

Exploring the Washington Group Data from the 2011 U.S. National Health Interview Survey

Julie D. Weeks, Ph.D.
National Center for Health Statistics, USA

Washington Group on Disability Statistics
Bangkok, Thailand
22-24 October 2012



Purpose of Presentation

The WG questions have been collected as part of the U.S. National Health Interview Survey since 2010. In this presentation:

- Overview of NHIS survey characteristics;
- Examine the WG-SS items by sociodemographics;
- Examine the overall prevalence of “disability” using the WG-SS and a broad definition of disability;
- Examine the WG-ES items by sociodemographics;
- Discussion of coding choices in all domains;
- Discuss the cut points for definitions of disability prevalence;
- Make suggestions for next steps.

The National Health Interview Survey (NHIS)

- The principal source of information on the health of the civilian noninstitutionalized population of the United States.
- Since 1956, the NHIS has provided statistical information on the amount, distribution, and effects of illness and disability in the U.S. and the health services received for such conditions.
- Comprised of “Core” questions asked each year of the Household, Family, a Sample Adult and a Sample Child, and “Supplement” questions that address special topics and change periodically.

NHIS Characteristics

Survey context: Health and health care survey

Survey scope: Civilian, noninstitutionalized population

Survey mode: In-person, some telephone followup

- Trained U.S. Census interviews
- Computer-assisted personal interviewing

Periodicity: Annual, repeated cross-sectional estimates

Sample Size: Each year completed interviews with

- 35,000 households
- 87,500 persons

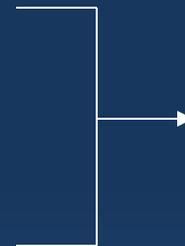
NHIS Interview Protocol

- Household respondent provides basic socio-demographic information on all members of household
 - For each family within a household
 - knowledgeable adult 18 or older responds for him/herself and all other family members
 - *sample adult* 18 or older and *sample child* under age 18 randomly selected for more extensive set of questions

NHIS Structure: Basic Module

Family Core

General info on all family members
Household and family data
Allows proxy respondents
Fielded each year



