

Attachment 5b
2023 NHIS Proposed New Content
Concepts Measured, Duplication, and Proposed Uses of Data

Sponsored content: New sponsored content for sample adults only includes questions on conditions (Crohn’s disease, ulcerative colitis, psoriasis, arthritis), conditions specific to vision (diabetic retinopathy, glaucoma, macular degeneration), preventive screening (breast and colorectal cancer screening), family history of cancer, genetic cancer screening, and workplace exposure to ototoxic substances (e.g., solvents and tobacco smoke).

For both adults and children, items are proposed for vision services. For adults, items on time of last eye exam, use of vision rehabilitation devices, use of vision assistive devices, health professional recommend services, need for eyeglasses/contact to read up close, and need for eyeglasses/contacts to see in a distance are proposed. For children items on ever having vision tested, time of last eye exam and need for eyeglasses/contact to read up close, and need for eyeglasses/contacts to see in a distance are proposed.

For both adults and children, items are proposed for balance and hearing including items on hearing ability and testing, ear infections, balance, dizziness problems or falls, head injuries, tinnitus, exposure to loud noises and efforts to protect hearing, and consultation with health care providers for hearing problems.

For both adults and children, items on traumatic brain injuries, and the impact of long-COVID on daily living are also are proposed.

Emerging content: New emerging content includes sample adult items for housing insecurity and from the everyday discrimination scale and the heightened vigilance scale.

NEW SPONSORED CONTENT

Crohn's disease and ulcerative colitis - Sample Adult

Sponsor: National Center for Chronic Disease Prevention and Health Promotion

Inflammatory bowel disease (IBD) is characterized by chronic inflammation of the gastrointestinal tract. Crohn's disease and ulcerative colitis are the most common types of IBD. According to the 2015 National Health Interview Survey (NHIS), 3 million US adults aged 18 years or older have been told by a doctor or health care professional they had either Crohn's disease or ulcerative colitis. IBD is associated with multiple chronic conditions, decreased quality of life, and complications requiring hospitalizations and surgical procedures. Recent data show the prevalence of IBD has increased in the world.

Regular estimates of the prevalence of IBD in the United States are limited and the most recent national estimates are from the 2016 NHIS. Updated prevalence estimates are needed to understand current demographic patterns in IBD as demographic differences may be changing over time. For example, IBD prevalence among Medicare beneficiaries aged 67 years and older increased from 2001 to 2018 with a higher rate of increase among certain racial/ethnic minority groups. In addition, the NHIS IBD questions used in 2015 and 2016 did not differentiate Crohn's disease from ulcerative colitis. Because these two diseases have different clinical presentations and treatments, it is important to understand how they differ in terms of patients' demographic characteristics. The National Health and Nutrition Examination Survey (NHANES) collected data by IBD type in the 2009-2010 cycle. Using the NHIS to monitor the current prevalence of IBD can enhance understanding of health and financial burdens IBD places on the health care system. In addition, CDC works with and funds IBD partners to conduct IBD-related research and translational activities. Understanding the burden of IBD overall, by disease type, and by different demographic subgroups can help guide research efforts, as well as efforts to support patient and health providers education and awareness activities to improve the quality of life of affected individuals.

Concepts Measured

- Ever been told by a doctor or other health professional had Crohn's disease (CROHNSEV_A)
- Ever been told by a doctor or other health professional had ulcerative colitis (ULCCOLEV_A)

Duplication and Previous NHIS

- IBD questions were included on the 1999, 2015, and 2016 NHIS ("Have you EVER been told by a doctor or other health professional that you had Crohn's disease or ulcerative colitis?")

- NHANES fielded questions about IBD in cycles 2009-2010. (“Has a doctor or other health professional ever told {you/SP} that {you/s/he} had Crohn's (crow-n-z) disease?”; “Has a doctor or other health professional ever told {you/SP} that {you/s/he} had ulcerative colitis (ulcer-a-tive co-light-us)?”)

Proposed Use of the Data

- Data are intended to produce reliable national estimates of Crohn’s disease and ulcerative colitis, individually, for the adult population, and where there is sufficient sample size, to estimate the prevalence of psoriasis for several subpopulations.
- The questions will be included for two years (2023 and 2024) to allow for pooling of data to ensure sufficient sample sizes for smaller subgroups.
- Based on the 2015 NHIS data, the prevalence of Crohn’s disease or ulcerative colitis in US adults aged 18 years or older is 1.3%.¹ The item will be included on the survey for two years. Based on a pooled sample of N~54,000 adults, the NHIS will be able to produce reliable prevalence estimates for any subpopulation that is at least 5% of the total population.

References

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Psoriasis - Sample Adult

Sponsor: National Center for Chronic Disease Prevention and Health Promotion

Psoriasis affects 3% of US adults and is one of the most common immune-mediated diseases in the United States. Psoriasis is a chronic, inflammatory skin condition that is associated with multiple comorbidities, including psoriatic arthritis, cardiometabolic diseases, and mental health conditions. In 2013, the annual US cost of psoriasis was approximately \$112 billion.

The Centers for Disease Control and Prevention (CDC) has worked and continues to work with partners to address psoriasis. In 2010, CDC and partners developed a public health agenda for psoriasis. Regularly providing updated prevalence estimates of psoriasis and examining disparities in prevalence (e.g., age, gender, racial/ethnic) were identified as key aspects of the agenda. The National Health and Nutrition Examination Survey (NHANES) included psoriasis questions previously; however, these questions have not been fielded since the 2013-2014 cycle. NHIS included a question on psoriasis and eczema combined in 1996. In 2021, psoriasis was one of four conditions initially funded under the newly established Chronic Disease Education and Awareness grant. Updating information about the prevalence of psoriasis and how it differs by select demographic and health characteristic will help support future healthcare provider and patient education and awareness activities to improve the lives of patients with psoriasis.

Concepts Measured

- Ever been told by a doctor or other health professional had psoriasis (PSOREV_A)

Duplication and Previous NHIS

- Question including eczema and psoriasis fielded on the 1996 NHIS.
- NHANES fielded questions about doctor-diagnosed psoriasis in cycles 2003-2004, 2005-2006, 2009-2010, 2011-2012, and 2013-2014.

Proposed Use of the Data

- Data are intended to produce reliable national estimates of psoriasis for the adult population, and where there is sufficient sample size, to estimate the prevalence of psoriasis for several subpopulations.
- The psoriasis questions will be included for two years (2023 and 2024) to allow for pooling of data to ensure sufficient sample sizes for smaller subgroups.
- The prevalence of psoriasis in US adults aged 20 years or older was 3% based on 2011-2014 NHANES data. The item will be included on the survey for two years. Based on

a pooled sample of N~54,000 adults, the NHIS will be able to produce reliable prevalence estimates for any subpopulation that is at least 2% of the total population.

References

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Arthritis – Sample Adult

Sponsor: NIH/NIAMS - National Institute of Arthritis and Musculoskeletal and Skin Diseases
CDC/NCCDPHP - National Center for Chronic Disease Prevention and Health Promotion

Arthritis is a general term for more than 100 conditions that affect the joints or tissues around the joint, including osteoarthritis, rheumatoid arthritis, gout and fibromyalgia. Arthritis is an often overlooked, leading contributor to chronic disease burden and a top cause of morbidity, work limitations, and reduced quality of life. More than 58 million US adults have arthritis, half of whom are working aged; and 78 million are projected to have it by 2040. Arthritis affects a person's overall function and mobility, which can result in activity and other limitations. It is a leading cause of disability and the leading cause of work disability among US adults. Many adults with arthritis

have moderate or severe joint pain and approximately 44% of adults with arthritis report limitations, which can include trouble doing daily activities, attributable to arthritis.

