New York City Health and Nutrition Examination Surveys (NYC HANES)

2004 and 2013-14

August 2016
Outline

• Introduction
• Part I:  Survey Basics
• Part II:  Weighting and Age Adjustment
• Part III:  Data analysis using SAS and SUDAAN
INTRODUCTION
Two Important City Institutions Are Leading This Study

City University of New York
- Largest municipal university network in US
- 23 colleges and institutions
- ~275,000 matriculated students
- Trains more than half of NYC’s undergrads (54%), very diverse
- School of Public Health (SPH) launched in 2008 and accredited in 2011
- SPH committed to advancing the health of NYC residents

New York City Health Department
- One of the largest and oldest local health departments in the country
- More than 6,000 staff
- Monitors the health of NYC residents and performs multiple health surveys
- Leader in finding innovative public health solutions, especially for chronic diseases
- Conducted NYC HANES in 2004
What Is NYC HANES?

• Important survey “takes the pulse” of adult health in NYC
• Modeled on the nation’s most important & accurate health survey (National HANES)
• Conducted first in 2004, and completed again in 2013-2014, 10 years later
• Led by CUNY School of Public Health in partnership with NYC Health Department, with private funding from
• Designed to identify & evaluate city health policies and generate solutions
NYC HANES 2004:

New York City Health and Nutrition Examination Survey

- New York City Health & Nutrition Examination Survey (NYC HANES) Main Page
- Designing and Implementing a Community HANES Survey
- Datasets & Related Documentation

The New York City Health and Nutrition Examination Survey (NYC HANES) is a community-based health survey conducted by the New York City Department of Health and Mental Hygiene (DOHMH). Data was collected from June through December 2004. NYC HANES measured key health indicators in a sample of 1,999 randomly selected NYC adult residents through a detailed health interview and brief physical exam. In 2013, the City University of New York School of Public Health and DOHMH will conduct a second NYC HANES.

NYC HANES is modeled after a similar national survey - the National Health and Nutrition Examination Survey (NHANES). NHANES has been conducted by the National Center for Health Statistics for more than 35 years. Information from NHANES has led to important improvements in American health care and nutrition. Learn more about NHANES.

The data collected enabled the DOHMH to learn how many New Yorkers suffered from basic conditions such as diabetes, high blood pressure, high cholesterol, and depression. With this critical information, DOHMH can better direct the City’s resources to the health needs of New Yorkers. Conducting a second survey will provide a powerful way to evaluate the impact of City health policies since 2004.

Designing and Implementing a Community HANES

To share the lessons learned in conducting the first ever community HANES, we created the document entitled “Designing and Implementing a Community Health and Nutrition Examination Survey: The New York City Experience.” In this document we present the rationale for conducting a community HANES, describe critical planning steps that precede implementation and discuss issues that might arise during data collection. In addition, this site contains much of the documentation used in implementing NYC HANES, including study protocols and procedures, training and outreach materials and other resources created and used during the New York City study. Learn more.

NYC HANES Datasets and Related Documentation

- Download questionnaires, data files, data documentation, analytic guidelines, and sample SAS programs for analysis

NYC HANES Publications

- Prevalence of Hepatitis C Infection in New York City, 2004
- Population-Based Determination of Prevalence in Commercially and Governmental Settings in...
NYC HANES 2013-2014:
www.nychanes.org

The New York City Health and Nutrition Examination Survey (NYC HANES) is a community-based health survey of NYC adult residents that includes a detailed health interview and brief physical exam. The survey was most recently conducted by The City University of New York School of Public Health (CUNY SPH) and the NYC Department of Health and Mental Hygiene (NYC DOHMH) in 2013-2014. In 2004, the NYC DOHMH conducted the first NYC HANES. more>
NYC HANES General Overview

• In-depth survey questions
  – Demographics, health behaviors, health outcomes, mental health, and disease awareness.

• Audio-computer assisted self-interview (ACASI)

• Clinical examination and laboratory testing
  – Objective measures of health, including undiagnosed conditions and controlled conditions

• Repository of biological specimens

• Instruments and labs benchmarked against National HANES (NHANES)
What we wanted to know...

• Extent of undiagnosed chronic conditions among NYC residents
• Which groups are at high risk of developing disease
• The full distribution of risk factors for cardiovascular disease (blood pressure, cholesterol, glucose)
• Population-based information on disease management
• Extent to which residents are exposed to environmental toxins
NYC HANES Goals

2004:

• Estimate prevalence of selected health conditions in NYC using objective measures
• Estimate citywide awareness, treatment, and control of selected health conditions
• Monitor prevalence of environmental exposures
NYC HANES Goals

2004:
• Estimate prevalence of selected health conditions in NYC using objective measures
• Estimate citywide awareness, treatment, and control of selected health conditions
• Monitor prevalence of environmental exposures

2013-2014:
• Compare health of New Yorkers from 2004 to 2013-14; evaluate major citywide initiatives (e.g. trans-fat ban)
• Validate health estimates from electronic health records
Governance

• NYC HANES data and bio-repository are jointly shared by CUNY SPH and NYC DOHMH, governed by a signed Memorandum Of Understanding

• Both institutions are committed to maximizing the learning to be obtained from NYC HANES data
  – Extensive analytic plan drafted prior to data collection, with designated lead authors
  – Dataset is currently available to the public at nychanes.org
  – External requests for the use of stored blood, urine, or saliva will be reviewed
Request for NYC HANES Specimens

- Investigators are invited to submit research proposals to use the NYC HANES bio-specimens.
- Procedures for submitting a research proposal and information about the specimens are at [http://nychanes.org/research-opportunities/](http://nychanes.org/research-opportunities/).
PART I – SURVEY BASICS
BACKGROUND AND METHODS
# NYC HANES: Study Designs

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2013-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population</strong></td>
<td>Non-institutionalized NYC adult residents aged 20+ years</td>
<td></td>
</tr>
<tr>
<td><strong>Sampling</strong></td>
<td>Population-based, cross-sectional, 3-stage cluster sample:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Stratified by borough</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Primary Sampling Unit (PSU): Aggregation of Census Block Groups</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(by stratification PPS* sampling)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- SSU: Households within PSU (by SRS**)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- TSU: Participants within households (by SRS**)</td>
<td></td>
</tr>
<tr>
<td><strong>Weighting</strong></td>
<td>Weighted to non-institutionalized adult population aged 20+, per</td>
<td>Weighted to non-institutionalized adult population aged 20+,</td>
</tr>
<tr>
<td></td>
<td>Census 2000</td>
<td>per population estimates based on the American Community</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Survey (ACS) 2008-2012.</td>
</tr>
</tbody>
</table>

* PPS: Probability Proportional to Size
** SRS: Simple Random Sample
## NYC HANES: Recruitment and Setting

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2013-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Leading Entity</strong></td>
<td>DOHMH</td>
<td>CUNY SPH and DOHMH</td>
</tr>
<tr>
<td><strong>Recruitment of households</strong></td>
<td>• Advance letter sent to selected households</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Interviewers visited households to identify potential participants</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Eligible participants asked to complete the survey in the established setting(s)</td>
<td></td>
</tr>
<tr>
<td><strong>Data collection settings</strong></td>
<td>Four field clinics, ≈10% home interviews</td>
<td>Mainly in the home, one field clinic</td>
</tr>
<tr>
<td><strong>Fasting</strong></td>
<td>80% of participants asked to fast.</td>
<td>All participants asked to fast. A 48-hour advance reminder.</td>
</tr>
<tr>
<td><strong>Incentives</strong></td>
<td>$100</td>
<td>Up to $200</td>
</tr>
</tbody>
</table>
NYC HANES 2004: Sampling Design & Response Rate

**SEGMENT**

~20,000 Un-Linked* Segments in NYC

144 Segments randomly selected

**HOUSEHOLD**

4026 households approached

3388 completed eligibility interview

638 did not complete eligibility interview

Response Rate

3388/4026 = 84%

Overall Response Rate

84% x 66% = 55%

**PARTICIPANT**

3047 participants identified

1999 participants interviewed

1048 participants refused

Response Rate

1999/3047 = 66%

(*) Linked Segments are segments combined due to small population size.
NYC HANES 2013-14: Sampling Design & Response Rate

**SEGMENT**

~20,000 Unlinked Segments and 6,236 Linked\* Segments in NYC

144 Segments randomly selected

**HOUSEHOLD**

2742 Eligible households approached

Response Rate

1827/2742 = 67%

1827 completed eligibility interview

915 did not complete eligibility interview

Overall Response Rate

67% x 54% = 36%

**PARTICIPANT**

2834 Eligible participants identified

Response Rate

1527/2834 = 54%

1527 participants interviewed

1307 participants did not complete interview

* Linked Segments are segments combined due to small population size.
NYC HANES: Limitations

- Cross-sectional design
  - Unable to establish temporality or incidence
- Only citywide estimates available (no borough or UHF)
- Small sample size, especially for some demographic subgroups
- Selection/non-response bias
  - Partially corrected through non-response weighting adjustment
- Random error or social desirability bias for some self-reported measures
  - Difficulty recalling past behaviors
  - Social desirability bias reduced using ACASI
SURVEY COMPONENTS
# NYC HANES: Survey Components

