Overcoming Cognitive & Design Barriers

Completion of CAHPS Surveys

Vulnerable Populations

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Procedure-based Performance Measures

Performance by the Structure of Healthcare

- Availability of prevention and treatment services

- Performance scores peaked and clustered nationally (NCQA)

- Less reliable at discerning quality-of-care across health plans

- Diminished utility for accreditation benchmarking

- Diminished utility for comparative performance rating

Non-procedure-based Performance Measures

Performance by the Process of Healthcare

- Patient-centered <u>reporting</u> of experiences with health care

- Consumer <u>rating</u> of health plans, clinicians and groups
- Deep well of variables for comparative performance rating
  - Demographics
  - Satisfaction trends
  - Rating trends

CAHPS

Consumer Assessment of Healthcare Providers and Systems

- Health Plans
  - CAHPS 5.0 Adult and Child Commercial
  - CAHPS 5.0 Adult and Child Medicaid

- Delivery Systems
  - CAHPS 2.0 Clinician and Groups

- Supplemental Items
  - Cultural Competency, Health Literacy, Health IT
  - *Patient Centered Medical Home*

Vulnerable Populations Suboptimal Response

- Socio-epidemiology
  - Ethno-medical: Cultural mores; perceived value
  - Socio-economic: Access & utilization; *education & literacy*

- Socio-political
  - Immigration: Fear of deportation; Trust
  - Incarceration: Perception of health systems; Trust
  - Social Isolation: Homelessness; addiction; Trust

Vulnerable Populations Suboptimal Response

Communication

- Language: Idiomatic variation in use
- Literacy: Text challenges
- Survey Literacy: Familiarity & experience
- Oracy: Verbal Compliment to written information
- Phone: Cell use; trust (BRFSS very low response)
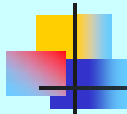- Mail: Chore; trust

Need for <u>Cognitive Balance</u> in Survey Research

<u>Cognitive Capacity</u>
- Aging
- Chronic diseases
- Medicines
- Stress

<u>Cognitive Demand</u>
- Survey design
- Research design
- Setting

Assessing Cognitive Demand
Display Design Principles

Perceptual:
- ✓ Legible displays
- ✓ Top-down processing
- ✓ Redundancy gain

Attention:
- ❖ Minimize access cost
- ❖ Proximity compatibility principle

Memory:
- ❑ Consistency
- ❑ Predictive aiding
- ❑ Visual information

<u>Handout</u>
Cognitive Display & Design Principles for Cross-cultural Survey Development

Assessing Cognitive Demand
Cognitive Design Principles

1. Simplicity: Graphic complexity; readability

2. Natural Order: Reading flow left-right, top-bottom

3. Attractiveness: User-friendly design [Imagery, white space]

4. Consistency: Item type; response tasks; variation in readability

5. Clarity: Navigation; wording; verbiage

SNACC

Hand Out: *Patient Centered Medical Home Item Examples*

CAHPS
Patient Centered Medical Home Supplemental Items

16. In the last 12 months, when you phoned this provider's office **after** regular office hours, how often did you get an answer to your medical question as soon as you needed?

    ❑ [1]Never
    ❑ [2]Sometimes
    ❑ [3]Usually
    ❑ [4]Always

17. Some offices remind patients between visits about tests, treatment or appointments. In the last 12 months, did you get any reminders from this provider's office between visits?
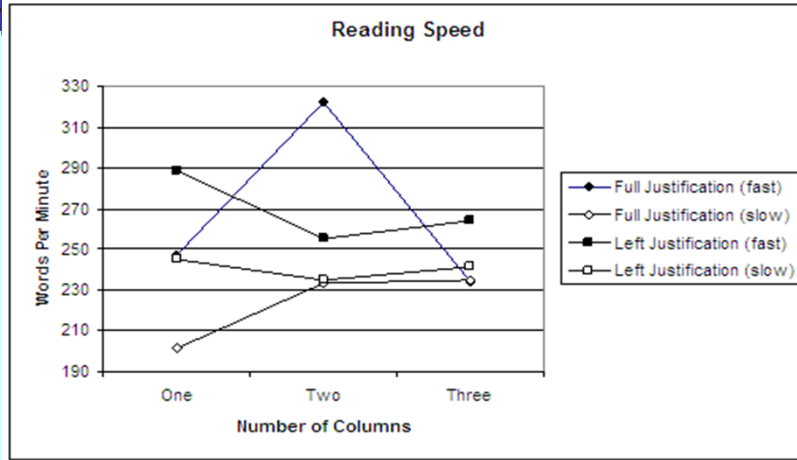
38. In the last 12 months, did you and anyone in this provider's office talk at each visit about all the prescription medicines you were taking?