The NHIS is the principal source of information assessing arthritis in adults ≥ 18 years. Continuing to incorporate arthritis items in the NHIS allows for reliable national estimates of arthritis in the U.S. population.

Concepts Measured

- Past 30 DAYS, had any symptoms of pain, aching, or stiffness in or around a joint (JNTSYMP_A)
- On a scale of 0 to 10, intensity of joint pain (JNTPN_A)
- Limited in any usual activities because of arthritis or joint symptoms (ARTHLMT_A)
- Arthritis or joint symptoms affect work (ARTHWRK_A)
- Doctor or health professional ever suggest physical activity or exercise to help with arthritis or joint symptoms (ARTHPH_A)

Duplication and Previous NHIS

- Items capturing arthritis-attributable activity limitations, work limitations and physical activity counseling (JNTSYMP_A, JNTPN_A, ARTHLMT_A, ARTHWRK_A, ARTHPH_A) were last fielded in the 2019 NHIS.
- The Behavioral Risk Factor Surveillance System (BRFSS) collects information on the burden of arthritis and assesses how arthritis affects quality of life, but it does not provide national estimates.

Proposed Use of the Data

- Arthritis objectives are included in Healthy People 2030 which focus on decreasing the negative impacts of arthritis, including pain, disability and limitations, and increasing the use of effective, evidence-based interventions to decrease pain and improve function, physical activity, and quality of life for adults affected by this condition. The data are intended to track and monitor progress on the following arthritis Healthy People 2030 objectives:
 - A-01 Reduce the proportion of adults with provider-diagnosed arthritis who experience severe or moderate joint pain (JNTSYMP_A, JNTPN_A)
 - A-02 Reduce the proportion of adults with arthritis whose arthritis limits their activities (ARTHLMT_A)
 - A-03 Reduce the proportion of adults with arthritis whose arthritis limits their work (ARTHWRK_A)
 - A-04 Increase the proportion of adults with arthritis who get counseling for physical activity (ARTHPH_A)
- Based on combined data from the 2015-2018 NHIS, an estimated 58.5 million adults aged ≥ 18 years (23.7% of all adults) reported arthritis.

- Based on 2019 unweighted NHIS data, 74.6% of those with arthritis reported having joint symptoms in the last 30 days (17.6% of all adults) (JNTSYMP_A). Based on a sample size of N~27,000 adults, the NHIS will be able to produce reliable prevalence estimates for joint symptoms and pain for any subpopulation that is at least 0.5% of the total population.
- The data can be used to produce reliable national estimates of arthritis-attributable activity limitations for the adult. Based on the combined data from the 2015-2018 NHIS, 43.9% among those with arthritis reported arthritis-attributable activity limitations (10.4% of all adults) (ARTHLMT_A, ARTHWRK_A).). Based on a sample size of N~27,000 adults, the NHIS will be able to produce reliable prevalence estimates of arthritis-attributable activity limitations for any subpopulation that is at least 2% of the total population.
- In addition to monitoring Healthy People objectives, the data produced will allow the CDC Arthritis Program to monitor national estimates of the proportion of adults with arthritis who receive physician counseling for physical activity as a nonpharmacologic treatment. Based on 2019 unweighted NHIS data, 53.4% of those with arthritis report receiving physician counseling for physical activity to help with arthritis symptoms (12.7% of all adults). Based on a sample size of N~27,000 adults, the NHIS will be able to produce reliable prevalence estimates on physician counseling for physical activity for any subpopulation that is at least 2% of the total population.

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Vision Conditions – Sample Adult

Sponsor: NIH/NEI - National Eye Institute

Age-related macular degeneration, diabetic retinopathy, and glaucoma are common eye diseases that in their most severe forms can result in irreversible vision loss. Cataracts and refractive errors are largely treatable, but these conditions can cause unnecessary vision loss if people do not use or have access to eye care services (Sayda, et al., 2020). A main purpose of seeking information on eye diseases and subsequent loss of vision in the 2023 NHIS is to collect interim data to track progress on the Healthy People 2030 Vision Objectives to reduce vision loss from diabetic retinopathy, glaucoma, age-related macular degeneration and cataract.

Concepts Measured

- Ever been told by a doctor or other health professional had diabetic retinopathy (VIMDREV_A)
- Lost vision due to diabetic retinopathy (VIMLSDR_A)
- Ever been told by a doctor or other health professional had glaucoma (VIMGLEV_A)
- Lost vision due to glaucoma (VIMLSGL_A)
- Ever been told by a doctor or other health professional had macular degeneration (VIMMDEV_A)
- Lost vision due to macular degeneration (VIMLSMD_A)
- Ever had cataract surgery (VIMCSURG_A)
- Ever been told by a doctor or other health professional had cataracts (VIMCAEV_A)
- Lost vision due to cataracts (VIMLSCA_A)

Duplication and Previous NHIS

- These vision questions (a few with minor word changes), were asked in previous iterations of this survey, most recently in the 2017 National Health Interview Survey.
- In 2017, all of the items were asked of sample adults 18+. In 2023, the universes for the macular degeneration and cataract items will be restricted to sample adults 45+ since virtually all of the 2017 reporting of these diseases was in this age group. This reduces the burden of the survey on respondents.

Proposed Use of the Data

- Data from the NHIS2023 vision questions will also allow the NEI to tailor programming and evaluate effectiveness of the NEI’s National Eye Health Education Program (NEHEP, <https://www.nei.nih.gov/learn-about-eye-health/outreach-campaigns-and-resources/national-eye-health-education-program>) and monitor needs, opportunities and

progress translating research advances into clinical practice as written in the NEI Strategic Plan: Vision for the Future (2021-2025)
<https://www.nei.nih.gov/about/strategic-planning>.

- It is highly likely the Vision Health Initiative in the Division of Diabetes Translation, National Center for Chronic Disease, Centers for Disease Control and Prevention will add to its existing data from NHIS to integrate the 2023 NHIS methods, data dictionary and results into its Data Dashboard <https://www.cdc.gov/visionhealth/vehss/data/national-surveys/national-health-interview-survey.html>
- Based on combined 2016-2017 NHIS data, the adult population prevalence for adults who have been told they have diabetic retinopathy is 0.9% (VIMDREV_A), for glaucoma is 2.6% (VIMGLEV_A), for macular degeneration is 1.8% (VIMMDEV_A), and for cataracts is 13.5% (VIMSURG_A, VIMCAEV_A) (Lemuda, et al., 2021)
- Based on a sample size of N~27,000 adults, the NHIS will be able to produce reliable prevalence estimates for diabetic retinopathy for any subpopulation that is at least 11% of the total population; for glaucoma, for any subpopulation that is at least 4% of the total population; for macular degeneration, for any subpopulation that is at least 6% of the total population; and for cataracts, for any subpopulation that is at least 1% of the total population.
- Based on unweighted 2017 NHIS data, 42.9% of adults who have diabetic retinopathy report vision loss (0.4% of all adults); 31.3% of those who have glaucoma report vision loss, (0.8% of all adults); 48.7% of those who have macular degeneration report vision loss, (0.9% of all adults); and 26.8% of those with cataracts report vision loss (3.6% of all adults). Reliable total population point estimates can be made for vision loss from each of these diseases.
- As for subpopulation estimates, for vision loss from diabetic retinopathy, based on a sample size of N~27,000 adults, reliable estimates can be produced for any subpopulation that is at least 22% of total population; from glaucoma, for any subpopulation that is at least 11% of total population; from macular degeneration, for any subpopulation that is at least 11% of total population; and from cataracts for any subpopulation that is at least 4% of total population.

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Preventive Cancer Screening – Breast Cancer Screening - Sample Adult

Sponsors: NIH/NCI - National Cancer Institute, CDC/NCCDPHP - National Center for Chronic Disease Prevention and Health Promotion

After non-melanoma skin cancers, female breast cancer is the most frequently diagnosed cancer and the second leading cause of cancer death among US women. Each year, there are more than 260,000 newly diagnosed cases of female breast cancer (130 cases per 100,000 women) and 42,000 deaths (19 deaths per 100,000 women) from this disease (US Cancer Statistics, Data Visualizations Tool).

