



## NATIONAL HEALTH INTERVIEW SURVEY QUESTIONNAIRE REDESIGN

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**Board of Scientific Counselors Meeting**

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# Outline

- The National Health Interview Survey
- Questionnaire Redesign Process and Timeline
- Redesigned Questionnaire Structure and Content
- Questions and Discussion



# Background: National Health Interview Survey

- **Purpose:** To monitor the health of the US population through the collection and analysis of data on a broad range of health topics
- **Sample:** Address-based, multi-stage, clustered national sample of housing units from every state, to be representative of the civilian noninstitutionalized US population
- **Mode:** In-person interviews by Census interviewers, with follow-up by telephone if needed
- **Questionnaire:** Includes family, sample adult, and sample child sections
- **Data collection:** Continuous, with quarterly and annual data files
- **Sample size:** Complete interviews for 35,000+ households annually

# Key Roles for the NHIS

- Provide objective scientific data for DHHS from a well-established, high-quality, in-person survey on topics including health conditions, health behaviors, health insurance, and health care utilization.
- Provide “gold standard” estimates for federal and private surveys to use for benchmarking and for adjusting estimates.
- Maintain a large sample size for quarterly national estimates and for annual estimates among population subgroups.
- Maximize stability over time so that trends are reliable.

## Why Redesign?

- Most recent major content redesign was 1997

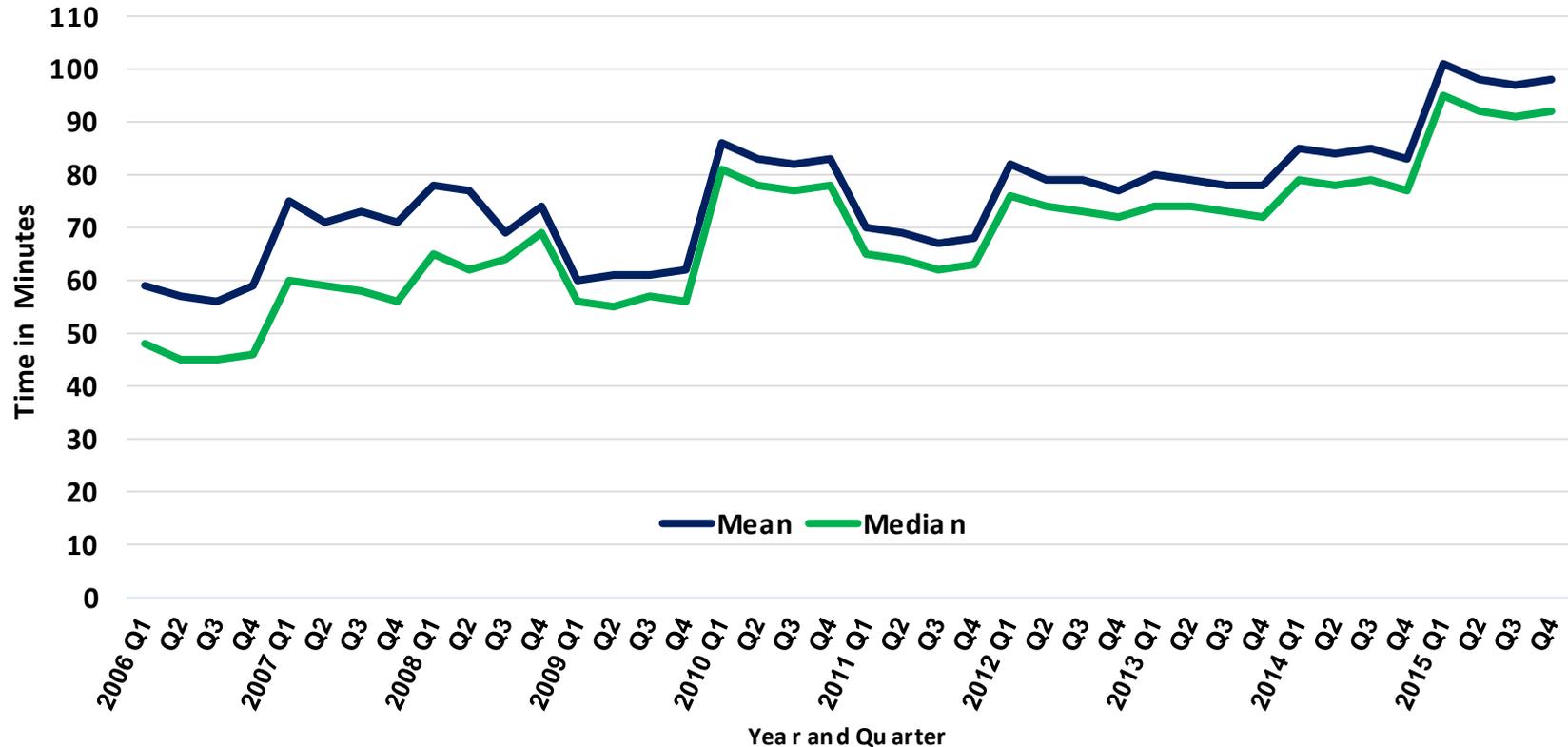
## Goals of the 2019 Content Redesign

- Improve the relevance of covered health topics, better meeting the needs of the Department of Health and Human Services and other data users
- Harmonize overlapping content with other federal health surveys

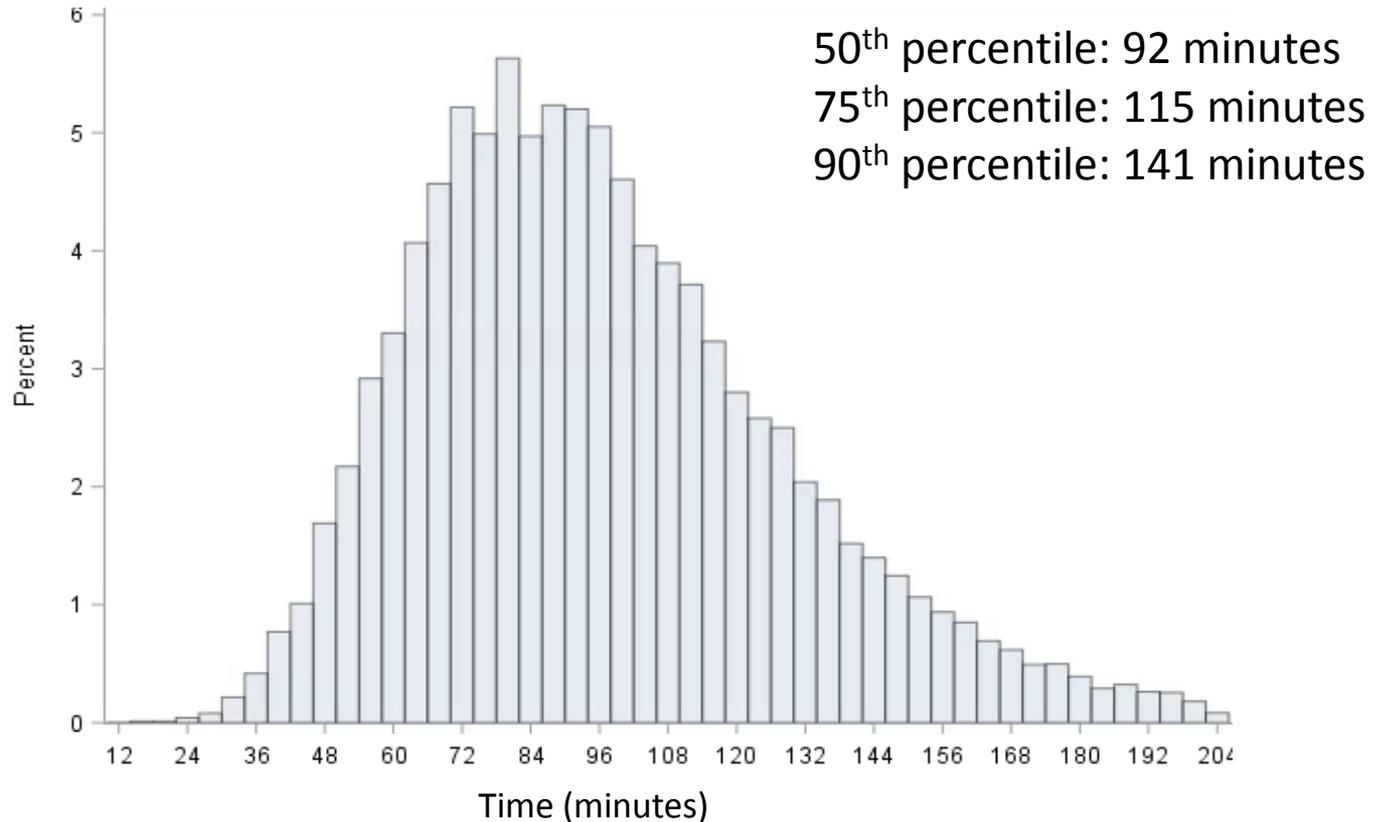
# Why Redesign?