<table>
<thead>
<tr>
<th>Component</th>
<th>2004</th>
<th>2013-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Computer Assisted Personal Interview (CAPI)</strong></td>
<td>- Demographic information&lt;br&gt;- Medical/family history&lt;br&gt;- Health care access&lt;br&gt;- Nutrition and physical activity&lt;br&gt;- Smoking and tobacco use&lt;br&gt;- Social support&lt;br&gt;- Alcohol use</td>
<td>Same as 2004 plus:&lt;br&gt;- <strong>Oral Health</strong>&lt;br&gt;- <strong>Mental Health Assessment</strong>, including Kessler-6 (K-6) and WHO-Disability Assessment Schedule (WHO-DAS)</td>
</tr>
<tr>
<td><strong>Audio Computer-Assisted Personal Self-Interview (ACASI)</strong></td>
<td>- Drug use&lt;br&gt;- Sexual behavior&lt;br&gt;- Incarceration</td>
<td>- Drug use (<strong>expanded</strong>)&lt;br&gt;- Sexual behavior (<strong>expanded</strong>)&lt;br&gt;- Incarceration</td>
</tr>
<tr>
<td><strong>Composite International Diagnostic Interview (CIDI)</strong></td>
<td>- Mental Health Assessment</td>
<td><strong>Not implemented</strong></td>
</tr>
<tr>
<td><strong>Physical Exam</strong></td>
<td>Anthropometric measurements</td>
<td>Same as 2004</td>
</tr>
<tr>
<td><strong>Laboratory tests</strong></td>
<td>- Urine&lt;br&gt;- Blood</td>
<td>- Urine&lt;br&gt;- Blood&lt;br&gt;- <strong>Saliva</strong></td>
</tr>
</tbody>
</table>
NYC HANES: CAPI

• CAPI (Computer-Assisted Personal Interview). Face-to-face interview recorded by the interviewer using a computer.
  – Demographic information
  – Medical history, including family history
  – Health care access
  – Nutrition and physical activity
  – Smoking and tobacco use
  – Social support
  – Alcohol use
  – Oral health (new in 2013-14)

• Interviews were conducted in multiple languages by field staff. Additional languages were also used, either with a household member translating or with Language Line (a telephone-based translation service).
NYC HANES: ACASI

• ACASI (Audio Computer-Assisted Personal Self-Interview): Respondent completes questionnaire on the computer (no interviewer)
• Drug use (expanded in 2013)
• Sexual behavior (expanded in 2013)
• Incarceration
• Conducted in English and Spanish only. Proxies and translators did not complete the ACASI.
CIDI (2004 survey only)

• CIDI (Composite International Diagnostic Interview): Face-to-face interview conducted at a clinic (not in participants’ homes).
  – Responses use diagnostic criteria to measure general anxiety disorder, panic disorder, and major depression.

• Interviews were written in English and Spanish. NYC HANES staff translated this component into other languages (if NYC HANES staff spoke the participant’s language). Language line translation and family translators were not used.
Survey: Anthropometrics

- Height
- Weight
- Waist circumference
- Blood pressure and pulse
  - Conducted both at the clinic and in participants’ homes
Survey: Lab Tests and Repository

• Laboratory Analysis
  – Diabetes: fasting plasma glucose, glycohemoglobin (A1c)
  – Heart disease: cholesterol, HDL, triglycerides
  – Infectious diseases: hepatitis B*, C, and E*, oral HPV*
  – Environmental exposures: blood and urine mercury, blood lead, blood cadmium, serum cotinine (nicotine byproduct)
  – Kidney function: urine albumin, urine and serum creatinine*

• Repository
  – Sera and urine stored for future research (2013-14: saliva*)

* Purple font = Collected in 2013-14 only
DATASET AND DOCUMENTATION
2004 Dataset and documentation

Open Access Location


- Data & Statistics
  - Surveys
    - NYC HANES Survey
      » Datasets and Related Documentation

- Using the Data
- Data and Data Documentation
- SAS Formats and Previously Used Recodes
- Sample SAS Code
- Datasets for Control Totals used in above programs and referenced in Analytic Guidelines
2004 Dataset and documentation