The US Preventive Services Task Force has concluded that breast cancer screening with mammography is effective in reducing breast cancer mortality for women and recommends biennial screening mammography for women aged 50 to 74 years (<https://www.uspreventiveservicestaskforce.org>). Screening cannot prevent a cancer from developing, but it can lead to diagnosis at earlier stages when it is easier to treat, potentially reducing morbidity and mortality from the cancer and its treatment.

The National Health Interview Survey is the designated data source for measuring progress towards Healthy People objective C-05: increase the proportion of females who get screened for breast cancer.

In addition to the breast screening items from the NHIS rotating core and sponsored content from the 2021 NHIS, several items on breast MRI are being proposed for 2023 (MRIHAD_A, MRIWHEN_A, MRIREAS_A). These items relate to breast cancer screening for women who have a high risk for developing breast cancer, including those with certain inherited genetic mutations or other risk factors. The use of breast MRI in addition to mammography is recommended by the American Cancer Society as a screening test for women at high risk for developing breast cancer.

Concepts Measured

- Ever had breast MRI (MRIHAD_A)
- How long since the last breast MRI (MRIWHEN_A)
- Main reason for breast MRI (MRIREA_A)

Duplication and Previous NHIS

- This series of items was previously fielded in the 2010 NHIS.

Proposed Use of the Data

- Data from these items will be used to help track progress toward Healthy People objective C-05: increase the proportion of females who get screened for breast cancer.
- Based on unweighted data from 2010, 4.4% of women 30 years of age or older (41.5% of adult population) have ever had a breast MRI (1.8% of all adults)(MRIHAD_A). Reliable estimates can be produced for this exam for any subpopulation that is at least 6% of the total population. When combined with other breast screening tests, reliable estimates can be produced for most subpopulations captured in the NHIS.
- Based on unweighted data from the 2010 NHIS, 32.7% reported having an MRI to follow-up an abnormal mammogram (0.6% of all adults); 24.8% reported having the MRI because of a breast problem (0.4% of all adults), 23.3% reported having this exam as part of a routine exam (0.4% of all adults); and 18.2% reported having it because they were at high risk, family history, genetics or some other reason (0.3% of all adults). (MRI_REA_A). Based on a sample size of N~27,000 adults, reliable total population point estimates can be made, but subpopulation estimates can only be made if some categories are combined.

References

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Family History of Cancer – Sample Adult

Sponsor: NIH/NCI - National Cancer Institute, CDC/NCCDPHP - National Center for Chronic Disease Prevention and Health Promotion

Family history of cancer contributes to individual cancer risk. Having just one relative diagnosed with cancer can lead to a two-fold increase in risk for cancer. Knowing the family history of cancer may also have implications for how individuals are screened for cancer and whether they are referred for genetic counseling and testing. And while filling out a family history of cancer form is routine in a clinical setting, a conversation with a provider about family history may ensure the most appropriate preventive care.

The items proposed for 2023 also include a series of items on family history of breast and ovarian cancer. These items, in conjunction with items on family history of ovarian cancer, can be used to determine the denominator for analyses on use of genetic counseling and testing for pathogenic mutations associated with Hereditary Breast and Ovarian Cancer Syndrome.

Concepts Measured

- Family member (first degree) ever had cancer (FHCANEV_A)
- Family member (first degree) ever had breast cancer (FHBCANEV_A)
- Number of family members who had breast cancer (FHBCANNUM_A)
- Family member (first degree) under 50 had breast cancer (FHBCAN50_A)
- Family member (first degree) ever had ovarian cancer (FHOVCANEV_A)
- Provider discussion of family risk of cancer (FHCANRISK_A)

Duplication and Previous NHIS

- First-degree (e.g., parents, siblings, children) family history of cancer has been fielded as part of the NHIS in the 2005 Cancer Control Module and was repeated in 2010 and 2015.
- While some of the previous administrations allowed for the full collection of cancer family history across multiple cancer types and all first-degree relatives, and for second-degree relatives, the items proposed for 2023 were developed to collect family history only for the most relevant cancer types (breast and ovarian cancer) to ease respondent burden and survey administration time.
- Items on having a discussion with a provider about family history of cancer have not previously been fielded on the NHIS but have been fielded on the Oregon and Michigan BRFSS modules.

Proposed Use of the Data

- The data on any family history of cancer (FHCANEV_A) and discussions with providers about family history (FHCANRISK_A) are intended to produce point estimates and subpopulation comparisons.
- Based on unweighted data from the 2015 NHIS, 35.6% of people have at least one first-degree relative that has been diagnosed with cancer (FHCANEV_A). Based on a sample size of N~27,000 adults, reliable estimates can be made for any subpopulation captured in the NHIS.
- There are no national estimates for provider discussions about family history of cancer with a medical provider, and the two state estimates vary depending on question wording. Based on findings from BRFSS questions added by the Michigan Department of Health and Human Services in 2020, 87.3% of Michigan adults reported being asked about their family history and 56.9% reported discussing their family history with a provider. The Oregon Health Authority also added questions to the BRFSS in 2020; and they found that only 15.3% of respondents recalled being asked about their family history of breast, ovarian and colorectal cancers, and 44.9% reported that they were not asked about their family history of any of these cancers. The NHIS questions are similar to the questions asked in the BRFSS in Michigan

- Based on a sample size of N~27,000 adults, with an estimate around 57%, reliable estimates can be made for provider discussion about family history of cancer for any subpopulation.
- In addition to producing point estimates and subpopulation comparisons, the data from the series of items on family members having breast or ovarian cancer (FHBCANEV_A, FHBCAN50_A, FHBCANNUM_A, FHOVCANEV_A), are intended
 - to develop a subpopulation of individuals who are at increased risk and meet referral criteria for genetic counseling and/or testing, an important component of measuring the Healthy People 2030 Developmental Goal on use of genetic counseling
 - to assess use of mammography screening services among those with a family history.
- Based on unweighted data from the 2015 NHIS, 8.5% of adults have at least one first-degree relative that has been diagnosed with breast cancer (FHBCANEV_A). Based on a sample size of N~27,000 adults, reliable estimates can be made for any subpopulation that is at least 2% of total population.
- Based on unweighted data from the 2015 NHIS, 1.8% of adults have at least one first-degree relative that has been diagnosed with ovarian cancer. Based on a sample size of N~27,000 adults, reliable estimates can be made for any subpopulation that is at least 6% of total population.
- In combination with other items on family history (e.g., FHBCAN50_A, FHBCANNUM_A), based on unweighted data from the 2015 NHIS, 5.5% of all adults have a family history associated with Hereditary Breast and Ovarian Cancer Syndrome. Based on a sample size of N~27,000 adults, reliable estimates can be made for any subpopulation that is at least 3% of total population.
- Any of these data may be used as a covariate in analyses on health care use for services like cancer screening (e.g., mammography, colorectal cancer screening, etc.) or for analyses on participation in health behaviors (e.g., physical activity, smoking, etc.)

References

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Genetic cancer screening – Sample Adult

Sponsor: NIH/NCI - National Cancer Institute, CDC/NCCDPHP - National Center for Chronic Disease Prevention and Health Promotion

Individuals with a family history of cancer may be carriers of pathogenic mutations that may significantly increase cancer risk. Individuals at increased risk for these mutations are generally referred to a genetic counselor for further risk assessment for genetic testing or can work with their medical provider to get genetic testing without taking to a genetic counselor. Previous data indicate that cancer genetic services are underutilized by high-risk individuals, though some research suggests the use of genetic counseling and testing services has increased over time. The items proposed for 2023 assess how many individuals had discussions with their medical providers about receiving genetic testing for determining the risk of developing cancer in the future, and how many have ever had a genetic test for this reason.

This item is also the basis of the Healthy People 2030 developmental objective on receipt of genetic counseling among high-risk women. This objective relies on survey items of family history of breast and ovarian cancer to determine the appropriate denominator.

Concepts Measured

- Ever discussed genetic cancer risk test with health professional (GTPOSS1_A)
- Ever had a genetic test (GTGRISK_A)

Duplication and Previous NHIS

- Both of these items were fielded on the 2010 and the 2015 NHIS.

Proposed Use of the Data

- Data from the item on ever having discussed genetic cancer risk test with health professional will be used to provide a point estimate of the proportion of high-risk individuals (as determined by items on family history of breast and ovarian cancer) who have had a conversation with medical providers about receiving genetic testing (a proxy for genetic counseling) (GTPOSS1_A).
- Results from Allen et al., using the 2015 NHIS data, indicate that 4.6% of women discussed genetic testing with their medical provider (2.5% of all adults). Based on a sample size of N~27,000 adults, reliable estimates can be made for any subpopulation that is at least 4% of total population. For example, reliable estimates can be made for the 5.5% of all adults who have a family history associated with Hereditary Breast and Ovarian Cancer Syndrome.
- Data from the item on ever having had genetic testing for determining the risk of developing cancer in the future will be used to provide a point estimate of the proportion of high-risk individuals (as determined by items on family history of breast and ovarian cancer) who have received genetic testing (GTGRISK_A).
- Results from Allen et al., using the 2015 NHIS data, indicate that, among women with the most high-risk family histories, approximately 7.9% reported receiving genetic testing

(1.7% of all women; 1% of all adults). Based on a sample size of N~27,000 adults, reliable estimates can be made for any subpopulation that is at least 11% of total population.

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Workplace Exposure to Ototoxic Substances – Sample Adult

Sponsor: CDC/NIOSH - National Institute for Occupational Safety and Health

Occupational hearing loss (OHL) is caused almost entirely by exposure to hazardous workplace noise and ototoxic chemicals. Ototoxic chemicals can cause OHL in the absence of noise, make the ear more susceptible to the damaging effects of noise, or both, with potential synergistic effects. Ototoxic chemical classes include solvents, heavy metals, nitriles, pharmaceuticals, and asphyxiants (e.g., second-hand tobacco smoke) [OSHA & NIOSH, 2018; Campo et al., 2013; Johnson & Morata, 2010]. These chemicals are found in common industrial products, such as cleaners, thinners, paints, lacquers, industrial glues, pesticides, antineoplastic drugs, lead, organic tin compounds, organic cyanides, tobacco smoke and engine exhaust, and are used in many industries, including manufacturing, mining, utilities, construction, and agriculture [OSHA & NIOSH, 2018].

The items proposed for 2023 are intended to allow analysts to provide point estimates of exposure to ototoxic solvents in the workplace by industry and occupation. This is similar to previous NHIS sponsored content, from which NIOSH has been able to generate representative U.S. worker estimates for self-reported hearing difficulty, occupational noise exposure, tinnitus, and other related outcomes/exposures by large industry and occupation categories and demographics.

The proposed ototoxicity items will be fielded along with a set of hearing items sponsored by NIH/NIDCD - National Institute on Deafness and Other Communication Disorders. Fielding this sponsored content together will allow exploration of associations between ototoxic chemical exposures, noise exposures, hearing loss and other factors by industry and occupation.

Concepts Measured

- Job exposure to solvents or materials (HRJBEXP12M_A)
- Job exposure to tobacco smoke (HRJBEXPTB_A)
- Job exposure to solvents or other substances for 4 or more hours (HRJEXP4HR_A)

Duplication, Previous NHIS, and Cognitive Testing

- The item on job exposure to ototoxic solvents or materials (HRJBEXP12M_A) is new and has not appeared in prior NHIS surveys. However, results from cognitive testing indicate that respondents understand and are able to answer the item in the ways intended by the developers.
- A similar item on exposure to tobacco smoke has appeared in prior NHIS surveys, including 2010 and 2015.
- The four hour threshold is new and is intended to measure typical exposure and filter out incidental exposure (HRJEXP4HR_A, HRJEXP4HR_A). Results from cognitive testing indicate these items work as intended.

Proposed Use of the Data

- Analyzing the data from these survey questions will allow
 - the production of the first set of nationally-representative U.S. worker prevalence estimates for ototoxic chemical exposure by large industry and occupation categories
 - the identification of high risk groups
 - the exploration of associations between ototoxic chemical exposures, noise exposures, hearing loss and other factors
- Approximately 58% of the NHIS sample adults are workers.
- Data from the item about job exposure to ototoxic solvents or materials are intended to provide point estimates by industry of workers exposed to ototoxic solvents in their workplace (HRJBEXP12M_A). Currently no such estimates exist, but 2020 data from the Bureau of Labor Statistics indicates that about 22.8 million workers (20.5% of all workers; 11.8% of all adults) are employed in industry sectors where ototoxic chemicals are likely to be heavily used - manufacturing (10.9% of workers; 6.3% of all adults), mining (0.5% of all workers; 0.29% of all adults), utilities (0.5% of all workers; 0.29% of all adults), construction (6.5% of all workers; 3.8% of all adults) and agriculture (2.0% of all workers; 1.2% of all adults). Data from the NHIS will provide more precision on the workers in these industries actually exposed to such chemicals.
- Based on a sample size of N~27,000 adults, for industries that are 0.5% of total population, an overall prevalence of about 21.5% (that which is indicated above) would have to be achieved. Since not every worker in those industries is likely to be exposed to ototoxic substances, the rate may be lower. Still, for a total adult population prevalence rate closer to 15%, for example, reliable industry estimates can be made for any industry that is at least 2% of the total adult population.

- Using the 2010 and 2015 NHIS data, Dai & Hao estimate that 10% of workers (5.8% of all adults) are exposed to secondhand smoke. Based on a sample size of N~27,000 adults, reliable estimates can be made for any industry that is at least 2% of total population.

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Vision Services – Sample Adult and Sample Children

Sponsor: NIH/NEI – National Eye Institute

A main purpose for gathering information on vision services with the 2023 NHIS is to collect interim data to track progress on the primary Healthy People 2030 Vision Objectives to increase the proportion of preschool children who get vision screening prior to starting school, and adults who have a comprehensive eye exam on a regular basis.

One new question proposed for the 2023 NHIS Vision question battery asks whether people with trouble seeing were advised that rehabilitation services and assistive devices exist and are available to support their accessibility and inclusion. The collection of these data is consistent with the American Disabilities Act and Executive Order 14035: Diversity, Equity, Inclusion and Accessibility in the Federal Workforce.

Concepts Measured

Sample Adults:

- Last time had an eye exam in which the pupils were dilated using eye drops (AVISEXAM_A)
- Use any vision rehabilitation services, such as job training, counseling, or training in daily living skills and mobility (AVISREH_A)
- Use any assistance or adaptive devices, such as telescopic or other prescriptive lenses, magnifiers, large print or talking materials, CCTV, white cane, or guide dog (AVISDEV_A)
- Health professional ever advised you that rehabilitation services and assistive, adaptive, or accessibility devices are available to help with your vision difficulties (AVISSADV_A)
- Read books or newspapers, write, or do other things that require seeing up close, such as cooking, sewing or fixing things (VIMREAD_A)
- Wear eyeglasses or contact lenses to drive, read road and street signs, watch TV, or see things in the distance (VIMDRIVE_A)

Sample Children

- Wear eyeglasses or contact lenses to read books, write, use smartphones, iPads or other electronic devices, or do other things that require seeing well up close (CVISREAD_C)
- Wear eyeglasses or contact lenses to read road and street signs, watch TV, see board in school (children only) or see things in the distance (CVISDIST_C)
- Ever had vision tested by a doctor or other health professional (CVISTST_C)
- When was vision last tested (CVISLT_C)

Duplication and Previous NHIS

- All of the items proposed for both children and adults proposed for 2023 were included on the 2017 NHIS (except AVISSADV)
- The proposed new item AVISSADV (has a healthcare provider ever advised you about the availability of assistive devices or services) is consistent with other “content of care” items fielded on the NHIS, e.g., has a doctor or health professional advised you to increase the amount of physical activity you get, or to participate in a weight loss program.