- Respondent burden increasing and response rates decreasing

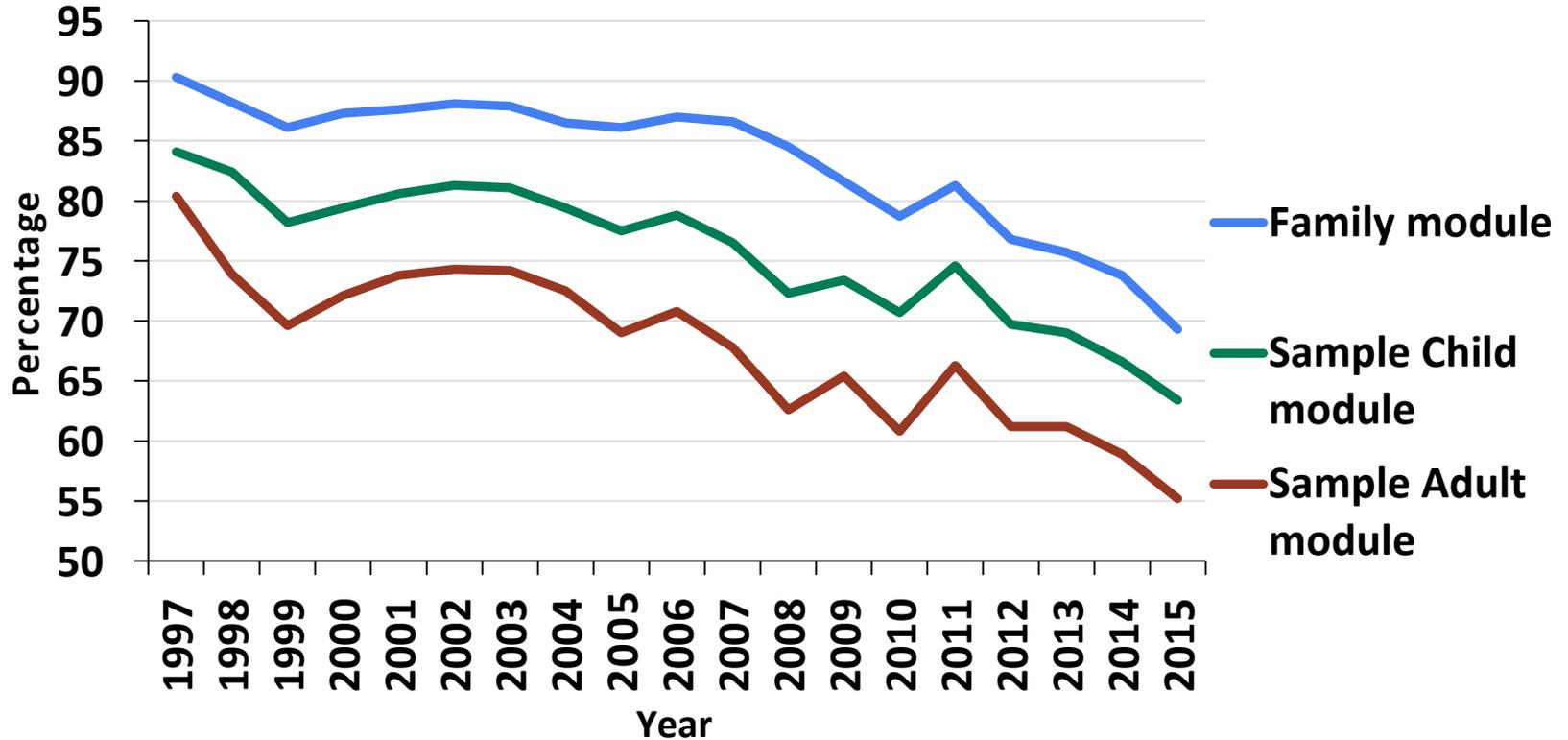
# Length of Completed Interviews (in minutes), by Quarter: NHIS, 2006-2015