    ❑ [1] Yes
    ❑ [2] No

39. In the last 12 months, did anyone in this provider's office ask you if there was a period of time when you felt sad, empty, or depressed?

    ❑ [1] Yes
    ❑ [2] No

Average Reading Speed for Fast and Slow Readers

Reading Speed

Baker JR. Is Multiple-Column Online Text Better? It Depends! Usability News 2005; 7(2)
http://psychology.wichita.edu/surl/usabilitynews/72/columns.asp

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Cognitive & Display Design Assessment

Format

Passive → In the last 12 months, when you phoned this
Voice   provider's office **after** regular office hours,
           how often did you get an answer to your
           medical question as soon as you needed?

Grid Line

Random truncation

Hand Out: *Correlation of F-K and FRE scores*

Cognitive Design and Display A

Reading Difficulty

16. In the last 12 months, when you phoned this provider's office **after** regular office hours, how often did you get an answer to your medical question as soon as you needed?

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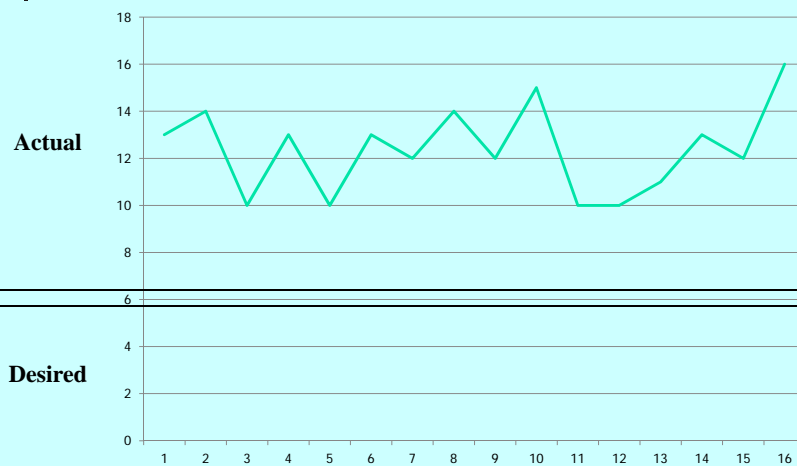
Reading Difficulty

Flesch-Kincaid Grade Level: **14**
Flesch Reading Ease :   **53**

Hand Out: *Correlation between F-K Grade Level and Flesch Reading Ease Scores*

CAHPS 5.0 PCMH Item Set

Grade Level Reading Difficulty

Cognitive Design and Display Simplification

Wording

In the last 12 months, when you phoned this provider's office **after** regular office hours, how often did you get an answer to your medical question as soon as you needed?   14/53

In the last 12 months
When you phoned this provider's office **after** regular office hours,
how often did you get an answer to your *medical* question *as soon as* you needed?   12/54

When you called this doctor's office **after** regular hours did you get answers to your questions when you needed?   9/67

Hand Out: *CAHPS-E PCMH Item Set examples*

Cognitive Design and Display Simplification

Font

When you called this doctor's office **after** regular hours did you get answers to your questions when you needed?   9/67
- ^{1}Never
- ^{2}Sometimes
- ^{3}Usually
- ^{4}Always

When you called this doctor's office **after** regular hours did you get answers to your questions when you needed?
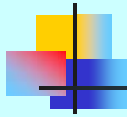- ^{1}Never
- ^{2}Sometimes
- ^{3}Usually
- ^{4}Always

Simple Sentence Fragment Model
The Premise

- Cognitive burdens are associated with diminishing cognitive capacity and reading skills

- Diminishing reading skills means slower reading

- Short length text promotes improved reading and comprehension

- Simple sentence fragments are shorter and convey one idea

Simple Sentence Fragments
The Premise

- SSF reading difficultly lower than for whole sentence

- Think of: Actual temperature vs. wind chill (feels colder)

- Actual sentence reading difficulty vs. fragment difficulty (reads easier)

Sentence and its sentence fragments have the same number of words and syllables and therefore reading difficulty sentence fragments are read in shorter sections mitigating reading difficulty

Simple Sentence Fragment Method
Each fragment conveys one idea

When you called this doctor's office **after** regular hours did you get answers to your questions when you needed?
9/67

When you called this doctor's office.
after regular hours.
did you get answers to your questions when you needed?
3/82