Open Access Location

- Data and Documentation Modules:
  - SPFile: Participants’ Demographic Information
  - CAPI
  - ACASI
  - CIDI
  - EXAM (Physical Exam)
  - Labs (Lab results)
- For each Module:
  - Variable list (EXCEL)
  - Questionnaire (PDF)
  - Data documentation (PDF)
  - Codebook (PDF)
  - Data (SAS Dataset)
2004 Dataset
*Location at the NYC DOHMH*

- **R:\SUDAAN\NYC HANES\2004\Dataset\nychanes04.sas7bdat**
  - All survey modules (CAPI, ACASI, CIDI, Anthropometrics, Lab tests) have been merged into one dataset
  - Variables are formatted
  - Variables that were created specifically for EpiQuery are also included
2004 Documentation

Location at the NYC DOHMH

- R:\SUDAAN\SUDAAN\NYC HANES\2004
- Variables lists
- **Questionnaires** (for all survey modules; demographics are included in the CAPI questionnaire)
- **Codebooks** for CAPI, ACASI and CIDI, LABS (lab tests), EXAM (anthropometrics), and SP Complete (demographics only)
- Recodes/recode formats
- Analytic notes
EpiQuery


NYC Health and Nutrition Examination Survey, 2004
(Adults aged 20 years or older)

Select Survey Measure

Cardiovascular Disease Risk Factors

High Blood Pressure
- Prevalence of hypertension
- Awareness among adults with hypertension
- Control among adults with hypertension

High Cholesterol
- Prevalence of hypercholesterolemia
- Awareness among adults with hypercholesterolemia
- Control among adults with hypercholesterolemia

Diabetes
- Prevalence of diabetes
- Prevalence of diagnosed vs. undiagnosed diabetes
- Awareness among adults with diabetes
- Glycemic control among adults with diabetes (self-report and diagnosed during survey)
- Glycemic control among adults with self-reported diabetes

Weight
- Overweight and obesity

Infectious Diseases

Herpes Simplex Virus Type 2 (HSV-2)
- Prevalence of herpes simplex virus type 2
- Awareness among adults with HSV-2

Hepatitis C Virus
- Prevalence of hepatitis C

Mental Health

Major Depressive Disorder (MDD)
- Prevalence of major depressive disorder
- Awareness among adults with MDD
- Treatment among adults with MDD

Generalized Anxiety Disorder (GAD)
- Prevalence of generalized anxiety disorder
- Treatment among adults with GAD

Environmental Exposures
- Blood lead levels >= 5 µg/dL
- Blood mercury levels >= 8 µg/L

Please select one:  
- Age-adjusted estimate
- Unadjusted (crude) estimate

What is age adjustment?  
† Adjusted to the year 2000 U.S. Standard Population

Click here for more information about this dataset
Manuscripts

• Manuscripts from NYC HANES 2004 can be found in the ‘Manuscripts’ folder

• A list of publications (with hyperlinks to journals) can be found on NYC HANES website: http://www.nychanes.org
2013-2014 Dataset and Documentation

• **Location:**
  – At the DOHMH: R:\SUDAAN\SUDAAN\NYC Hanes\2013-4
  – Public Access: [www.nychanes.org](http://www.nychanes.org)

• **First step: Data documentation (What you need to know) and Analytic Guidelines,** Files with details on how to navigate all the datasets

• **Dataset:** One file contains all components of the dataset (CAPI, ACASI, EXAM, BLOOD, URINE, SALIVA)

• **Control Totals:** Datasets to be used when adjusting weights for non-response

• **Questionnaire** (for CAPI and ACASI; demographics are included in the CAPI questionnaire)

• **Codebook** for CAPI, ACASI, LABS (BLOOD, URINE, SALIVA), EXAM (anthropometrics)

• Other support files:
  – Variable list
  – Recodes/recode formats
  – Sample SAS Code
Questionnaires