# Distribution of Length of Completed Interviews (in minutes): NHIS, 2015

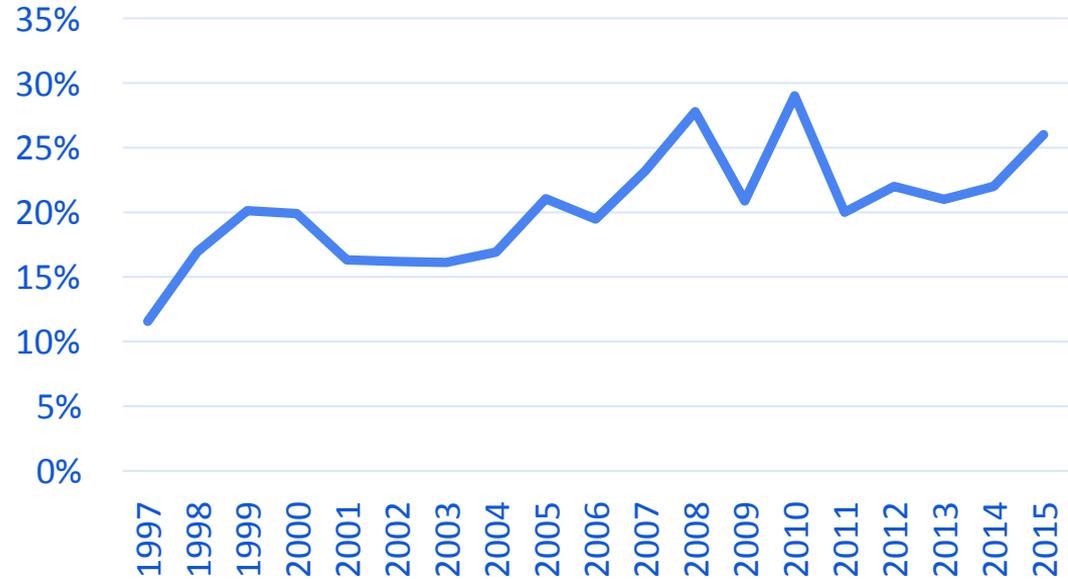


# NHIS Family, Child, and Adult Response Rates, NHIS 1997-2015



# Breakoffs: Proportion of Cases on the Data Files with Incomplete Data, NHIS 1997-2015

- The proportion of partial interviews almost tripled between 1997 and 2010.



## Why Redesign?

- Respondent burden increasing and response rates decreasing

## Goals of the 2019 Content Redesign

- Reduce respondent burden and improve data quality
  - Shorten questionnaire and reduce variation in interview times
  - Eliminate or reduce content better covered by other methods
  - Establish a long-term structure of periodic topics
- 

# Redesign Process: Workforce

- **Redesign team**
  - Centralized staff dedicated to the redesign
  - Working with Division Director and Associate Director for Science
- **Division staff teams**
  - Survey planners, analysts, and programmers working on small teams to accomplish defined tasks
- **Center leadership**
  - Providing input and assisting with outreach
  - Making final decisions

# Criteria for Prioritizing Content

- **Strong link to public health:** Leading causes of morbidity/mortality, known risk or protective factors, priority populations at risk, intermediate outcomes
- **Relevant to HHS agency goals:** Part of HHS strategic plan, HHS initiatives
- **Needed for long-term monitoring:** Leading health indicators
- **High quality measurement:** Content can be measured well in household interviews
- **Consistent with other federal surveys:** Measure is used by others for calibration, does not duplicate detail collected by targeted HHS surveys
- **Can be estimated reliably with one or two years of data:** Less focus on rare conditions or behaviors

# Input to Guide Decision Making

- **Evaluating uses of NHIS data**
  - Literature review
  - Reporting requirements
- **Policy and program relevant data for DHHS**
  - Annual report to Congress: *Health, United States*
  - Healthy People 2020 monitoring and 2030 planning
  - NHIS is the source for 69 Healthy People 2020 Objectives