Proposed Use of the Data (including reliability checks)

- Based on unweighted 2017 NHIS data, 48.5% of children have ever had their vision tested by a doctor or other health professional. Based on a sample of N~9000 children, reliable estimates can be produced for most any subpopulation the NHIS captures.

- Based on unweighted 2017 NHIS data, 17% of children who have ever had their vision tested had it tested a year ago or longer. Based on a sample of N~9000 children, reliable estimates can be produced for any subpopulation that is at least 2% of the total child population.
- Based on unweighted 2017 NHIS data, 33.9% of children 6-17 years of age wear glasses or contact lenses (25% of all children). Of the children who wear glasses or contact lenses, 80.2% wear them to read road and street signs, see the board in school, watch TV, or see things in the distance (20% of all children), and 62.8% wear them to read books, write, use smartphones, iPads, or other electronic devices, or do other things that require the child to see well up close (15.5% of all children). Based on a sample of N~9000 children, reliable estimates can be made for most all subpopulations captured in the NHIS.
- Based on unweighted 2017 NHIS data, 11.75% of adults had never had an eye exam. Based on a sample of N~27,000, reliable estimates can be made for any subpopulation that is at least 2% of the total adult population.
- Based on unweighted 2021 NHIS data, 66.6% of adults wear eyeglasses or contacts. Based on unweighted 2017 NHIS data, of those who wear eyeglasses or contacts, 77.3% do so to do things that require seeing well up close (50.1% of all adults) (VIMREAD), and 72.1% wear classes that require one to see well in the distance (47.5% of all adults) (VIMDRIVE). Based on a sample of N~27,000, there is sufficient sample for reliable estimates for most all subpopulations the NHIS captures.
- Based on unweighted 2021 NHIS data, nearly 20% of adults report having some difficulty seeing even when wearing glasses or contact lenses. Based on 2017 unweighted NHIS data, 3.8% of adults who have trouble seeing use vision rehabilitation services, such as job training, counseling, or training in daily living skills and mobility (0.8% of all adults) (AVISREH); and 18% use assistive or adaptive devices such as telescopic or other prescriptive lenses, magnifiers, large print or talking materials, CCTV, white cane, or guide dog (3.6% of all adults) (AVISDEV) .
- Based on a sample of N~27,000, a reliable estimate can be made for use of rehabilitation services, but there is not sufficient sample for subpopulation estimates. For the use of adaptive devices, reliable subpopulation estimates can be made for any subpopulation that is at least 4% of the total population.
- Only 3.8% of the 20% of adults who report having some difficulty seeing even when wearing glasses or contact lenses receive rehabilitation services and just 18% use assistive or adaptive devices. The purpose of the AVISSADV (a doctor or other health professional communicated the availability of rehabilitation services and assistive, adaptive, or accessibility devices) item is to determine the extent the health care community is effectively communicating the availability of such services. Based on a sample size of N~27,000 adults, the calculation of reliable subpopulation estimates depends on the distribution of responses. Because the percentage of persons who have difficulty is 20%, it is likely that reliable estimates can be made for many subpopulations.

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Balance and Hearing – Sample Adult and Sample Children

Sponsor: NIH/NIDCD - National Institute on Deafness and Other Communication Disorders

Sponsor – noise exposure at work: CDC/NIOSH - National Institute for Occupational Safety and Health

Hearing loss and balance impairment, including inner ear vestibular disorders (vertigo, other dizziness problems) can profoundly affect a person's life and health; impacting the ability to work, interact socially and engage during health care encounters. Adults with hearing and balance disabilities are at risk for decreased quality of life, poorer health status, and diminished health care services received. Targeted interventions delivered in a community or medical setting, provided by audiologists, Ear, Nose, and Throat (ENT) doctors [aka, otolaryngologists-head and neck surgeons], neuro-otologists, occupational and physical therapists, pediatricians,

gerontologists and other trained health care workers can potentially mitigate risks for long-term disability.

Healthy People 2030 Focus

Hearing and balance impairment have received national attention through the formulation of objectives to improve outcomes as stated in Healthy People 2010, 2020, and 2030. To implement monitoring and tracking of Healthy People goals in this focus area, a Workgroup for Hearing and Other Sensory or Communications Disorders (HOSCD) has been established, which is made up of professionals from the National Institute on Deafness and Other Communication Disorders (NIDCD), National Institutes of Health (NIH); the National Center on Birth Defects and Developmental Disabilities (NCBDDD), the National Center for Health Statistics (NCHS), and the National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC); and the Office of Disease Prevention and Health Promotion, Department of Health and Human Services (DHHS). The Workgroup members have expertise in such areas as newborn hearing screening, childhood and adult impairments of hearing and balance, and occupational and other environmental or genetic causes of hearing and balance problems. The information obtained from the 2023 NHIS Hearing and Balance questions will provide essential tracking information to monitor progress towards achieving hearing and balance health care objectives for Healthy People 2030.

The Healthy People 2030 objectives for hearing and balance are aligned with several federal strategies and priorities, including those of “It’s a Noisy Planet – Protect Their Hearing”, National Occupational Research Agenda (NORA), the American Academy of Pediatrics (AAP) Early Hearing Detection and Intervention Guidelines, and the National Academy of Sciences Report on “Hearing Health Care for Adults: Priorities for Improving Access and Affordability”. All Health People 2030 core objectives – includes the hearing and balance objectives -- meet several criteria; for example, they have baseline data, a direct impact on health, and an evidence base. They address health disparities including those associated with race/ethnicity, gender, education, income, and other limitations or disabilities. In developing the hearing and balance objectives, the HOSCD Workgroup considered a broad range of potential objectives based on those included in Healthy People 2010 and 2020, availability based on changes in national data collection activities, and a review of the current evidence base including advice from informed professionals in the field.

Concepts Measured

- Ability to hear (AHEARST1_A, _C)
- Hear whispers (HRWHISP_A, _C)
- Past 12 months ear infection (EARINFECT_A, _C)
- Past 12 month 3 or more ear infections (EARINFECT3_A, _C)
- In lifetime had a significant head injury (CBALHDINJ_A, _C)
- Number of lifetime head injuries (CBALHDNO_A, _C)
- Ever had hearing test (HRTEST_A, _C)
- How long since hearing test (HRTESTLAST_A, _C)
- Hearing aid fit or purchases (HRAIDAQR_A, _C)
- Past 12 month balance or dizziness problem (BALDIZZ_A, _C)

- Past 12 months, how big of a balance or dizziness problem (BALDPROB_A, _C)
- Ever seen a health provider for balance or dizziness problem (BALDHP_A, _C)
- Past 12 months fallen (BFALL12M_A, _C)
- Number of falls (BFALLTIMES A, _C)
- Past 12 months ringing, roaring or buzzing in ears (HRTINNITUS A, _C)
- How long bothered by ringing, roaring, or buzzing (HRTINLNG_A, _C)
- Past 12 months how much of a problem is ringing, roaring, or buzzing (HRTINPROB A, _C)
- Past 5 years evaluated by medical specialist for ringing, roaring or buzzing (HRTMEDSP_A, _C)
- Ever exposed to loud noise at job (HRLOUDJOB_A)
- Years exposed to loud sounds at job (HRLOUDJOBYR_A)
- Past 12 month exposed to loud sounds at job (HRLOUDJB12M__ A, _C)
- Past 12 months, how often wear hearing protection when exposed to loud sounds at work (HRJOBPROT_A, _C)
- Ever used a firearm (HRFIREEV__ A, _C)
- Total firearm rounds fired (HRFIRETOTR_A, _C)
- Past 12 months, firearm rounds fired (HRFIRE12M_A, _C)
- Wear hearing protection when shooting firearms (HRFIREPROT_A, _C)

