Interviews

- “Think aloud”
- Intermittent probes
- Retrospective recall

# Think Aloud

- Participant verbalizes what they are thinking when they complete a survey or are interviewed.



# Intermittent Probe (A)

- Do you have one person you consider to be your personal doctor or nurse? Yes/No
- *Is this person a medical doctor, a nurse, or what?*

# Intermittent Probe (B)

- *Other than a medical doctor, nurse practitioner, physician's assistant, nurse, or nurse-midwife, is there anyone else you consider to be a health care professional?*



# Intermittent Probe (C)

- *Is “health care professional” the way you would refer to this collection of people or would you use different words to describe a medical doctor, nurse practitioner, physician’s assistant, nurse, or nurse-midwife?*

# Intermittent Probe (D)

- *Questions 20 and 21 were similar (read both questions again). Which answer choices were easiest for you? Never to always or Poor to Excellent?*
- *Why?*
- *Do you think these two questions measure the same thing?*

# Intermittent Probe (E)

- In the last 6 months, how many visits did you make for yourself to a doctor's office or clinic? (Do not include staying overnight in a hospital, or visits to a dentist.)
- *Tell me about these visits. Who did you visit each time? Did you include visits to chiropractors?*

# Intermittent Probe (F)

- In the last 6 months, how often do you think the chiropractors you saw listened carefully to you?
- *What do you think of when I said “listened carefully”? Would you have answered differently if I had asked you “how often do you think the chiropractors you saw listened to you?”*

# Retrospective Recall

- Ask probes after the interview or survey is completed.



# After all this upfront work, then you can ...

- Collect data
- Analyze data
  - ◆ Friday AM, 8/23, class
- Write-up results
- Questions?
  - ◆ How does the person who drives the snowplow get to work?