# More Input to Guide Decision Making

## ▪ Engaging stakeholders

- Meetings with CDC centers, agency partners, Healthy People federal interagency working group, professional associations, conference presentations
- Public solicitation of input: Oct. 2015, Feb. 2016, June 2016
- Federal register notices: Oct. 2016, Aug. 2017, two in 2018
- Website: [http://www.cdc.gov/nchs/nhis/2019\\_quest\\_redesign.htm](http://www.cdc.gov/nchs/nhis/2019_quest_redesign.htm)

## ▪ Technical expert consultations

- Child health, income, pain, injury, opioids

Identify and Engage Stakeholders

Technical  
Expert Panels

Public Feedback  
and Comment

Develop Questionnaire  
Content

Cognitive Testing

Systems Development and Testing

Field Test

Dress Rehearsal and  
Full-Scale Systems Test

Redesigned Survey

2015

2016

2017

2018

2019



# Dress Rehearsal and Systems Test

- **NHIS sample from Q4/2018**
  - Random half to be fielded using new questionnaire
  - Interviewers will be working with both questionnaires
- **Impact**
  - 2018 NHIS sample size reduced from 35,000 households to 30,625
  - Opportunity to “bridge” designs and compare estimates

# Redesigned Questionnaire Structure and Content



# Annual Core Content for Household Members

2019	2020	2021	2022	2023	2024	2025	2026	2027
<b>Household Roster - Selection of Sample Adult - Informed Consent</b>								

# Annual Core Content for Household Members

- **Each member of the household**
  - Age, sex, race/ethnicity
- **Each adult**
  - Active duty military status, employment, highest education obtained
- **Each child under age 18**
  - Identification of parents or foster parents

# Annual Core Content for the Family Unit

- **Family-level variables collected or constructed**
  - Family structure/size
  - Family income/poverty level
  - Income transfer program participation (e.g. WIC, SNAP)
  - Housing owned/rented, rental assistance
  - Financial burdens of medical care
  - Landline and wireless phones in home

# Sample Adult Annual Core

2019	2020	2021	2022	2023	2024	2025	2026	2027
<b>Household Roster - Selection of Sample Adult - Informed Consent</b>								
Health Status - Hypertension - High Cholesterol - Cardiovascular Conditions Asthma - Cancer - Diabetes - Other Chronic Conditions - Height and Weight Difficulties with Vision, Hearing, Mobility, Communication, Cognition, and Self-Care Anxiety - Depression - Social Functioning Health Insurance Status and Continuity Financial Burden of Medical Care - Health Care Utilization and Access Prescription Medication - Immunizations Cigarettes and E-cigarettes Marital Status - Veteran Status - Nativity Schooling - Employment Family Income - Food-Related Program Participation - Housing Telephone Use - Linkage Information								

# Sample Adult Annual Core

- **Health status**
- **Health conditions:** hypertension, high cholesterol, cardiovascular conditions, asthma, diabetes, cancer, arthritis, height and weight
- **Disability:** Washington Group international standard
- **Health insurance**
- **Health care access**
- **Health care utilization:** usual place of care; use of urgent care, retail clinic, or emergency room; hospital stays
- **Immunizations**
- **Health behaviors:** smoking
- **Demographics:** sexual identity, marital status, veteran status, nativity, schooling, employment
- **Linkage:** consent to link with vital statistics and other health-related government records

# Sample Adult Rotating Core

2019	2020	2021	2022	2023	2024	2025	2026	2027
Dental, Mental, Other Care Utilization		Rotating Conditions	Dental, Mental, Other Care Utilization		Rotating Conditions	Dental, Mental, Other Care Utilization		Rotating Conditions
Mental Health Assessment	Employment Detail - Injuries		Mental Health Assessment	Employment Detail - Injuries		Mental Health Assessment	Employment Detail - Injuries	
Chronic Pain - Preventive Services	Health Behaviors	Chronic Pain - Preventive Services	Health Behaviors	Chronic Pain - Preventive Services	Health Behaviors	Chronic Pain - Preventive Services	Health Behaviors	Chronic Pain - Preventive Services

