NHANES 2023

The Future is Now

June 20, 2018

Kathryn S. Porter, MD, MS,
Director, DHANES

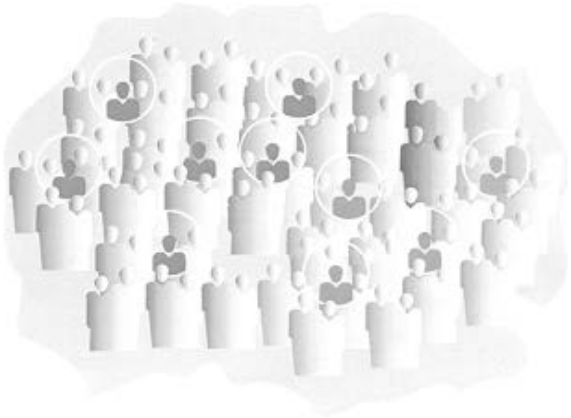
Overview

- Background
- Opportunity
- Market research
- Innovations from NHANES Longitudinal Study – Feasibility Component
- Multiple paths forward
- Core content for NHANES 2023+
- Discussion

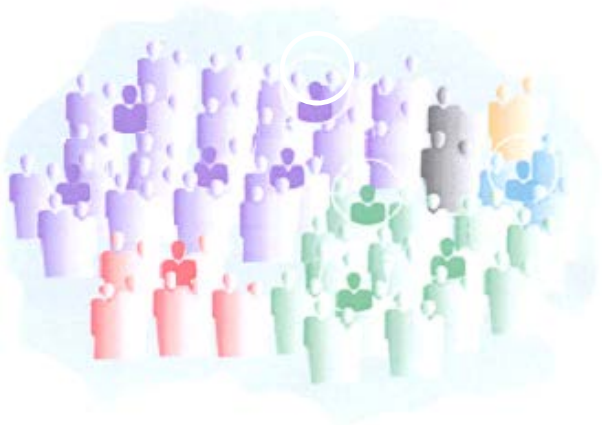
Background

NHANES sample design and selection

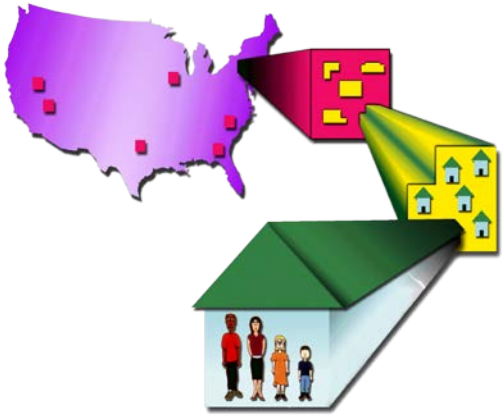
Probability sampling



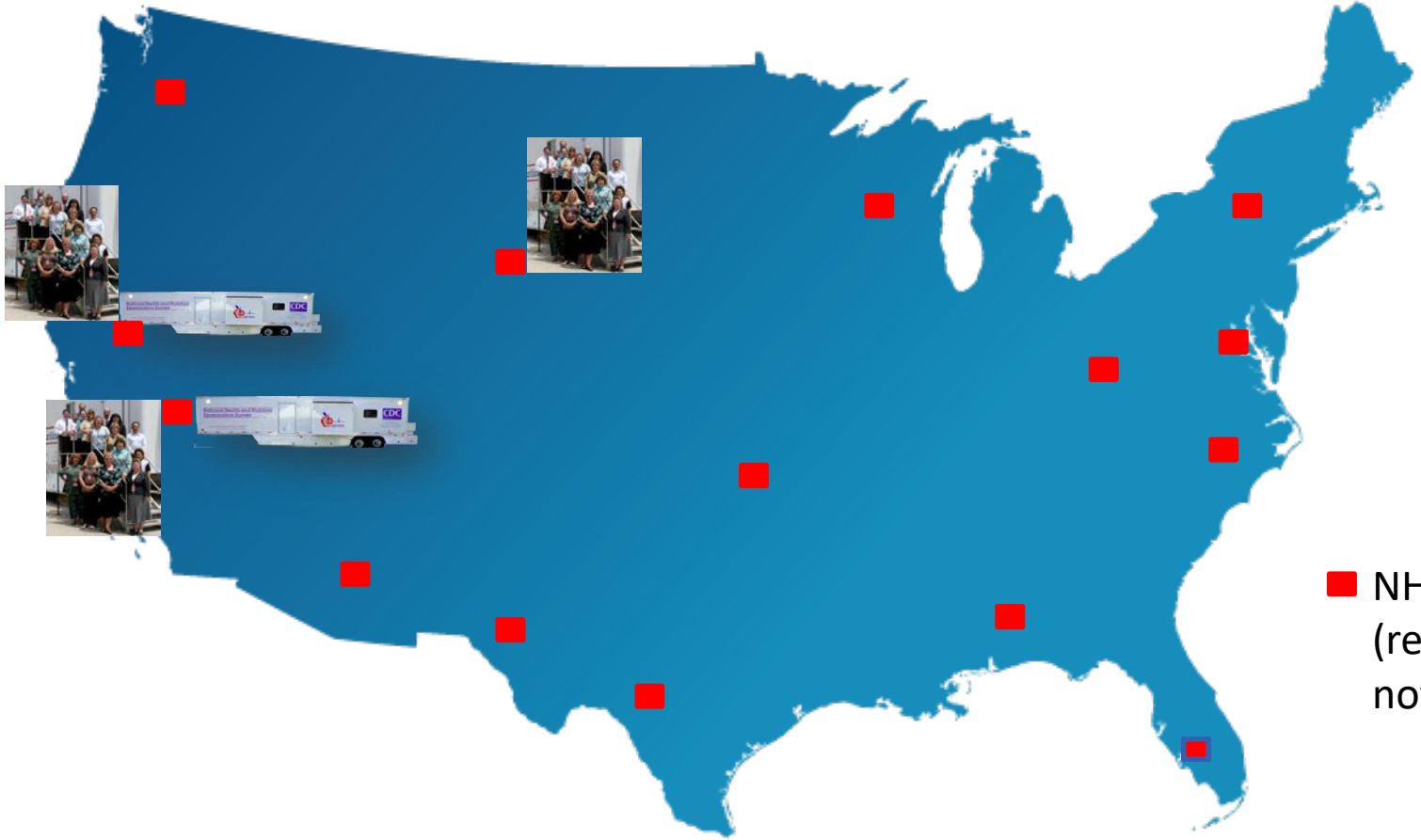
Domain sampling



Multistage, stratified, clustered design



Data collection: work in three locations @ time



Limitations

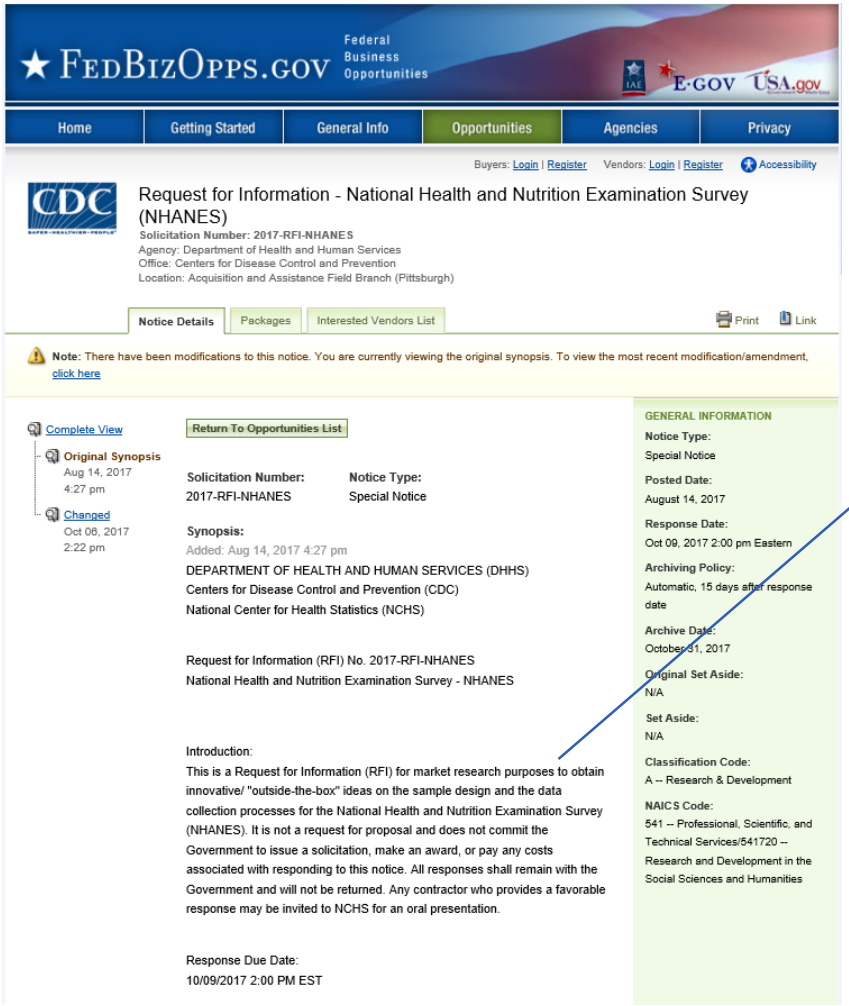
- Few PSUs, highly clustered sample
- A lot of screening required to meet target domains
- Limited time to do field work in each location
- Lately not meeting our annual target of examined participants
  - Declining response rates
- Difficult to produce estimates from two-year cycles
- Expensive

Opportunity

Opportunity

- Current data collection contract ends after the NHANES 2021-22 cycle
- Need a new contract for NHANES 2023 and beyond
- April 2020 – deadline for posting SOW to FedBizOpps if survey is redesigned

Market Research



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CDC

Request for Information - National Health and Nutrition Examination Survey (NHANES)

Solicitation Number: 2017-RFI-NHANES
Agency: Department of Health and Human Services
Office: Centers for Disease Control and Prevention
Location: Acquisition and Assistance Field Branch (Pittsburgh)

Notice Details | Packages | Interested Vendors List Print Link

Note: There have been modifications to this notice. You are currently viewing the original synopsis. To view the most recent modification/amendment, click here

Complete View
Original Synopsis
Aug 14, 2017
4:27 pm
Changed
Oct 06, 2017
2:22 pm

Return To Opportunities List

Solicitation Number: 2017-RFI-NHANES
Notice Type: Special Notice

Synopsis:
Added: Aug 14, 2017 4:27 pm
DEPARTMENT OF HEALTH AND HUMAN SERVICES (DHHS)
Centers for Disease Control and Prevention (CDC)
National Center for Health Statistics (NCHS)

Request for Information (RFI) No. 2017-RFI-NHANES
National Health and Nutrition Examination Survey - NHANES

Introduction:
This is a Request for Information (RFI) for market research purposes to obtain innovative/ "outside-the-box" ideas on the sample design and the data collection processes for the National Health and Nutrition Examination Survey (NHANES). It is not a request for proposal and does not commit the Government to issue a solicitation, make an award, or pay any costs associated with responding to this notice. All responses shall remain with the Government and will not be returned. Any contractor who provides a favorable response may be invited to NCHS for an oral presentation.

Response Due Date:
10/09/2017 2:00 PM EST

GENERAL INFORMATION
Notice Type: Special Notice
Posted Date: August 14, 2017
Response Date: Oct 09, 2017 2:00 pm Eastern
Archiving Policy: Automatic, 15 days after response date
Archive Date: October 31, 2017
Original Set Aside: N/A
Set Aside: N/A
Classification Code: A -- Research & Development
NAICS Code: 541 -- Professional, Scientific, and Technical Services/541720 -- Research and Development in the Social Sciences and Humanities

August 14, 2017

…to **obtain innovative/ "outside-the-box" ideas** on the sample design and the data collection processes for the National Health and Nutrition Examination Survey…

Responses to the RFI

- Several responses followed by open houses
- Themes:
  - Sample design
  - Data collection procedures
  - Gaining respondent cooperation

Responses to the RFI:

Themes on the Sample Design

- **Limitation:**
  - Small number of PSUs → high levels of design effects

- **Solution:**
  - Decrease clustering by increasing the number of PSUs (60 or 100 PSUs/2 yrs.) → favorable impact on the effective sample size

Responses to the RFI:
Themes on the Data Collection

- **Limitation:**
  - Only three Mobile Examination Centers (MECs), two are stationary collecting exam data for limited time in each location
- **Solution:**
  - Consider self-propelled vans to cover a larger number of PSUs, or
  - Consider using brick and mortar fixed sites
  - Consider a combination of:
    - in-home data collection w/ physical measures and specimen collection on a larger sample
    - a select number of specialized exams in MECs, self-propelled vans or fixed sites on a subsample of participants

Responses to the RFI:

Themes on the Data Collection

- **Limitation:**
  - High burden study
- **Solution:**
  - Consider electronic health records
  - Multi-mode data collection

Responses to the RFI:

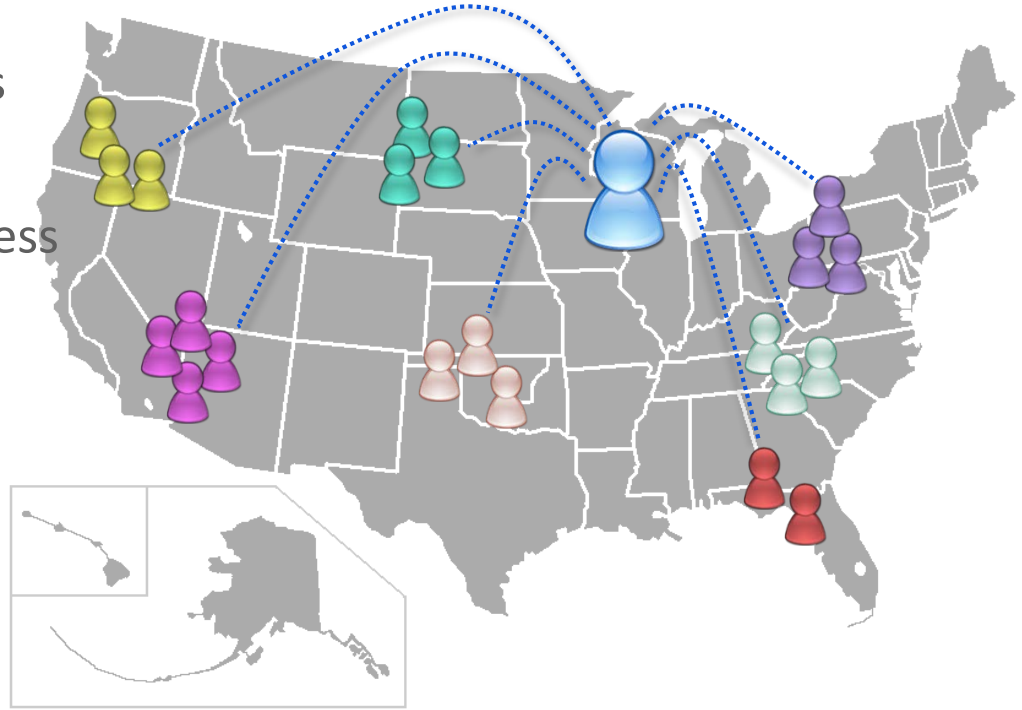
Themes on Gaining Cooperation

- **Limitation:**
  - High burden study
- **Solution:**
  - Market segmentation to identify respondent groups and tailor recruitment materials accordingly
  - Outreach campaigns
  - Incentivize participants at the different stages (i.e. at the screener and interview) and not only after the completion of the exam

Innovations
NHANES Longitudinal Study – Feasibility Component

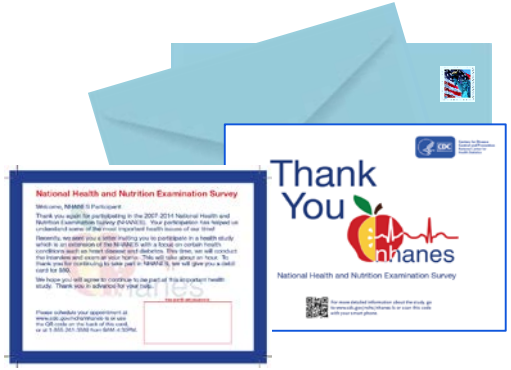
Local health representatives with remote supervision

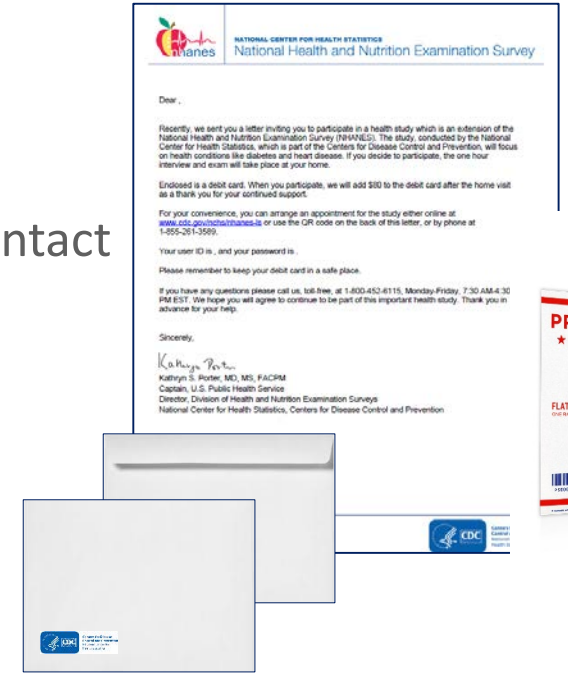
- Simultaneously carry out data collection at multiple locations
- Remote supervision
- Refresher training via web access

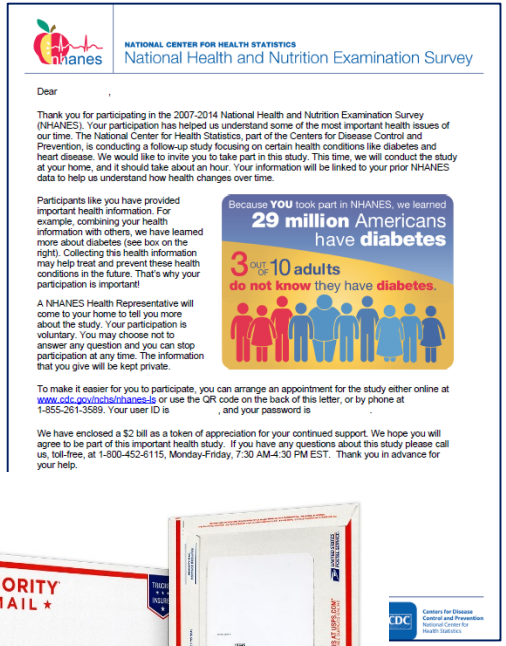


Improved advance materials

- Race-Hispanic origin specific infographic embedded to highlight survey results
- Packaging materials with different design for each contact

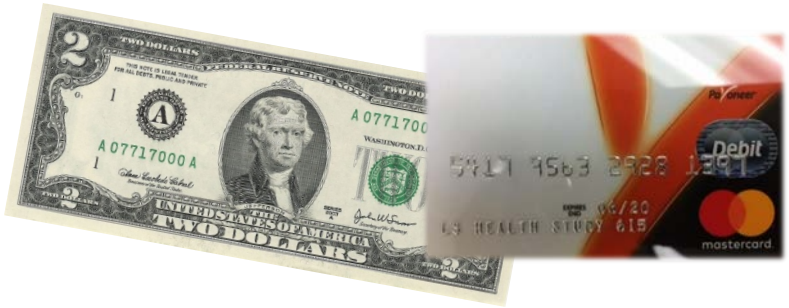


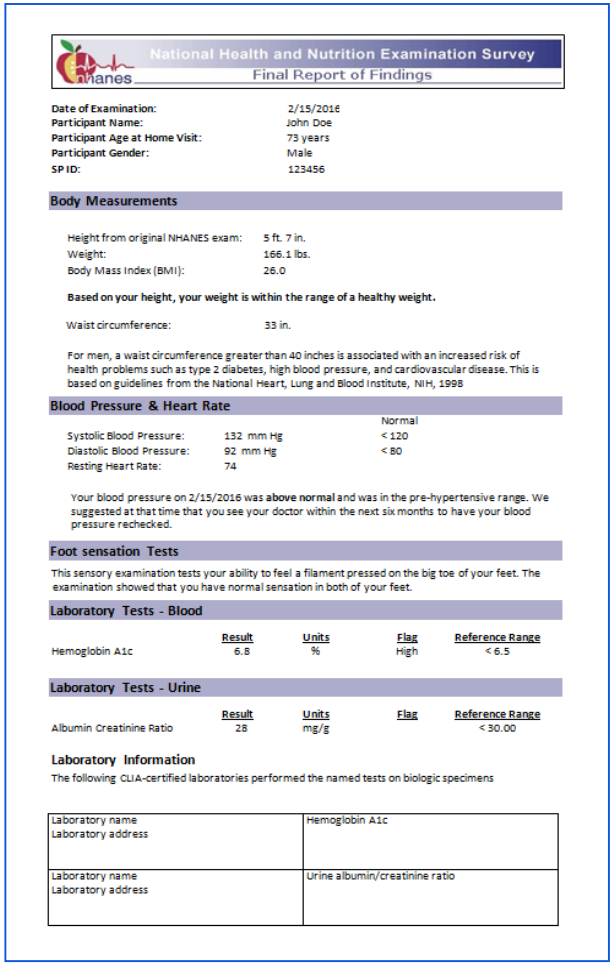




Staged incentives

- Pre-incentive of a two-dollar bill included in the first advance mailing
- Promised incentive with blank debit card included in the second advance mailing
- Initial Report of Findings at the end of home visit
- Final Report of Findings mailed in 3-10 weeks





National Health and Nutrition Examination Survey
Final Report of Findings

Date of Examination:	2/15/2016
Participant Name:	John Doe
Participant Age at Home Visit:	73 years
Participant Gender:	Male
SP ID:	123456

Body Measurements

Height from original NHANES exam:	5 ft. 7 in.
Weight:	166.1 lbs.
Body Mass Index (BMI):	26.0

Based on your height, your weight is within the range of a healthy weight.

Waist circumference: 33 in.

For men, a waist circumference greater than 40 inches is associated with an increased risk of health problems such as type 2 diabetes, high blood pressure, and cardiovascular disease. This is based on guidelines from the National Heart, Lung and Blood Institute, NIH, 1998

Blood Pressure & Heart Rate

		Normal
Systolic Blood Pressure:	132 mm Hg	< 120
Diastolic Blood Pressure:	92 mm Hg	< 80
Resting Heart Rate:	74	

Your blood pressure on 2/15/2016 was **above normal** and was in the pre-hypertensive range. We suggested at that time that you see your doctor within the next six months to have your blood pressure rechecked.

Foot sensation Tests

This sensory examination tests your ability to feel a filament pressed on the big toe of your feet. The examination showed that you have normal sensation in both of your feet.

Laboratory Tests - Blood

	Result	Units	Flag	Reference Range
Hemoglobin A1c	6.8	%	High	< 6.5

Laboratory Tests - Urine

	Result	Units	Flag	Reference Range
Albumin Creatinine Ratio	28	mg/g		< 30.00

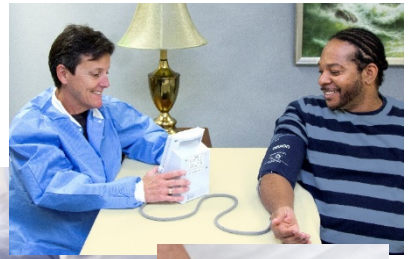
Laboratory Information

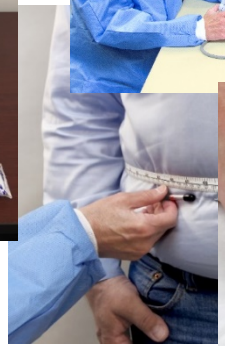
The following CLIA-certified laboratories performed the named tests on biologic specimens