In dataset:  In Questionnaire

- DMQ_A

- DMQ_Age

- DMQ_1
<table>
<thead>
<tr>
<th>Section</th>
<th>Raw Name</th>
<th>Question</th>
<th>Format</th>
<th>2004 Study</th>
<th>Notes</th>
<th>Mean Value</th>
<th>Frequency (unweighted)</th>
<th>Percent (unweighted)</th>
<th>Percent (weighted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAMP KEY</td>
<td>SP Case ID</td>
<td>SCH2FMT</td>
<td>Ask all</td>
<td>[Other]=Data Present</td>
<td>1527</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td></td>
</tr>
<tr>
<td>SAMP BOROSTRATUM</td>
<td>Nesting Variable: Stratum</td>
<td>NUM6FMT</td>
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<td>1527</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td></td>
</tr>
<tr>
<td>SAMP PSUUNET</td>
<td>Nesting Variable: PSU</td>
<td>NUM6FMT</td>
<td>Ask all</td>
<td>&gt;0: Data Present</td>
<td>1527</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td></td>
</tr>
<tr>
<td>SAMP HHNEST</td>
<td>Nesting Variable: SSU</td>
<td>NUM6FMT</td>
<td>Ask all</td>
<td>&gt;0: Data Present</td>
<td>1527</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td></td>
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<tr>
<td>SAMP CAPI_WT</td>
<td>Capi Weight</td>
<td>NUM6FMT</td>
<td>Ask all</td>
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<td>1527</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td></td>
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<tr>
<td>SAMP EXAM_WT</td>
<td>Physical Weight</td>
<td>NUM6FMT</td>
<td>Ask all</td>
<td>&gt;0: Data Present</td>
<td>0: No Value</td>
<td>27</td>
<td>1.77</td>
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<tr>
<td>SAMP BLOOD_WT</td>
<td>Blood Weight</td>
<td>NUM6FMT</td>
<td>Ask all</td>
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<td>21.01</td>
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<td>SAMP URINE_WT</td>
<td>Urine Weight</td>
<td>NUM6FMT</td>
<td>Ask all</td>
<td>&gt;0: Data Present</td>
<td>77</td>
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<td>3.70</td>
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<td>NUM6FMT</td>
<td>Ask all</td>
<td>&gt;0: Data Present</td>
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<td>1.32</td>
<td>2.30</td>
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<td>Physical Weight Indicator</td>
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<td>Ask all</td>
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<td>1.77</td>
<td>2.17</td>
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<td></td>
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<td>Blood Weight Indicator</td>
<td>Y1N0F</td>
<td>Ask all</td>
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<td>317</td>
<td>20.70</td>
<td>21.01</td>
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<td></td>
</tr>
<tr>
<td>SAMP WT_URINE</td>
<td>Urine Weight Indicator</td>
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<td>Ask all</td>
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<td>Saliva Weight Indicator</td>
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<td>Ask all</td>
<td>0: No</td>
<td>0</td>
<td>1.32</td>
<td>2.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAQ LAQ1</td>
<td>Interviewer Instructions: What Language Is Being Used to Conduct this Interview?</td>
<td>TE_4F</td>
<td>Ask all</td>
<td>1: English</td>
<td>1308</td>
<td>85.66</td>
<td>83.67</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2: Spanish</td>
<td>143</td>
<td>9.36</td>
<td>10.59</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3: Chinese</td>
<td>22</td>
<td>1.44</td>
<td>1.64</td>
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</tbody>
</table>
## Codebook