**Demographic
and general
health data**

Sample Adult Core

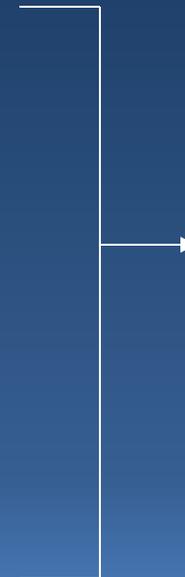
Self-response only
Fielded each year



**Health condition,
risk behavior,
and health
behavior data**

Sample Child Core

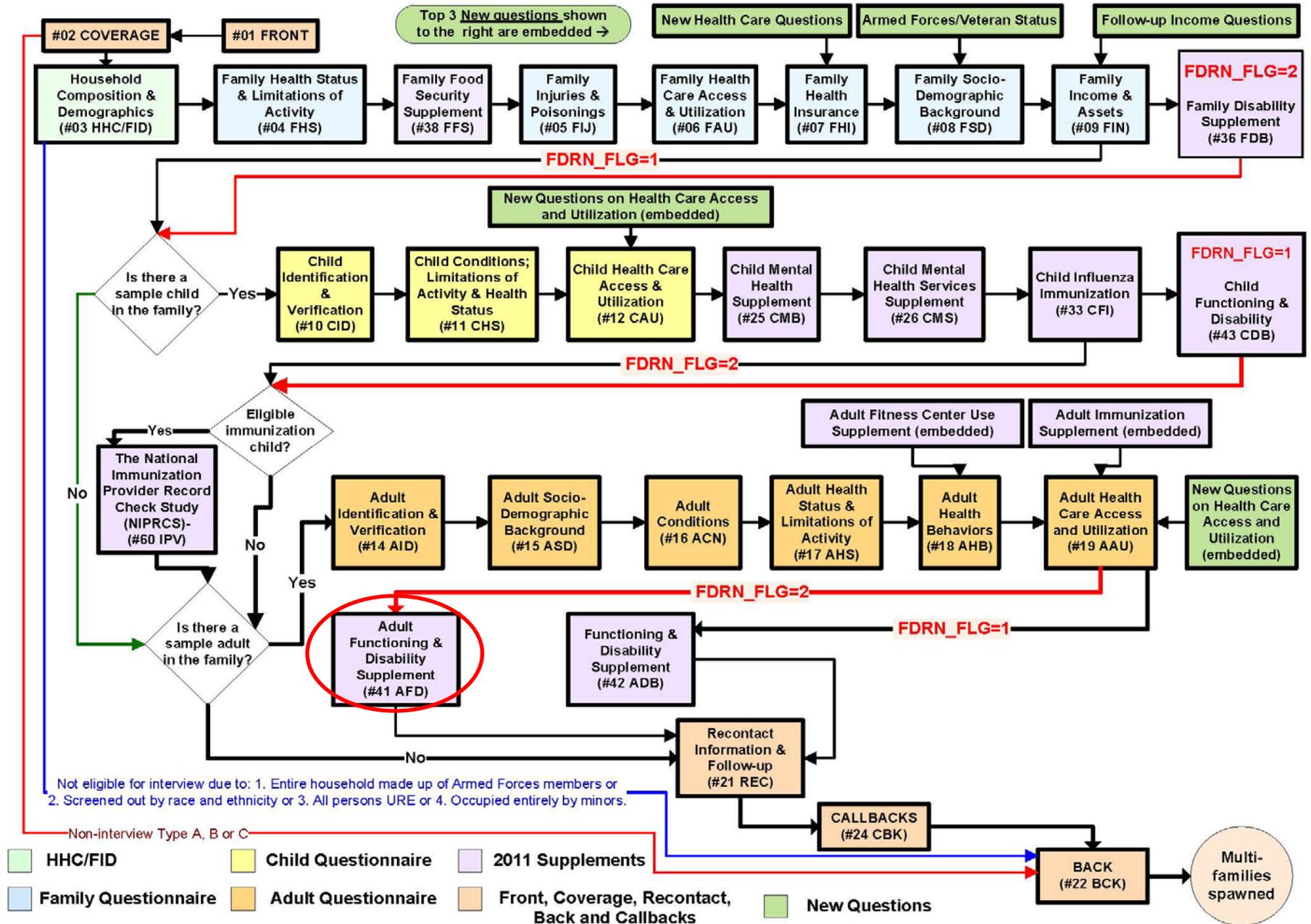
Knowledgeable adult responds for child
Fielded each year



Examples of Previous and Current NHIS Supplements

- Arthritis (2002, 2003, 2006, 2009)
- Asthma (2002, 2008, 2013)
- Balance/Dizziness (2008)
- Complementary and Alternative Medicine (2002, 2007, 2012)
- Cancer (2000, 2005, 2010)
- Diabetes (2003, 2007)
- Disability (2002, 2008-present) (WG 2010-present)
- Epilepsy (2010, 2013)
- Food Security (2011- present)
- Immunization (2008-present)
- Hearing (2002, 2007, 2008)
- Heart Disease (2001, 2008)
- Mental Health (2001-2010)
- Occupational Health (2010)
- Oral Health (2008)
- Vision (2002, 2008)

Detailed Flow of the 2011 NHIS Production Instrument



2011 NHIS-WG Data

Characteristics

Analytic Sample: 16,540 adults, ages 18 years and over

- Male: 45%
- Female: 56%

- 18-44 years: 46%
- 45-64 years: 34%
- 65+: 21%

- Less than high school: 17%
- High school or equiv.: 56%
- College: 27%

- Below 100% poverty: 18%
- 100% - < 200% poverty: 21%
- 200% or above poverty: 61%

Short Set WG Items: Methods

Tables on pages 1-12 contain provide NHIS data from the following:

- Short Set items, individually, by sociodemographics:
 - Vision
 - Hearing
 - Mobility
 - Communication
 - Cognition
 - Upper Body
- All response categories are shown: no diff, some diff, a lot of diff, cannot do at all.
- U.S. population 18 years and over

Short Set WG Individual Items: Impressions

Results of the individual Short Set questions show some interesting results:

- Women > Men: vision, mobility, cognition.
Men > Women: hearing, communication
- Age relationship as expected: severity worsens with age
However, even though the older pop have greater proportion of difficulty, the largest population with difficulty is the 18-64 population.
- Education, poverty status and marital status also as expected.
- “Some” category captures largest pop with difficulty. Is this a problem?

Definitions for Prevalence of Disability

Four measures have been proposed by the WG:

1. a broad measure that includes everyone with at least one domain coded as *some difficulty*, *a lot of difficulty*, or *unable to do it*
2. a measure that excludes the mildest degrees of difficulty and includes everyone with at least one domain coded as *a lot of difficulty*, or *unable to do it*
3. a narrow measure that focuses on the most severe levels of difficulty and includes everyone with at least one domain coded as *unable to do it at all*
4. a measure that is slightly more restrictive than #1 and includes everyone with at least one domain that is coded as *a lot of difficulty* or *cannot do it at all* or at least *some difficulty* in two domains.

