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From: Kathryn S. Porter, MD, MS, FACPM
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Subject: Sample design research for the 2019-2022 National Health and Nutrition Examination Survey (NHANES)

To: NHANES Collaborators

Periodically the Division of Health and Nutrition Examination Survey (DHANES) studies options for the sample design of the NHANES survey. This has led over the years to oversamples of subgroups of the population such as infants less than one year of age, adults older than 69, pregnant women, adolescents (ages 12-19) and the Asian population. Currently the oversample of two racial groups (Blacks and Asians), the Hispanic population and adults older than 69 significantly limit the potential for oversampling additional subgroups within the 5000 per year exam model of the NHANES mobile examination center (MEC).

We are soliciting interests in particular subgroups of the population that can be oversampled. It is not expected that we will stop oversampling any of the current oversampled groups in the foreseeable future, therefore any additional groups most likely would have to be examined in a 5th trailer, though all options will be considered. In 2012, DHANES undertook the NHANES National Youth Fitness Study (NNYFS). In this study 1500 children ages 3-15 were selected independently of NHANES. They were selected in the same counties and neighborhoods but different households from the NHANES participants. They were examined in a one trailer MEC (the 5th trailer) adjacent to the NHANES MEC receiving selected components relevant to their age group and the objective of the survey. Significant efficiencies were possible because only one set of interviewers, one field office and one examination center location were required.

Any new oversample could be part of the NHANES or an independent sample such as the NNYFS. The restriction for an independent sample would be that their examination would have to be less than 2 hours. For NNYFS, an independent sample, content in common with NHANES can be combined to have a greater sample size. Content solely on the NNYFS has only the sample size provided by the NNYFS. To supplement the current sample size of a subgroup, the examination components should also be part of the examination occurring in the NHANES MEC. If the objective of studying the subgroup study requires different examination components, the sample size would be based only on the examination in the 5th trailer MEC.

If there is a particular population subgroup that your institution is interested in studying via a national sample, please forward a brief summary of specific objectives for that subgroup by **July 15, 2016**. The design research would determine if oversampling would be feasible. There is **no cost** to you for the design research. There is **no commitment** to supporting such a study if it is found that the oversampling

is feasible. Please suggest only sample design options that are important to your institution and that you would be willing to fund alone or in a consortium with others. DHANES does not anticipate internal resources to fund any additional oversamples. The magnitude of cost of such an endeavor will likely be $4 million dollars or more. A key aspect of the cost of sampling a subgroup is how rare that subgroup is in the population.

In your summary of a subgroup of interest please address how the current NHANES design is not providing an adequate sample size for the health measures of interest. An example is attached to give some idea of the minimum level of detail that is desired in your response.

If you have questions or would like to schedule a meeting or conference call, please contact Natalie Dupree (contact information below).

Send your submission via e-mail to:

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Thank you for your interest in NHANES. If you know of others who would be interested in proposing sample design options, please forward this letter.

Attachment

Attachment—Mock proposal for sample design interests

Proposal to oversample adolescents ages 10-19 in 2019-2022

Background: While adolescents are generally healthy, behavioral and mental health problems, including alcohol and drug misuse, injuries, violence, obesity, risky sexual behaviors and other challenges, may affect this age group. These health problems can lead to risky or impulsive actions that can harm or limit an adolescent's opportunities later in life. Giving an adolescent the chance to build knowledge and skills that promote positive emotional and social experiences allows these young people to avoid negative health outcomes. It is during adolescence that lifelong behaviors are set in such areas as diet and exercise; sexual conduct; practices related to oral health, smoking, drinking, and the use of legal and illegal substances; and peer interactions that can enhance or discourage injuries. The health concerns of adolescents generally involve behavioral practices. The way adolescents spend their time can strongly influence their health later in life. For youth to maintain a healthy future, they need plenty of sleep; good nutrition; and regular exercise.

- Many young people engage in sexual risk behaviors that can result in unintended health outcomes. Sexual risk behaviors place adolescents at risk for HIV infection, other sexually transmitted diseases (STDs), and unintended pregnancy. Nearly half of the 20 million new STDs each year were among young people, between the ages of 15 to 24.
- Half of all mental health disorders in adulthood appear to start by age 14, but most cases are undetected and untreated. Depression is the top cause of illness and disability among adolescents and suicide is the third cause of death.
- More adolescents drink alcohol than smoke cigarettes or use marijuana. Nearly four in ten high school seniors report drinking some alcohol within the past month. Drinking endangers adolescents in multiple ways including motor vehicle crashes. The vast majority of people using tobacco today began when they were adolescents.
- By the twelfth grade, about half of adolescents have abused an illicit drug at least once. The most commonly used drug is marijuana, but adolescents can find many abused substances, such as prescription medications, glues, and aerosols, in the home.
- Only 42.2% of youth aged 12–15 years had adequate levels of cardiorespiratory fitness in 2012.

Proposed subgroup to oversample:

More than 12 percent of people in the United States — almost 42 million — are between the ages of 10 and 19. These adolescents are increasingly diverse and reflect the changing racial/ethnic, socioeconomic, and geographic structure of the U.S. population. These diverse characteristics not only influence how young people see themselves, but also are connected to adolescents' health outcomes and access to services.

We propose oversampling adolescents ages 10-19. Because of the diversity in health behaviors among adolescents, the oversample must be able to provide estimates for NH white, NH black and Hispanic adolescents.

Conditions or risk factors of interest in this subgroup that should be considered in sample design:

Some conditions of interest are:

Prevalence of quadrivalent HPV vaccine types 6, 11, 16, and/or 18 in vaginal specimens among females aged 14–19 years. In 2010 the prevalence was 5.1%.

Prevalence of depression. In 2012 the prevalence was 4.0% in males ages 12-17.

Prevalence of adequate cardiorespiratory fitness among obese adolescents. In 2010 among all youth aged 12–15, only 20% of obese youth had adequate levels.

And so on….

Contact(s):

Jane Doe
National Institute of Teenagers
Email:
Phone:
Address:

References for background or conditions/risk factors of interest: