Housekeeping

• Q & A to follow – Submit questions using Q&A area

• Slides are available at https://www.ruralhealthinfo.org/webinars/nchs-obesity

• Technical difficulties please call 866-229-3239
Featured Speakers

**Kendra B. McDow, MD, MPH**, EIS Officer, Division of Health and Nutrition Examination Surveys NCHS

**Craig Hales, MD, MPH**, Medical Epidemiologist, Division of Health and Nutrition Examination Surveys NCHS

**Shelby Polk DNP, APRN, FNP-BC**, Associate Professor and Chair of Nursing Delta State University

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**The National Health and Nutrition Examination Survey (NHANES): An Overview**

**Kendra B. McDow, MD, MPH**

Rural Health Information Hub Webinar
October 11, 2018
NHANES Goals

- US population-based estimates of:
  - Health conditions
  - Awareness, treatment and control of selected diseases
  - Environmental exposures
  - Nutrition status and diet behaviors
- Establish and maintain a biospecimen program

An Evolving Survey Since 1959
History of NHANES

<table>
<thead>
<tr>
<th>Survey</th>
<th>Dates</th>
<th>Ages</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHES I</td>
<td>1959 – 62</td>
<td>18 – 79 years</td>
</tr>
<tr>
<td>NHES II</td>
<td>1963 – 65</td>
<td>6 – 11 years</td>
</tr>
<tr>
<td>NHES III</td>
<td>1966 – 70</td>
<td>12 – 17 years</td>
</tr>
<tr>
<td>NHANES I</td>
<td>1971 – 75</td>
<td>1 – 74 years</td>
</tr>
<tr>
<td>NHANES II</td>
<td>1976 – 80</td>
<td>6 months – 74 years</td>
</tr>
<tr>
<td>HHANES</td>
<td>1982 – 84</td>
<td>6 months – 74 years</td>
</tr>
<tr>
<td>NHANES III</td>
<td>1988 – 94</td>
<td>2 months +</td>
</tr>
<tr>
<td>NHANES</td>
<td>1999-2018</td>
<td>All Ages</td>
</tr>
</tbody>
</table>

**Sampling Design**

**Overview**

- Nationally representative
- Civilian, non-institutionalized US population
- 5,000 individuals examined annually
- Oversampled groups:
  - Non-Hispanic blacks
  - Non-Hispanic Asians
  - Hispanics
  - 80+ years of age
  - Low income whites
Multistage Probability Sampling Design

Sampling Design

Data Collection

Interviews and Physical Exams

- In-person home interview

- Physical assessments in Mobile Exam Centers (MEC)
  - Physical exam measurements
  - Specialized testing
  - Private interviews
  - Lab specimen collection

- Post exam assessments
**Data Collection**

**Interviews and Physical Exams**

- In-person home interview

- Physical assessments in Mobile Exam Centers (MEC)
  - Physical exam measurements
  - Specialized testing
  - Private interviews
  - Lab specimen collection

- Post exam assessments

**Data Collection**

**In-Home Interview**

- Demographic information
- Health conditions
- Health insurance and healthcare use
- Prescription drugs and dietary supplements use
Data Collection

**Interviews and Physical Exams**

- In-person home interview

- Physical assessments in Mobile Exam Centers (MEC)
  - Physical exam measurements
  - Specialized testing
  - Private interviews
  - Lab specimen collection

- Post exam assessments

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Data Collection

**MEC Physical Examinations**

![MEC Physical Examinations](image-url)
Data Collection

The MEC: A State-of-the Art Medical Facility

Configuration for NHANES 2017-2018

Data Collection

MEC Reception
Data Collection
Cardiovascular Health

Data Collection
Oral Health
Data Collection

Body Composition

Dual-energy X-ray absorptiometry (DXA)

Data Collection

Private Interviews

Dietary Recall Interviews

Computer-Assisted Personal Interviews (CAPI)
Data Collection

MEC Laboratory

Laboratory Tests

- Complete Blood Count
- Pregnancy test
- Nutritional biomarkers
- Hormone tests
- Diabetes
- Lipid profile
- Biochemistry profile
- Environmental chemicals
- Infectious diseases
  - Hepatitis viruses
  - Sexually transmitted infections
**Data Collection**

**Anthropometry**

- In-person home interview
- Physical assessments in Mobile Exam Centers (MEC)
  - Physical exam measurements
  - Specialized testing
  - Private interviews
  - Lab specimen collection
- Post exam assessment
Data Collection

Post Exam Assessment

Data Release Process

- Data Release Process
  - Quality Control
  - Editing/cleanup
  - Weighting
  - Data preparation
  - Documentation
  - Confidentiality review

- Public data released in 2-year cycles

Cheryl D. Fryar, M.S.P.H., Jeffery P. Hughes, M.P.H., Kirsten A. Herrick, Ph.D., MSc., and Namanjeet Ahluwalia, Ph.D.

Here's how much fast food Americans are eating

Story Highlights

• Fast food has become a major part of the American diet, and a new report from the U.S. Centers for Disease Control and Prevention reveals just how unhealthy fast food is.

CDC: 1 in 3 US adults eats fast food on any given day

Approximately 36% of all U.S. adults ate fast food on any given day during 2013 to 2015, according to data just released from the CDC.