<table>
<thead>
<tr>
<th>Codebook Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section</strong></td>
<td>Describes the component of the study the variable comes from</td>
</tr>
<tr>
<td><strong>Raw Name</strong></td>
<td>Name of variable as it appears in the dataset</td>
</tr>
<tr>
<td><strong>Question</strong></td>
<td>Actual question in the questionnaire or brief description of the variable</td>
</tr>
<tr>
<td><strong>Format</strong></td>
<td>SAS Format Name. User-defined formats are applied for variables, and the format names are provided in the SAS program ‘SAS variable formats.sas’.</td>
</tr>
<tr>
<td><strong>2004 Study</strong></td>
<td>Name of variable as it appears in the NYC HANES 2004 dataset. Useful for analysis of change over time</td>
</tr>
<tr>
<td><strong>Notes</strong></td>
<td>Describe the:</td>
</tr>
<tr>
<td></td>
<td>• NHANES matching variable name, when it applies. Useful for analysis comparing NYC to the National estimates.</td>
</tr>
<tr>
<td></td>
<td>• Preceding skip pattern,</td>
</tr>
<tr>
<td></td>
<td>• Instructions for the interviewer or examiner during the interview or examination, and</td>
</tr>
<tr>
<td></td>
<td>• Definitions of recoded variables. The Notes will be useful for identifying the denominator of prevalence estimates and for inclusion criteria.</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>The mean value of continuous variables. Only available for continuous variables.</td>
</tr>
<tr>
<td><strong>Value</strong></td>
<td>The possible responses for a variable, and the codes for those responses. <strong>NOTE:</strong> For continuous variables, the value format shows the sample for which the variable has a non-missing value, missing values, Don’t Knows and Refusals.</td>
</tr>
<tr>
<td><strong>Frequency (unweighted)</strong></td>
<td>Frequency of occurrence.</td>
</tr>
<tr>
<td><strong>Percent (unweighted)</strong></td>
<td>Reflects the occurrence (unweighted) per 100 of the study population.</td>
</tr>
<tr>
<td><strong>Percent (weighted)</strong></td>
<td>Reflects the weighted occurrence per 100 of the weighted population.</td>
</tr>
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</table>
# Key Demographic Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>2004</th>
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<th></th>
<th>2013-14</th>
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<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>%</td>
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<tr>
<td>Total</td>
<td>1999</td>
<td>100.0</td>
<td>100.0</td>
<td>1527</td>
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<td><strong>Age group</strong></td>
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<td>20-29</td>
<td>519</td>
<td>26.0</td>
<td>19.8</td>
<td>360</td>
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<td>30-39</td>
<td>453</td>
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<td>337</td>
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<td>40-49</td>
<td>432</td>
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<td>20.3</td>
<td>252</td>
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<td>18.0</td>
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<td>50-59</td>
<td>309</td>
<td>15.5</td>
<td>15.6</td>
<td>264</td>
<td>17.3</td>
<td>16.9</td>
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<td>60+</td>
<td>286</td>
<td>14.3</td>
<td>21.6</td>
<td>314</td>
<td>20.6</td>
<td>23.1</td>
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<td><strong>Gender</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Men</td>
<td>831</td>
<td>41.6</td>
<td>46.1</td>
<td>642</td>
<td>42.0</td>
<td>46.6</td>
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<tr>
<td>Women</td>
<td>1168</td>
<td>58.4</td>
<td>53.9</td>
<td>885</td>
<td>58.0</td>
<td>53.4</td>
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<td><strong>Marital Status</strong></td>
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<td></td>
<td></td>
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<tr>
<td>Never Married*</td>
<td>746</td>
<td>37.3</td>
<td>34.1</td>
<td>654</td>
<td>42.8</td>
<td>39.6</td>
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<tr>
<td>Married</td>
<td>884</td>
<td>44.2</td>
<td>45.3</td>
<td>590</td>
<td>38.6</td>
<td>42.6</td>
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<td>Widowed, divorced, separated</td>
<td>362</td>
<td>18.1</td>
<td>20.3</td>
<td>283</td>
<td>18.5</td>
<td>17.9</td>
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<td>Don't Know and Refuse</td>
<td>7</td>
<td>0.4</td>
<td>0.4</td>
<td>0</td>
<td>-</td>
<td>-</td>
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<td><strong>Race/ethnicity</strong></td>
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<tr>
<td>Non-Hispanic White</td>
<td>617</td>
<td>30.9</td>
<td>38.4</td>
<td>513</td>
<td>33.6</td>
<td>35.0</td>
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<td>Non-Hispanic Black</td>
<td>433</td>
<td>21.7</td>
<td>23.0</td>
<td>340</td>
<td>22.3</td>
<td>21.3</td>
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<td>Hispanic</td>
<td>260</td>
<td>13.0</td>
<td>10.8</td>
<td>390</td>
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<td>27.1</td>
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<td>Non-Hispanic Asian</td>
<td>657</td>
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<td>204</td>
<td>13.4</td>
<td>14.0</td>
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<tr>
<td>Other**</td>
<td>29</td>
<td>1.5</td>
<td>1.5</td>
<td>80</td>
<td>5.2</td>
<td>2.6</td>
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<tr>
<td>Don't Know and Refuse</td>
<td>4</td>
<td>0.2</td>
<td>0.2</td>
<td>0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Education (Highest Level)</strong></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Less than high school graduate</td>
<td>572</td>
<td>28.6</td>
<td>27.0</td>
<td>316</td>
<td>20.7</td>
<td>18.7</td>
</tr>
<tr>
<td>High school graduate, GED, or alternative</td>
<td>384</td>
<td>19.2</td>
<td>19.0</td>
<td>244</td>
<td>16.0</td>
<td>23.8</td>
</tr>
<tr>
<td>Some college or associate’s degree</td>
<td>419</td>
<td>21.0</td>
<td>20.4</td>
<td>337</td>
<td>22.1</td>
<td>22.6</td>
</tr>
<tr>
<td>College graduate or higher</td>
<td>616</td>
<td>30.8</td>
<td>33.2</td>
<td>628</td>
<td>41.1</td>
<td>34.9</td>
</tr>
<tr>
<td>Don’t Know and Refuse</td>
<td>8</td>
<td>0.4</td>
<td>0.4</td>
<td>2</td>
<td>0.1</td>
<td>0.1</td>
</tr>
</tbody>
</table>