Short Set WG Summary Measure: Impressions

Page 13 shows the prevalence of disability in the 18+ population, combining the six Short Set questions.

- The overall rate of disability, using the broad definition, is 33.4%.
- This rate is consistent with another measure of difficulty used in the U.S. indicating “Basic Actions” difficulty.
- Difficulty walking or climbing steps contributes the greatest to the overall rate.
- Followed by cognition, hearing and vision.
- The “some difficulty” category is much larger than others.

Page 15 shows disability by sociodemographic characteristics.

Short Set WG Summary Measure: Varying Cut-Off Points

What would the overall rate of disability be, as measured by the Short Set, using the other recommended definitions?

1. at least one domain is scored *some difficulty* = 33.4%
2. at least one domain is scored *a lot of difficulty* = 8.9%
3. at least one domain is scored *unable to do it at all* = 2.4%
4. at least one domain is scored
 - a) as *a lot of difficulty* or *unable to do it* or
 - b) *at least some difficulty* is scored in two domains
= 17.6%

Extended Set WG Items: Methods

Tables on pages 17-30 contain provide NHIS data from the following:

- Extended Set items, individually, by sociodemographics:
 - Hearing: quiet room, noisy room, comparison
 - Mobility: 100 yards, 1/3 mile, walking stairs, comparison
 - Upper Body: lifting, grasping, comparison
 - Anxiety
 - Depression
 - Pain
 - Fatigue
- All response categories are shown: no diff, some diff, a lot of diff, cannot do at all.
- U.S. population 18 years and over

Extended Set WG Items: Coding of Hearing

For the extended set, the hearing variable combines difficulty hearing, difficulty hearing in a quiet room and difficulty hearing in a noisier room:

1. Any difficulty hearing “yes” = 11.4%
2. Any difficulty hearing in a quiet room *or* a noisier room, AND, “no” difficulty to #1 = 16.7%
3. Any difficulty hearing – extended set = 28.2%

In this way, we add the Short Set measure and the Extended set questions on hearing to form the Extended Hearing measure.

Extended Set WG Items: Coding of Mobility

For the extended set, the mobility variable combines difficulty walking or climbing stairs, difficulty walking 100 yards, difficulty walking 1/3 mile, difficulty walking stairs, and use of wheelchair or scooter:

1. Any difficulty walking or climbing stairs “yes” = 16.3%
2. Any difficulty walking 100 yards *or* 1/3 mile *or* walking up and down stairs, OR, uses a wheelchair or scooter, AND “no” difficulty to #1 = 7.3%
3. Any difficulty with mobility – extended set = 23.6%

Extended Set WG Items: Coding of Upper Body

For the extended set, the upper body variable combines difficulty with self care, raising a 2L bottle, and using hands or fingers to grasp:

1. Any difficulty with self care = 3.9%
2. Any difficulty raising a 2L bottle from waist to eye level *or* using hands or fingers to grasp, AND, no difficulty to self care = 6.9%
3. Any difficulty with upper body – extended set = 10.8%

Extended Set WG Summary Measure: Impressions

Page 31 shows the prevalence of disability in the 18+ population, combining the questions in the 10 domains.

- The overall rate of disability, using the broad definition, is 61.1%.
- This rate is almost double the rate derived from the Short Set.
- Adding a) follow-up questions in the hearing and mobility domains *and* b) adding the domains anxiety, depression, pain and fatigue greatly increase the prevalence rate.
- Further work to create measures in the additional extended domains may or may not further increase this rate.

Page 32 shows disability by sociodemographic characteristics.

Extended Set Analyses: Next Steps

Understanding how the WG Extended Set is operating and who we are capturing requires much more analysis.

- For hearing, is “quiet” and “noisy” room operating the way we want? Are we constructing the mobility and upper body extended measure correctly?
- For the domains of anxiety, depression, pain and fatigue, how do we construct summary measures across the questions of frequency, intensity and duration?
- Do questions about equipment tell us anything about functioning? Are the medication questions adding to our understanding?

Extended Set Analyses: Next Steps

Understanding how the WG Extended Set is operating and who we are capturing requires much more analysis.

- What cut points in level of difficulty are useful for what purposes?
- Is the purpose of the Extended Set to *add more people* to the prevalence rate or *understand greater detail* within a domain of functioning?
- Examine disparities among those at risk, including participation (social inclusion) and quality of life.