

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

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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

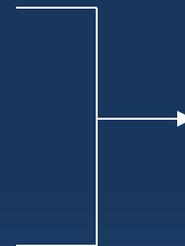
NHIS Interview Protocol

- 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



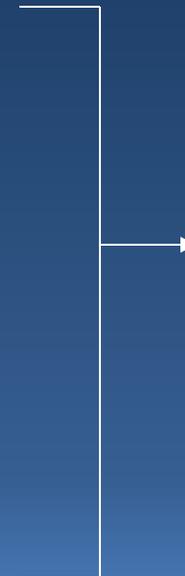
**Demographic
and general
health data**

Sample Adult Core

Self-response only
Fielded each year

Sample Child Core

Knowledgeable adult responds for child
Fielded each year

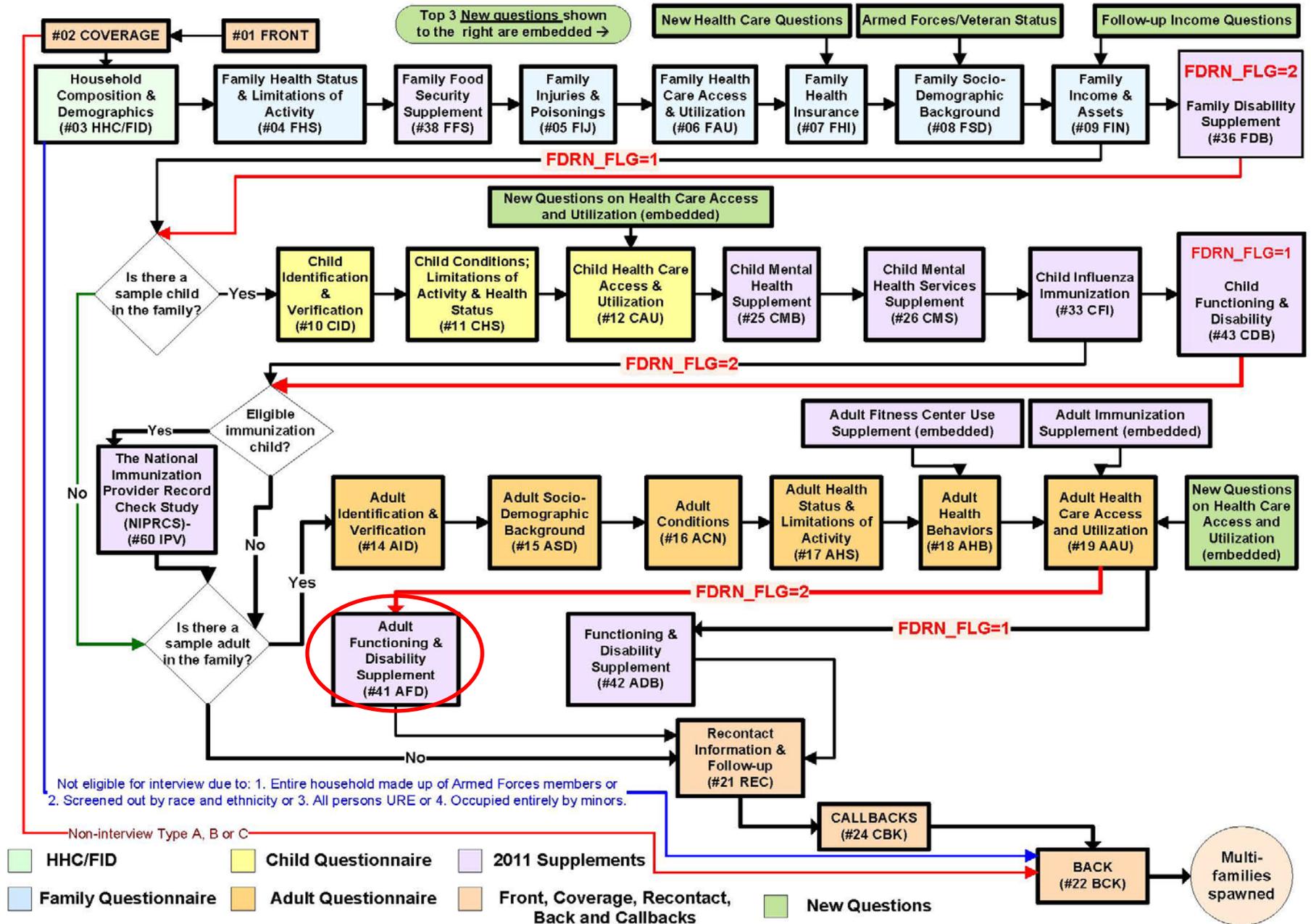


**Health condition,
risk behavior,
and health
behavior data**

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.