- Create Fragments
- Add end punctuation
- Assess reading difficulty
- Remove end punctuation

Actual reading difficulty   9/67
Reads like   3/82

Before & After
Simplification and Fragmentation

In the last 12 months, when you phoned this provider's office **after** regular office hours, how often did you get an answer to your medical question as soon as you needed?
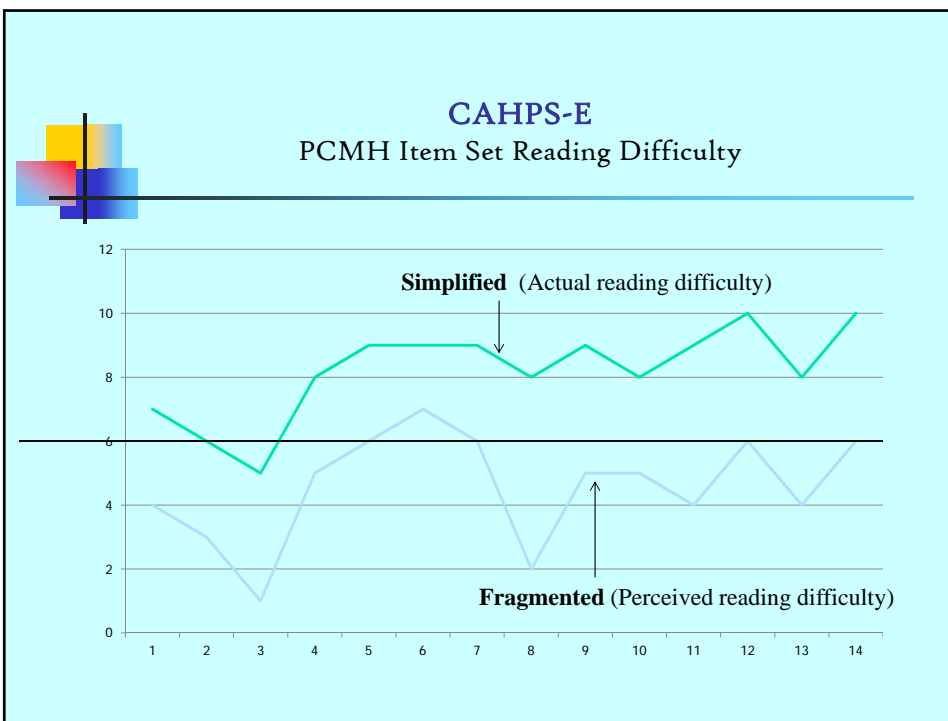
- ❑ Never
- ❑ Sometimes
- ❑ Usually
- ❑ Always

14/53

In the last 12 months:

When you called this doctor's office
after regular hours
did you get answers to your questions when you needed?

- ❑ Never
- ❑ Sometimes
- ❑ Usually
- ❑ Always

3/82

CAHPS-E
PCMH Item Set Reading Difficulty

Simplified (Actual reading difficulty)

Fragmented (Perceived reading difficulty)

CAHPS Rating Response Options

Using any number from 0 to 10, where 0 is the worst health care possible and 10 is the best health care possible, what number would you use to rate all your health care in the last 12 months?

- ❑ 0 Worst health care possible
- ❑ 1
- ❑ 2
- ❑ 3
- ❑ 4
- ❑ 5
- ❑ 6
- ❑ 7
- ❑ 8
- ❑ 9
- ❑ 10 Best health care possible

CAHPS-E Rating Response Options

How was your health care
in the last 12 months?

The Best   Good   Not Good   The Worse

Halos are bright circles or rings that appear around a source of light, such as oncoming car headlights.

Q1. Over the LAST 7 DAYS, how much were you bothered by halos...

	Did not experience	Not bothered at all	Bothered a little bit	Bothered somewhat	Bothered quite a bit	Very Bothered	Does not apply*
a. When **not** wearing glasses or contacts or sunglasses	0	1	2	3	4	5	6
b. When **wearing** glasses or contacts but **not** sunglasses	0	1	2	3	4	5	6
c. When wearing sunglasses (with or without glasses or contacts)	0	1	2	3	4	5	6
d. When driving at night **not** wearing glasses or contacts	0	1	2	3	4	5	6
e. When driving at night **wearing** glasses or contacts	0	1	2	3	4	5	6
f. Overall	0	1	2	3	4	5	6

* Only choose this answer if the situation does not apply. For example, if the question asks about driving at night and you have not driven at night in the past 7 days then choose "Does not apply."