Duplication and Previous NHIS

- The proposed questions on hearing and balance disorders were asked about children and adults (with some minor changes) in the 2014 National Health Interview Survey (NHIS) Hearing Supplement and the 2016 NHIS Balance and Dizziness Supplement. The number of items previously fielded in those two supplements (~70 items in the 2014 hearing supplement and ~135 in the 2016 balance supplement), has been reduced to an essential 25 items for both topics, significantly reducing the burden on survey respondents.
- To maintain validity for cross-survey comparisons, the wording for the NHIS interviews has been harmonized with the hearing and balance questions asked during home interviews, prior to physical exams in mobile exam centers, in NHANES 2015-16, 2017-18, and 2019-23.

Proposed Use of the Data

- Each of the items is being asked of both adults and children (for appropriate age groups, e.g., 3-17 years, 6-17 years). While estimates can sometimes be made separately for children as well as for adults, the data will also be used to provide national total population (child and adult) estimates and subpopulation estimates where sample size is sufficient.
- One main purpose is to monitor the objectives established in Healthy People 2030 and for assessing the burden of disease associated with impairment and disabilities resulting from hearing loss, bothersome tinnitus, and balance/vestibular disorders.

Hearing ability, testing, hearing aids

- Based on unweighted 2014 NHIS data, 6% of adults report having serious difficulty hearing or are deaf and about 12.7% of the population aged 12 year or older have bilateral hearing loss significant enough to interfere with understanding speech (AHEARST1).
- Based on a sample size of N~27,000 reliable estimates can be made for having serious difficulty hearing for any subpopulation that is at least 5% of total population. Based on a sample size of N~31,000 (combined adults and sample children 12-17 years of age), reliable total population estimates can be made for any subpopulation found in the NHIS.
- Based on unweighted 2014 NHIS data, 18.6% of adults and 4.0% of children aged 3-17 cannot (3.4% of all children) usually hear and understand what a person says without seeing his or her face if a person whispers from across the room (HRWHISP).
- Based on a sample size of N~27,000 reliable estimates can be made for being unable to hear whispers across the room for any subpopulation that is at least 1% of total population. Based on a sample size of N~35,000 (combined adults and sample children 3-17 years of age), reliable total population estimates can be made for any subpopulation found in the NHIS.
- Based on unweighted 2014 NHIS data, 49.3% of adults and 66.1% of children aged 1-17 years of age (62.7% of all children) have never had a hearing test (HRTEST). Based on a sample size of N~27,000 adults and N~9000 for children, reliable estimates can be made for never having a hearing test for any subpopulation found in the NHIS.
- Based on unweighted 2014 NHIS data, 18.7% of all adults have had a hearing test in the past 4 years, 13.5% have had a test 5-14 years ago, and 17.3% have had a test 15 or more years ago (HRTESTLAST). Based on a sample size of N~27,000 adults, reliable estimates can be made for length of time since last hearing test for any subpopulation that is at least 1% of total population.
- Based on unweighted 2021 NHIS data, 5.5% of adults wear hearing aids. For the item HRAIDAQR (hearing aid purchased with or without assistance from a healthcare professional), based on a sample size of N~27,000 adults, reliable point estimates can be calculated for either option with a rate of at least 10% (0.5% of all adults).

Ear infections

- Based on unweighted 2015-2016 NHANES data, 20% of adults and 11.8% of children have had an ear infection in the past 12 months (EARINFECT); based on unweighted 2014 NHIS data, 9% of all children have had 3 or more ear infections in the past 12 months (EARINFECT3).

- Based on a sample size of N~27,000 adults, reliable estimates can be made for having had an ear infection in the past 12 months for any subpopulation that is at least 2% of total population. Based on a sample size of N~9,000 children, reliable estimates can be made for having had an ear infection in the past 12 months for any subpopulation that is at least 5% of total child population; similarly, for having had 3 or more ear infections in the last three months, reliable estimates can be made for any subpopulation that is at least 5% of the total child population.
- Based on unweighted 2014 NHIS data, 12.3% of adults report having been bothered by tinnitus in the past 12 months. Coehlo 2011, and Rosing et al. 2016 report the rate for children 6-17 years of age is 7.5% (HRTINNITUS). Of those experiencing tinnitus, 41.5% of adults (5% of all adults) have experienced it for 10 years or more (HRTINLNG), and over 30% (3.7% of all adults) report it being a moderate to big problem (HRTINPROB). According to 2014 unweighted NHIS data, 41.7% of adults who report tinnitus (5.1% of all adults) have been evaluated for it (HRTMEDSP).
- Based on a sample size of N~27,000 adults, reliable estimates can be made for having been bothered by tinnitus in the past 12 months for any subpopulation that is at least 2% of total population. For experiencing tinnitus for 10 years or more, for reporting a moderate to big problem and for reporting it to a health care provider, reliable estimates can be made for any subpopulation that is at least 3-4% of the total adult population.

Noise exposure outside of work

- According to unweighted 2014 NHIS data, 20.4% of adults and 8.4% of children have been exposed to very loud sounds outside of work more than 10 times (HRVLOUD12M0). Based on a sample size of N~27,000 adults, reliable estimates can be made for having been exposed to very loud sounds outside of work more than 10 times for any subpopulation that is at least 2% of total population; based on a sample size of N~9,000 children, reliable estimates can be made for any subpopulation that is at least 5% of the total child population.

Noise exposure at work

- In the U.S., 25% of workers have a history of occupational noise exposure (14.5% of all adults) (HRLLOUDJOB_A), with 14% exposed in the prior year (8.1% of all adults) (HRLLOUDJOB12M_A) (Kerns et al., 2018).
- Based on a sample size of N~27,000 adults, reliable estimates can be made for having a history of occupational noise exposure for any subpopulation that is at least 2% of total population; similarly, for those exposed in past year, reliable estimates can be made for any subpopulation that is at least 2% of the total adult population.
- The prevalence of noise-exposed workers who report not wearing hearing protection in the past 12 months is 53% (HRJOBPROT_A) (Green et al., 2021) (4.2% of all adults). Based on a sample size of N~27,000 adults, reliable estimates can be made for report not

wearing hearing protection in the past 12 months for any subpopulation that is at least 4% of total population.

Noise exposure to firearms

- Based on unweighted NHIS data, 36.6% of adults and 19.2% of children 6-17 have ever used a firearm (14.2% of all children) (HRFIREEV). Over their lifetime, 62% of adults who have ever used a firearm fired 100 rounds or more (22.6% of all adults) (HRFIRETOTR); in the past 12 months 39.5% of adults who have ever used a firearm have fired 100 or more rounds (14.5% of all adults) (HRFIRE12M). Of those who have ever used a firearm, 26.8% of adults (9.8% of all adults) and 68.8% of children 6-17 years of age have seldom or never used hearing protection (HRFIREPROT) (9.8% of all children).
- Based on a sample size of N~27,000 adults, reliable estimates can be made for those having used a firearm but having seldom or never used hearing protection for any subpopulation that is at least 2% of total population; based on a sample size of N~9,000 children, reliable estimates can be made for any subpopulation that is at least 5% of the total child population.