* Includes Single and Living with a Partner

** Includes multiracial (more than one race)
Getting help

• Before starting your analysis, talk to us! We are here to help you.
• Talk to your colleagues.
• Contacting SUDAAN
  – Go to the technical assistance web page, or
  – Send an email at sudaan@RTI.org
NYC HANES 2013-2014 Team and Funding

- **CUNY SPH**: Lorna Thorpe, Co-PI; Amy Freeman, Jesica Rodriguez-Lopez, Liz Lurie, Mark Friedman
- **DOHMH**: Sharon Perlman, Co-PI; Carolyn Greene (PI Emeritus), Ram Koppaka, Elisabeth Snell, Claudia Chernov
- **Public Health Laboratory**: Jennifer Rakeman, Amado Punsalang, Josephine Atamian, Janet Nival, Orlin Trochev, Francesca Giancotti, Gustavo Fernandez, Birdette Davidson, Diana Lasker, Ka Ho Cheng, Leo Yau, Altaf Shaikh
- **Other contributing DOHMH bureaus/programs include**: Division of Epidemiology, Health Police, Environmental Health, DIITT, Administration, Finance, General Counsel, Communications, IGA & Press Office, Mental Health, Disease Control, Health Promotion and Disease Prevention, Health Care Access and Improvement, Commissioner's Office, Thomas Farley, Mary Bassett
- **Other contributing CUNY Offices**: Jennifer Raab, Ayman El-Mohandes, Gillian Small, CUNY Communications, Hunter College Geography Dept; Baruch College Survey research
- The Fund for Public Health in NY, CUNY RF
- RTI International

Support for NYC HANES 2013-14 was provided by the de Beaumont, Robin Hood, the New York State Health Foundations, and the Doris Duke Charitable Foundation.
APPENDIX
Public Use Web Sites

• 2004

• 2013-2014
http://nychanes.org
More about 2004 labs

• All specimens first processed at the NYC Public Health Laboratories, then shipped to 5 additional facilities for further processing:
  – University of Missouri
  – Johns Hopkins University
  – Wadsworth
  – Emory University
  – National Center for Environmental Health at the CDC

• Specimens analyzed at 6 different laboratories
Figure 1. NYC HANES Specimen Processing Flowchart (3.14.04)

Tubes arriving from Clinic for each SP

<table>
<thead>
<tr>
<th>Tube ID</th>
<th>Processing at PHL</th>
<th>Volume</th>
<th>Test (media)</th>
<th>Storage/Shipping Requirements</th>
<th>Lab Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Freeze</td>
<td>1 mL</td>
<td>Fasting Glucose (plasma)</td>
<td>Dry Ice</td>
<td>Univ. of Missouri (#10)</td>
</tr>
<tr>
<td>2</td>
<td>Freeze</td>
<td>2 mL</td>
<td>Lipid Profile (sera)</td>
<td>Drv Ice</td>
<td>Johns Hopkins (#13)</td>
</tr>
<tr>
<td>3</td>
<td>Refrigerate, Aliquot @ PHL</td>
<td>0.5 mL</td>
<td>Glycohemoglobin (whole blood)</td>
<td>Refrigerant Packs</td>
<td>Univ. of Missouri (#10)</td>
</tr>
<tr>
<td>4</td>
<td>Refrigerate, Aliquot @ PHL</td>
<td>3 mL</td>
<td>Heavy Metals (whole blood)</td>
<td>Refrigerant Packs</td>
<td>Wadsworth (#08)</td>
</tr>
<tr>
<td>5</td>
<td>Remove sera, aliquot to 3 2mL vessels &amp; freeze</td>
<td>2 mL</td>
<td>Cotinine (sera)</td>
<td>Drv Ice</td>
<td>Wadsworth (#14)</td>
</tr>
<tr>
<td>6</td>
<td>Remove sera, aliquot to 6 1mL vessels &amp; freeze</td>
<td>0.5 mL</td>
<td>HSV (sera)</td>
<td>Drv Ice</td>
<td>Emory Univ. (#09)</td>
</tr>
<tr>
<td>7</td>
<td>Aliquot to 3 vessels &amp; freeze</td>
<td>0.5 mL (each)</td>
<td>HCV (sera)</td>
<td>Freeze</td>
<td>NYC PHL (#01)</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>15 mL</td>
<td>Pesticides (urine)</td>
<td>Dry Ice</td>
<td>NYC PHL (#01)</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>10 mL</td>
<td>Trace Metals (urine)</td>
<td>Drv Ice</td>
<td>CDC/NCEH (#26)</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>25 mL</td>
<td>Repository (urine)</td>
<td>Drv Ice</td>
<td>Wadsworth (#08)</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>5 mL</td>
<td>Mercury (urine)</td>
<td>Dry Ice</td>
<td>Wadsworth (#08)</td>
</tr>
</tbody>
</table>
More about 2013-14 Labs