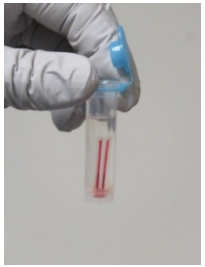
Laboratory name Laboratory address	Hemoglobin A1c
Laboratory name Laboratory address	Urine albumin/creatinine ratio

Home exam: new components and specimen collection

- Measurements of weight, waist circumference and blood pressure, and a foot sensation assessment by monofilament
- Capillary blood and spot urine sample collection

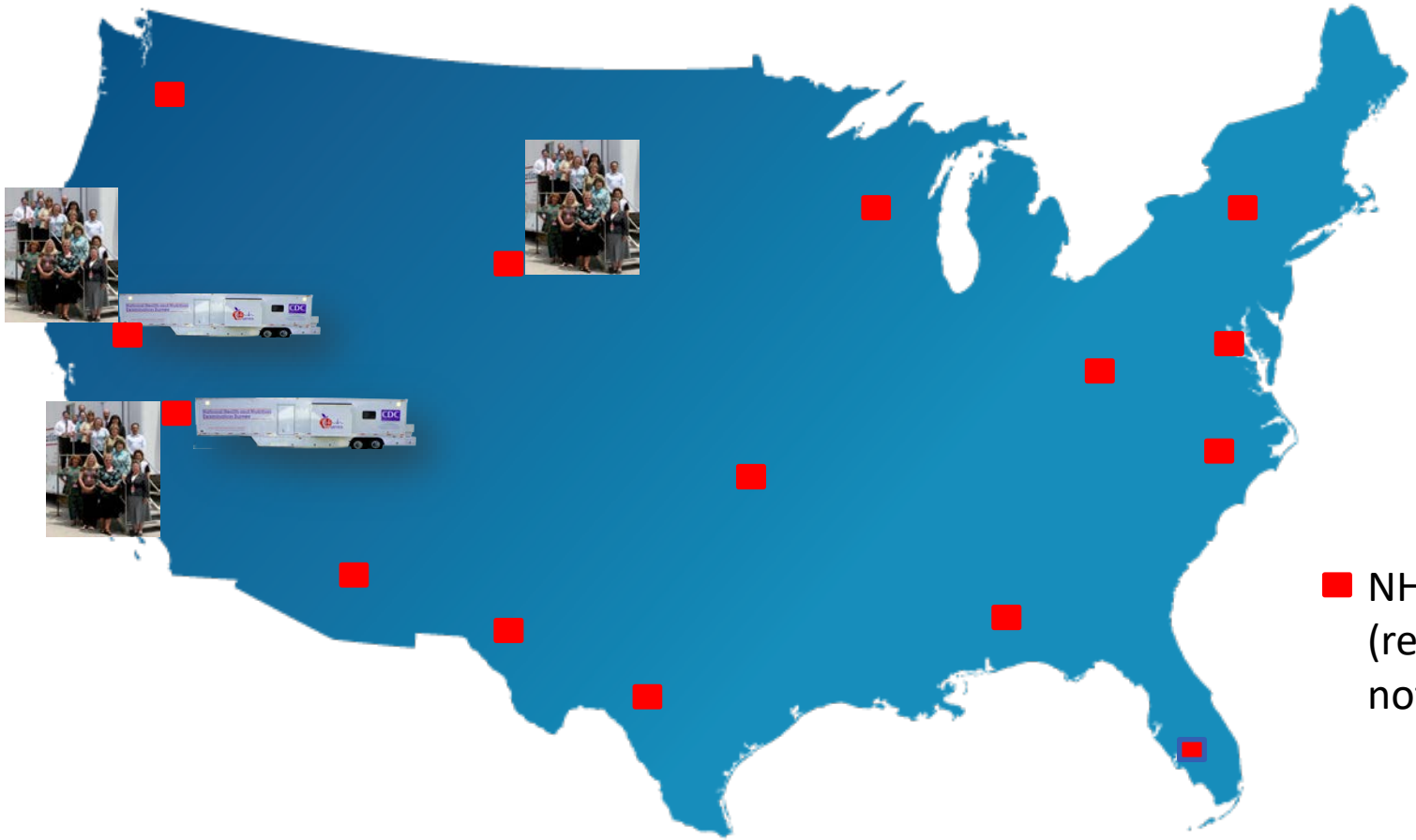






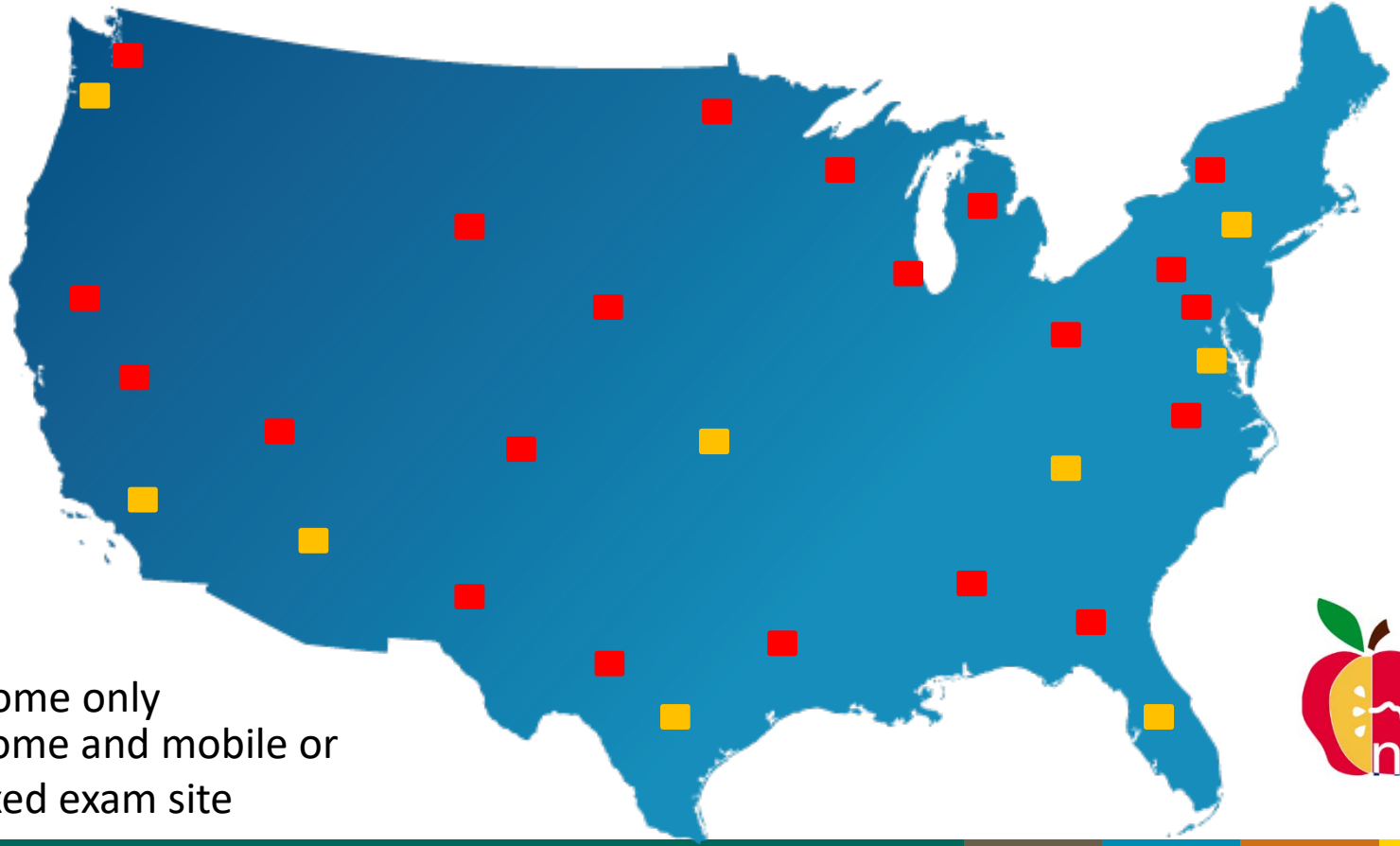
Multiple Paths Forward

1. Keep the current design the same



2. Increase the number of PSUs

2a. Split design: Home-based data collection with mobile or fixed site exam (subsample)

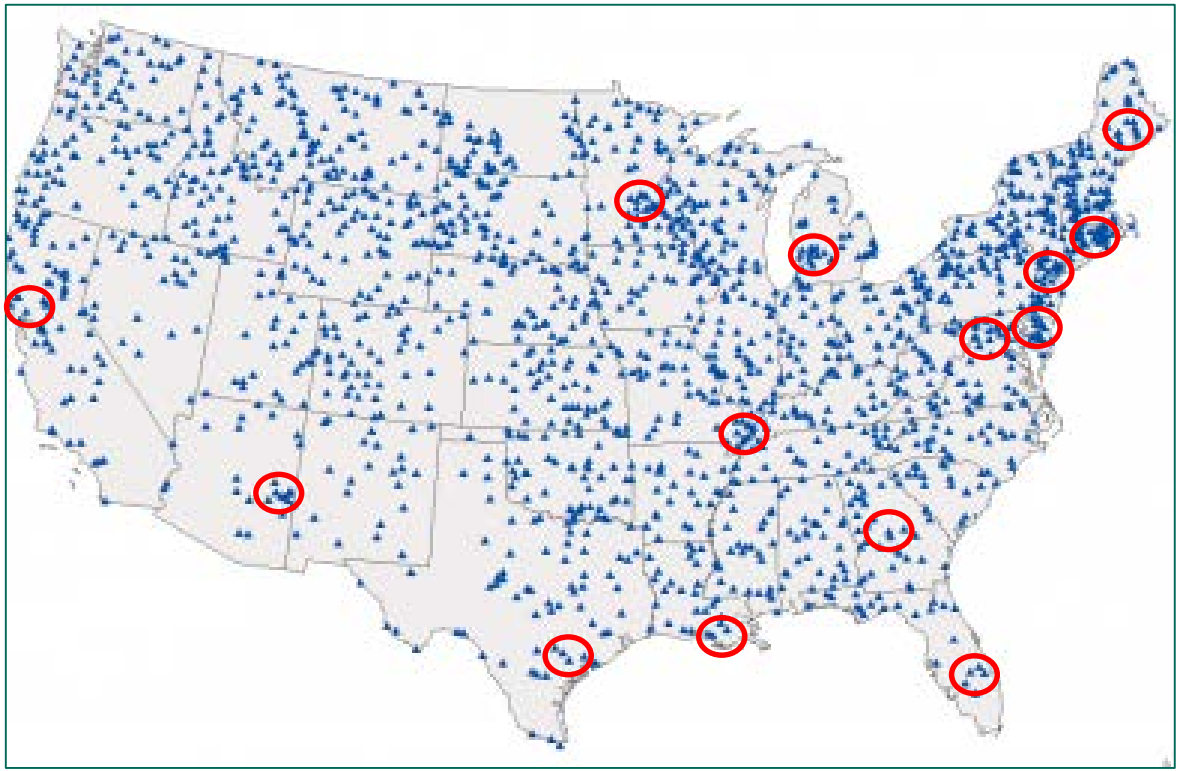


- Home only
- Home and mobile or fixed exam site

2b. NHIS – NHANES Integration

- NHIS PSUs (real locations not shown)

2b. NHIS – NHANES Integration



- NHIS PSUs (real locations not shown)
- Cluster for MEC exam

Work in progress

- Add questions to NHIS 2019 about willingness to have an exam
- Test new protocol for staged incentives in current NHANES survey
- Learn about home-based phlebotomy and blood processing
  - Plan a pilot test in NHANES 2019
- Write tasks orders (CDC's OPHSS Blanket Purchase Agreements)
  - Follow-up study of nonresponders
  - Evaluation of current protocol to obtain cooperation, make recommendations
  - Pilot test new procedures to obtain cooperation

Core Content NHANES 2023+

Work in progress

- Identify what statistics are needed in 2025 and beyond that *only NHANES* can deliver
    - Total burden of chronic disease – undiagnosed conditions
    - Dietary intakes and nutrition status
    - Environmental exposures
    - Population-based prevalence of infectious diseases
    - Reference values

- Identify statistics that are needed for trends

NHANES Funding

Internal funding

Collaborators

NHANES Funding

← Internal funding →

NCHS funded CORE

- Overweight, obesity (anthropometry)
- Hypertension, prehypertension (blood pressure measurements)
- Dietary intakes (24-hour dietary recall)*
- Dietary supplement use*
- Prescription opiate use, antibiotic use (prescription drug component)

- Specimen collection and processing (blood and urine)
- Specimen banking

* Partially funded

Collaborator funded content to consider moving forward

Exam

- Oral health
- Respiratory health
- Mental health
- Cognitive functioning
- Sensory impairments
  - Hearing, vision, balance
- Fitness
- Bone densitometry (DXA)

Blood, urine, other

- Diabetes
- Dyslipidemias
- Cotinine
- Infectious diseases
- Nutritional biomarkers
- Environmental chemicals

Avoid duplication

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Before we open the program across the United States, we are enrolling a limited number of people as beta testers.

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NHANES and the NIH “All of Us” Research Program

Study Sample
1. Probability sampling design – nationally representative
2. All ages
3. 5,000 per year

Measurements
1. In-home interview (CAPI)
2. Physical measurements and biospecimen collections in MEC

Limitation
1. Sample size
2. Response rates

Study Sample
1. Non-probability sampling design used to recruit from health care provider organizations (HPOs) or direct volunteers (DV)
2. Adults 18+ years
3. 1 million over 10 years

Measurements:
1. Online or at DV/HPO site.
2. Physical measurements and biospecimen collections at DV/HPO site or data collected from EHRs.

Limitation
1. Standardization of all measurements
2. External validity (representativeness)

Discussion

Questions to the NCHS BSC

- Since the survey design is dependent on the statistics needed, how should we go about identifying the NHANES 2023 content?

- How much of a limitation is the current design (small number of PSUs, high oversampling?)

- Many moving parts, what should we work on first?
  - Content? Design? Oversampling?

http://www.cdc.gov/nchs/nhanes