Balance – concussion, dizziness, falls

- Daugherty et al. 2020 report that 28.9% of adults and unweighted data from 2015-2016 NHANES indicates 7.5% of children have ever had a concussion (CBALHDINJ_A). Based on a sample size of N~27,000 adults, reliable estimates can be made for having had a concussion for any subpopulation found in the NHIS; based on a sample size of N~9,000 children, reliable estimates can be made for any subpopulation that is at least 5% of the total child population.
- Li et al. (2016) report that 14.8% of adults and Kerber et al. (2017) report that 5.3% of children 3-17 years of age (4.5% of all children) have had a problem with dizziness in the past 12 months (BALDIZZ). Based on unweighted 2016 NHIS data, of those experiencing dizziness 41.3% reported a small problem with balance (6.1% of all adults), and 25.1% reported a moderate to very large problem (3.7%) (BALDPROB); and 40.4% of adults with balance problems saw healthcare provider for their balance problems (6.0% of all adults) (BALDHP).
- Based on a sample size of N~27,000 adults, reliable estimates can be made for having had a problem with dizziness in the past 12 months for any subpopulation that is at least 2% of the total adult population; based on a sample size of N~9,000 children, reliable estimates can be made for any subpopulation that is at least 10% of the total child population.
- For those adults experiencing a small problem with balance who have seen a health care provider for their balance problems, based on a sample size of N~27,000 adults, reliable estimates can be made for any subpopulation that is at least 3% of the total adult

population. For adults experience a moderate to very large problems, reliable estimates can be made for any subpopulation that is at least 4% of the total adult population.

- According to unweighted 2016 NHIS data, 8.6% of all adults have fallen at least one time in the past 12 months (BFALL12M). Based on a sample size of N~27,000 adults, reliable estimates can be made for having fallen at least one time in the past 12 months for any subpopulation that is at least 2% of the total adult population.

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Traumatic Brain Injuries – Sample Adult and Sample Child

Sponsor: CDC/NCIPC - National Center for Injury Prevention and Control

Traumatic Brain Injuries (TBIs) are a significant public health concern in the United States. Millions of Americans sustain a TBI (including concussions) annually and hundreds of thousands are hospitalized or die from these injuries. Existing national estimates of TBI are likely an underestimate of its burden. These estimates are based on healthcare administrative and vital statistics data that only capture information on the number of emergency department (EDs) visits, hospitalizations, and deaths identified as TBI-related. Current estimates do not account for: TBIs treated by physicians during office visits or other outpatient settings; TBIs that are identified by athletic trainers; or untreated and undiagnosed TBIs.

A 2016 study in a pediatric healthcare system found that nearly 80% of treated concussions, often referred to as mild TBIs, were treated outside of the emergency department (ED), suggesting that hospital-based surveillance systems capture less than 20% of all pediatric concussions. Plus, the majority of TBIs are mild and may not involve seeking care from a healthcare provider, making an accurate estimate of TBIs challenging. A 2014 Institute of Medicine (IOM) report, "Sports-Related Concussions in Youth: Improving the Science, Changing the Culture," recommended that CDC "should establish and oversee a national surveillance system to accurately determine the incidence of sports-related concussions, including those in youth ages 5 to 21." Existing sports concussion surveillance systems, including the National Collegiate Athletic Association Injury Surveillance System, the High School Reporting Information Online (HS-RIO) system, and the Youth Risk Behavior Survey (YRBS), provide data for collegiate and high school-level athletes in school-based sports leagues. However, minimal data are collected on the incidence of sports-related concussions among athletes younger than high school age and among persons playing in recreational leagues and informal sports- and recreation-related activities (e.g., "pick-up games," bicycling, playground injuries).

A recent self-report survey found that about half of adults who self-reported a lifetime TBI sought evaluation or care for their most recent injury. However, because this survey was about lifetime TBI, it is not known if evaluation patterns for adults have changed in recent years. Less

is known about the prevalence of medical evaluation for children after a TBI. One of CDC's main messages about TBI for all persons is that it is important to seek medical evaluation after a TBI.

Currently, there are not any national surveys that collect self-reported TBI prevalence data on a regular basis.

Concepts Measured

- Past 12 months, lost consciousness, dazed or confused, or gap in memory as a result of a blow or jolt to the head (TBILCDCMG_A, _C)
- Past 12 months, as a result of a blow or jolt to the head had headaches, sensitivity to light or noise, balance problems, or changes in mood or behavior (TBIHLSBMC_A_C)
- Experience blow or jolt to the head while playing a sport, or while engaged in physical fitness or a recreational activity for fun or competition (TBISPORT_A_C)
- Experience blow or jolt to the head while playing an organized sport (TBILEAGUE_A_C)
- Past 12 months, evaluated for concussion or brain injury (TBIEVAL_A_C)

Duplication and Previous NHIS

- In 2018-2019 CDC's National Center for Injury Prevention and Control (NCIPC) cognitively tested then fielded a pilot National Concussion Surveillance System (NCSS) which included these items. Funding constraints prevent ongoing surveillance using this pilot methodology.
- The item on losing consciousness was previously fielded on the 2021 Sample Child NHIS, for 2023, it will be collapsed into one item. Similar items on a blow or jolt to head resulting in headaches, and on having been checked for a concussion were also fielded on the 2021 Sample Child NHIS.

Proposed Use of the Data

- Based on the data from the pilot NCSS the National Center for Injury Prevention and Control estimates that 6-12% adults and 5.1%-10.3% children will have sustained a self-reported TBI in the past 12 months (TBILCDCMG, TBIHLSBMC). Based on a sample size of N~27,000 adults, reliable estimates can be made for a 6% prevalence rate for any subpopulation that is at least 3% of the total adult population; for a prevalence rate closer to 12%, reliable estimates can be made for subpopulations that are at least 2% of the population. Based on a sample size of N~9000 children, reliable estimates can be made for a 5% prevalence rate for any subpopulation that is at least 10% of the child population; for a prevalence rate closer to 10%, reliable estimates can be made for subpopulations that are at least 5% of the child population.
- Preliminary analysis of NCSS pilot data found that about 67% of all TBIs in children were caused by sports (3.4-6.9% of all children). While very little is known about the prevalence of sports- and recreation-related TBI among adults, NCSS pilot data suggest

that approximately 20% of adult TBIs are sports- or recreation-related (4-8% of all adults) (TBISPORTS, TBILEAGUE).

- Based on a sample size of N~9000 children, and depending on the prevalence estimate for TBIs, reliable estimates can be made for any subpopulation that is at least 5-10% of the child population; based on a sample size of N~27,000 adults, reliable estimates for any subpopulation that is at least 1.2 -2.4% of the adult population.
- A recent self-report survey (Womack et al., 2022) found that about half of adults who self-reported a lifetime TBI sought evaluation or care for their most recent injury (3-6% of all adults). Based on 2021 NHIS data, 10.6 percent of children were ever checked for a concussion or brain by a health professional (0.5-1.0% of all children). (TBIEVAL)
- Based on a sample size of N~27,000 adults, reliable estimates for adults who self-reported a lifetime TBI sought evaluation or care for their most recent injury can be made for any subpopulation that is at least 2-4% of the adult population. Based on a sample size of N~9000 children, reliable estimates for subpopulations strongly depend on the prevalence rate for TBIs. If the rate is the NCSS midpoint [7.5%] reliable subpopulation estimates can be made for any subpopulation that is at least 5% of the population.
- For each of these variables, sample adult and child data can be combined to produce reliable national estimates and for most subpopulations captured in the NHIS.