• All specimens first processed at the NYC Public Health Laboratories, then shipped to 4 additional facilities for further processing:
  – University of Minnesota
  – Wadsworth
  – Centers for Disease Control and Prevention (CDC)
  – Albert Einstein

• Specimens were analyzed by 3 of the above laboratories
# Figure 1A. NYC HANES Processing Flowchart

<table>
<thead>
<tr>
<th>Specimen Volume</th>
<th>Tube ID</th>
<th>Processing at PHL</th>
<th>Test (media)</th>
<th>Shipping Requirements</th>
<th>Lab Name (Lab ID)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2ml Plasma in Fluoride Oxalate Grey Top tube</td>
<td>1</td>
<td>Aliquot 0.5ml to 4ml vessel</td>
<td>Fasting Glucose (plasma)</td>
<td>Dry Ice</td>
<td>Univ. of Minnesota (#03)</td>
</tr>
<tr>
<td>3ml Whole Blood in 4ml Purple (fuschia) Top EDTA</td>
<td>2</td>
<td>Aliquot 1ml to 4ml vessel</td>
<td>Glycohemoglobin (whole blood)</td>
<td>Dry Ice</td>
<td>Univ. of Minnesota (#03)</td>
</tr>
<tr>
<td>2ml Whole Blood in 2ml Purple (lavender) Top EDTA</td>
<td>3</td>
<td>No aliquoting required</td>
<td>Heavy Metals (whole blood)</td>
<td>Refrigerant Packs</td>
<td>Wadsworth (#02)</td>
</tr>
<tr>
<td>10ml Blood (Clotted) in 10ml in Tiger Transport tube</td>
<td>4</td>
<td>Aliquot 0.6ml sera to 2ml vessel</td>
<td>Lipid Profile (sera) Creatinine (sera)</td>
<td>Dry Ice</td>
<td>Univ. of Minnesota (#03)</td>
</tr>
<tr>
<td>5ml Blood (Clotted) in 7.5ml in Tiger Transport tube</td>
<td>5</td>
<td>Remove sera, aliquot 1ml to 2ml vessel</td>
<td>Cotinine (sera)</td>
<td>Dry Ice</td>
<td>Wadsworth (#02)</td>
</tr>
<tr>
<td>10ml Blood (Clotted) in 10ml in Tiger Transport tube</td>
<td>6</td>
<td>Remove sera, aliquot 1.8ml to each of two 2ml vessels</td>
<td>HBV (sera)</td>
<td>Dry Ice</td>
<td>CDC Labs (#04)</td>
</tr>
<tr>
<td>5ml Blood (Clotted) in 7.5ml Tiger tube</td>
<td>7</td>
<td>Remove sera, aliquot 1ml to each of six 2ml vessels</td>
<td>HCV (sera)</td>
<td>Dry Ice</td>
<td>NYC Public Health Lab (#01)</td>
</tr>
<tr>
<td>Fasting Glucose (plasma)</td>
<td>-70°C</td>
<td>Fasting Glucose (plasma)</td>
<td>Repository (sera)</td>
<td>Dry Ice</td>
<td>NYC Public Health Lab (#01)</td>
</tr>
<tr>
<td>Glycohemoglobin (whole blood)</td>
<td>-70°C</td>
<td>Glycohemoglobin (whole blood)</td>
<td>Repository Freezer</td>
<td>NYC Public Health Lab (#01)</td>
<td></td>
</tr>
</tbody>
</table>
**Figure 1B. NYC HANES Processing Flowchart: Urine and Saliva Specimens**

**Tubes from Clinic/Field**
- 75ml Urine in 120ml cup
- Oral Rinse in 120 ml cup

**Processing at PHL**
- Aliquot 4ml to 5ml vessel
- Aliquot 10ml to 10ml certified vessel with preservative
- Aliquot 10ml to 10ml certified vessel
- Aliquot 5ml to each of five 10ml vessels
- Pour all liquid into 50ml cryovial

**Test (media)**
- Albumin (urine)
- Creatinine (urine)
- Mercury (urine)
- Repository (urine)
- HPV (oral rinse)

**Storage/Shipping Requirements**
- Freeze at -70°C
- Freeze at -20°C
- Repository Freezer
- Freeze

**Lab Name (Lab ID)**
- Univ. of Minnesota (#03)
- Wadsworth (#02)
- NYC Public Health Lab (#01)
- Einstein College of Med (#05)