"We focused on fast food for this report because fast food has played an important role in the American diet in recent decades. Fast food has been associated with poor diet and increased risk of obesity," Cheryl Fryar, M.S.P.H., a health statistician with the National Center for Health Statistics told Healthy Family Medicine.

For more information, contact CDC
1-800-CDC-INFO (232-4636)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
Prevalence of Obesity and Severe Obesity among Rural vs. Urban Youth and Adults: U.S. 2001-2016

Craig M. Hales, MD, MPH, MS
Medical Epidemiologist
Division of Health and Nutrition Examination Surveys
National Center for Health Statistics, CDC

Rural Health Information Hub Webinar
October 11, 2018

National Health and Nutrition Examination Survey (NHANES)

Standardized measurements of height and weight
Adult Obesity Prevalence is Lower Based on Self-reported Compared to Measured Height and Weight

Defining Obesity

Body Mass Index (BMI)

\[ \text{BMI} = \frac{\text{Weight (kg)}}{\text{Height (m}^2\text{)}} \]
Defining Obesity in Adults Aged ≥ 20 Years

- Obesity: BMI ≥ 30
  - For a 5’9” adult: 203 lbs or more
- Severe obesity: BMI ≥ 40
  - For a 5’9” adult: 271 lbs or more

Defining Obesity in Youth Aged 2-19 Years (U.S.)

Obesity:
- BMI-for-age ≥ 95th percentile
- Average height 10-year old boy: ≥ 98 lbs

Severe obesity:
- BMI-for-age ≥ 120% of 95th percentile
- Average height 10-year old boy: ≥ 118 lbs
Obesity and Severe Obesity Prevalence Among U.S. Adults Continues to Increase

Obesity and Severe Obesity Prevalence Among U.S. Youth Has Leveled Off But Continues To Be High

Source: National Health and Nutrition Examination Survey, Fryar et al. Health E-Stats 2018
Disparities in Obesity Prevalence

- Socioeconomic status
- Race and ethnicity
- Geographic location (state)

Obesity Prevalence Higher and Increasing Among Girls in Households with Lower Education

Source: Ogden CL, et al
Disparities in Obesity Prevalence by Race and Ethnicity Vary by Sex

Prevalence of Self-Reported Obesity Among U.S. Adults by State and Territory, BRFSS, 2017

BRFSS = Behavioral Risk Factor Surveillance System
Urban/Rural Disparities in Obesity and Severe Obesity Prevalence using NHANES

NCHS Urban-Rural Classification Scheme for Counties

MSA = Metropolitan Statistical Area
NCHS = National Center for Health Statistics
Adults: Increasing Obesity Prevalence from Urban to Rural Areas, 2013-2016

Men
- Large MSA: 31.8%
- Medium or Small MSA: 42.4%
- Rural: 38.9%

Women
- Large MSA: 38.1%
- Medium or Small MSA: 42.5%
- Rural: 47.2%

Adults: Increasing Severe Obesity Prevalence from Urban to Rural Areas, 2013-2016

Men
- Large MSA: 4.1%
- Medium or Small MSA: 6.1%
- Rural: 9.9%

Women
- Large MSA: 8.1%
- Medium or Small MSA: 11.1%
- Rural: 13.5%
MEN: Obesity and Severe Obesity Prevalence Increased in Urban and Rural Areas 2001-2016

Obesity

Severe obesity

Tripled from 2.8% to 9.9% in rural areas
WOMEN: Obesity and Severe Obesity Prevalence Increased in Urban and Rural Areas 2001-2016

- Obesity
  - Doubled from 6.4% to 13.5% in rural areas

- Severe obesity

Differences observed in urban and rural areas from 2001 to 2016.
Youth: Obesity Prevalence in Rural and Urban Areas, 2013-2016

Youth: Higher Severe Obesity in Rural Compared to Urban Areas, 2013-2016
Youth: No Increasing Trends in Obesity or Severe Obesity in Urban or Rural Areas 2001-2016

Disparities in Obesity Prevalence: Rural vs. Urban

- Obesity
  - Higher among adults

- Severe obesity
  - 2x higher among adults and youth
  - 2001-2016 rural trends:
    - 3x ↑ in men
    - 2x ↑ in women
See Full Reports:

Acknowledgements

- Cynthia L. Ogden, PhD
- Cheryl D. Fryar, MSPH
- Margaret D. Carroll, MSPH
- David S. Freedman, PhD
- Yutaka Aoki, PhD
Thank you!

For more information, contact CDC
1-800-CDC-INFO (232-4636)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
Weight Loss Pilot Programs

- **SHAPEDOWN**
  - 10 Weeks
  - 2 hour sessions
    - 1 hour education
    - 1 hour physical activity
- **Structured Weight Loss Program**
  - CMS Intensive Behavioral Therapy for Obesity
What Was Learned?

GAPS

- Research
- Practice
- Program Development
How Do We Deepen Rural Engagement?

- Communities
  - Change the “NORM”
    - Healthy Living Where We
      - Live, Work, Learn, & Play
    - Train People Living in the Community

Questions?
Thank you!

• Contact us at ruralhealthinfo.org with any questions

• Please complete webinar survey

• Recording and transcript will be available on RHIIhub website