# Sample Adult Rotating Core

- **Dental, mental, other care access and utilization**
- **Mental health assessment:** medication use, frequency of depression and anxiety, Patient Health Questionnaire (PHQ), Generalized Anxiety Disorder (GAD)
- **Chronic pain:** frequency and locations
- **Preventive services:** aspirin use, screening for blood pressure, cholesterol, diabetes, colon cancer, breast cancer, cervical cancer
- **Health conditions:** kidney problems, hepatitis, liver problems, allergies, serious psychological distress
- **Employment:** details on type and nature
- **Injury**
- **Health behaviors:** smoking cessation, physical activity, walking, sleep, fatigue, alcohol use, content of care

# Sample Child Annual Core

	2019	2020	2021	2022	2023	2024	2025	2026	2027
	<b>Household Roster - Selection of Sample Child -            Identification of Parent/Guardian Respondent - Informed Consent</b>								
<b>Annual core</b>	Health Status - Asthma - Diabetes - Developmental and Learning Disabilities Difficulties with Vision, Hearing, Motor Skills, Self-Care, Communication, and Cognition Affect - Behavior - Social/Emotional Screening for Very Young Children Health Insurance Status and Continuity - Financial Burden of Medical Care Health Care Utilization and Access Prescription Medication - Immunizations Schooling - Parent Demographics Nativity Employment of Adult Family Members - Family Income Food-Related Program Participation - Housing Telephone Use - Linkage Information								

# Sample Child Annual Core

- **General health status**
- **Health conditions:** asthma, diabetes, developmental and learning disabilities
- **Disability:** Washington Group international standard, social/emotional screening for young children
- **Health insurance**
- **Health care access**
- **Health care utilization**
- **Immunizations**
- **Demographics:** nativity, schooling, marital status and nativity of [residential] parents
- **Family-level content**
- **Linkage**

# Sample Child Rotating Core

2019	2020	2021	2022	2023	2024	2025	2026	2027
Dental, Mental, Other Care Utilization		Rotating Conditions	Dental, Mental, Other Care Utilization		Rotating Conditions	Dental, Mental, Other Care Utilization		Rotating Conditions
Mental Health	Injuries		Mental Health	Injuries		Mental Health	Injuries	
Stressful Life Events	Phys Activity and Sleep	Stressful Life Events	Phys Activity and Sleep	Stressful Life Events	Phys Activity and Sleep	Stressful Life Events	Phys Activity and Sleep	Stressful Life Events

# Sample Child Rotating Core Content

- **Dental, mental, other health care access and utilization**
- **Mental health:** medication use, Strengths and Difficulties Questionnaire (SDQ)
- **Social determinants:** neighborhood safety, stressful life events, free and reduced meals
- **Health conditions:** allergies
- **Injury**
- **Health behaviors:** physical activity, sleep

# 1997-2018 Content not in Redesigned Core Questionnaire

- **Sociodemographics:** Country of birth, number of months worked last year, personal earnings amounts
- **Family structure:** Detailed relationships of all family members to household respondent
- **Veterans:** Active military duty time periods
- **Health conditions:** last 2 weeks stomach illness, head/chest cold, rare conditions, chickenpox, tooth loss
- **Disability:** Detailed Activities of Daily Living (ADLs) and Instrumental Activities of Daily Living (IADLs), disability-associated conditions
- **Health care access:** problems accessing providers, change in usual place of care, reasons for no usual place of care
- **Health care utilization:** receipt of medical advice by phone; amounts family spent out of pocket for medical care; number of office visits, hospitalizations, home visits; surgeries; doctor phone calls; ER visits on night or weekends; ER leading to hospital admissions; reasons for ER visit
- **Immunization:** shingles\*, HPV\*, pertussis\*, tetanus\*, hepatitis A/B
- **Impacts:** days spent in bed, change in health status in past year

\*Moving from core to sponsored content



# Sponsored Supplemental Content

## Past Supplements:

- Cancer control and prevention
- Immunization
- Food security
- Non-cigarette tobacco use
- Expanded content on health care access and utilization
- Complementary and alternative medicine
- Diabetes, Hepatitis, Epilepsy
- Hearing, balance, vision
- Occupational health

# Sponsored Supplemental Content

Supplements to be included in  
2019:

- Cancer control and prevention
- Immunization
- Food security
- Non-cigarette tobacco use

# DISCUSSION

# For More Information

[https://www.cdc.gov/nchs/nhis/2019\\_quest\\_redesign.htm](https://www.cdc.gov/nchs/nhis/2019_quest_redesign.htm)