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Impact of Long COVID – Sample Adult and Sample Child

Sponsor: National Center for Immunization and Respiratory Diseases

According to a recent Household Pulse Survey (June 1- June 13), long-COVID may affect as much as 14.5% of the adult population. A Minneapolis Federal Reserve study found that 25.9% of people with long-COVID had had their work impacted (either out of work or working reduced hours), and a study published by the Lancet found that 22% of people with long COVID were unable to work due to ill health, according to a recent Brookings Institution report. Using data from the Minneapolis Fed Study, the Lancet study, and a study from the United Kingdom, the Brookings Institute estimates that the percentage of workers out of the United States Civilian labor force may be 1.8%.

Aside from the ability to work, long COVID may impact other activities of daily living such as going for a walk, washing the dishes, or attending virtual meetings.

The NHIS has been collecting data on long COVID since 2021. For 2023, an item capturing the impact of long COVID on daily living is proposed.

Concepts Measured

- Long-term COVID symptoms reduce ability to carry out day to day activities (LCVDACT_A, _C)

Duplication and Previous NHIS

- The item has not been previously fielded on the NHIS. However, the NHIS does field items that assess the impact of a condition on activities of daily living, e.g., how bothered by pain, headaches or migraines, trouble with seeing or hearing, walking, etc.
- It is currently being proposed for the Household Pulse Survey, phase 3.6.
- It is also being proposed for the 2023 BRFSS.

Proposed Use of the Data

- According to a recent Household Pulse Survey, Long COVID may affect as much as 15% of the adult population. Based on a sample size of N~27,000 and depending on the percentage who responded to any of the three response options – a lot, a little, or not at all – reliable subpopulation estimates can probably be made for many of the subpopulations captured by the NHIS.

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NEW EMERGING CONTENT

Everyday Discrimination and Heightened Vigilance Scales – Sample Adult

Items from two scales are being proposed for 2023: the Everyday Discrimination Scale (EDS) and the short version of the Heightened Vigilance Scale (HVS). Both scales were designed to capture the experience of discrimination and actions people may take to protect themselves from it.

Race-related everyday discrimination and hypervigilance have been found to be related to a variety of health outcomes. For example, researchers have found everyday discrimination to be related to cardiovascular disease (Thomas et al., 1997), mental health status (Gee et al., 2006), obesity (Hunte, 2011), and alcohol use (Les Whitbeck, et al., 2004). Racism-related hypervigilance has been found to be related to sleep disturbance (Hicken, et al., 2013).

Both the EDS and HVS were recommended by the NCHS Board of Scientific Counselors as measures of discrimination for NCHS surveys. The Collaborating Center for Question Design and Evaluation Research (CCQDER) at NCHS is currently conducting cognitive testing on both

scales to understand how respondents answer the questions. The EDS questions have been previously tested using both qualitative and quantitative evaluation methods (Reeve et al., 2011; Shariff-Marco et al., 2011).

Everyday Discrimination

Broadly defined, perceived discrimination is the belief that one has experienced unfair treatment by individuals and social institutions, and that this treatment was based on personal characteristics such as race, gender, or weight. According to its developer, David Williams, the Everyday Discrimination Scale is designed to “capture microaggressions, the little indignities of everyday life.” Perceived discrimination has been found to be associated with cardiovascular disease, unhealthy behaviors such as smoking, obesity, and psychological disorders.

Heightened Vigilance

The second scale, also developed by David Williams, is designed to “capture the extent to which people are engaging in a range of activities to protect themselves, reflecting the extent to which the *potential* reality of discrimination makes you unable to relax.”

Heightened vigilance has been shown to be correlated with multiple physical and mental health measures including depressive symptoms, self-rated health, and chronic conditions among individuals identifying as African American or Black.

Concepts Measured

Items from the Everyday Discrimination Scale

In your day-to-day life, how often

- Treated with less courtesy or respect than other people. (DISCRIM1)
- Receive poorer service than other people at restaurants or stores. (DISCRIM2)
- People act as if they think you are not smart. (DISCRIM3)
- People act as if they are afraid of you. (DISCRIM4)
- Threatened or harassed. (DISCRIM5)

Items from the Heightened Vigilance Scale

In your day-to day life, how often

- Try to prepare for possible insults from other people before leaving home? (VIGIL1)
- Feel that you always have to be very careful about your appearance to get good service or avoid being harassed? (VIGIL2)
- Carefully watch what you say and how you say it? (VIGIL3)
- Try to avoid certain social situations and places? (VIGIL4)

Duplication and Previous NHIS

- Neither scale has been previously fielded on the NHIS, although three of the discrimination items (DISCRIM1/DISCRIM2/DISCRIM3) are currently being fielded in the NHIS Adolescent Follow-back Survey.
- The shortened version of the Everyday Discrimination Scale (EDS) was first developed in 1997 for use in the Chicago Community Adult Health Survey, has been validated for multiple minority groups, and has been used widely throughout the world as a measure of daily subjective experiences of discrimination.
- The Heightened Vigilance Scale (EVS) was also developed by David Williams for use in the Chicago Community Adult Health Survey.

Proposed Use of the Data

- The purpose of including the two sets of questions is to create two scales that produce reliable national prevalence estimates of discrimination and hypervigilance in the US adult population to help NCHS provide better data to address “Executive Order 13985 on Advancing Racial Equity and Support for Underserved Communities Through the Federal Government.”
- A 2019 Pew Research Center study found 43.5% of adults experiencing discrimination from time to time or regularly; and results from the MacArthur Foundation Midlife Development in the United States (MIDUS) showed that 60.9% of all respondents experienced some form (rarely, sometimes, often) of at least one of the nine “Everyday Discrimination Scale” (EDS) items. Based on a sample size of N~27,000 adults, reliable estimates can be made for virtually all subpopulations captured in the NHIS.
- National level prevalence measures are not available for hypervigilance, however, recent research using the Chicago Community Adult Health study found an overall mean score of 2.7 for racism-related vigilance in their sample. Racism-related vigilance was highest among Blacks (mean = 3.8; SE = 0.1), followed by Hispanics (mean = 2.5; SE = 0.1), and Whites (mean = 1.8; SE = 0.1). These results indicate that with a sample adult size of 27,000, meaningful differences can be detected between subpopulations.
- The EDS and HVS may also be used to understand associations between discrimination and vigilance and outcomes on the NHIS such as health care access, health conditions, and health behaviors.

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Housing Insecurity – Sample Adult

Social determinants of health (SDOH) are conditions in the places where people live, learn, work, and play that affect a wide range of health and quality-of life-risks and outcomes.

Healthy People 2030 highlights the importance of addressing SDOH by including “social and physical environments that promote good health for all” as one of the four overarching goals for the decade. Healthy People 2030 uses a place-based framework that outlines five key areas of social determinants of health and their relationship to health outcomes:

- health care access and quality (access to health care, access to primary care, health insurance coverage, and health literacy),
- education access and quality (graduating from high school, enrollment in higher education, educational attainment in general, language and literacy, and early childhood education and development),
- social and community context (characteristics of the contexts in which people live, learn, work and play, and their health and well-being – cohesion with community, civic participation, discrimination, conditions in the workplace, and incarceration),
- economic stability (the financial resources a person has – poverty, employment, food security and housing stability), and
- neighborhood and built environment (the connection between where a person lives – housing, neighborhood, and environment - access to transportation, availability of healthy foods, air and water quality and neighborhood crime and violence).

Besides providing national data on health care access and quality, the NHIS continues to be a key source of data for many of the other variables (e.g., educational attainment, civic engagement, poverty, employment, food security, and access to transportation)

In addition to two other topics from this framework proposed for 2023 already discussed (workplace exposure to ototoxic chemicals, and discrimination), the NHIS proposes the addition of an item on housing insecurity as part of an effort to improve measurement on the social determinants of health.

Concepts Measured

- Past 12 months not able to pay your mortgage, rent or utility bills (HOUSESECUR_A)

Duplication and Previous NHIS

- This item has not been previously fielded on the NHIS but was fielded as part of the 2017 BRFSS optional social determinants of health module and a similar item is fielded on the US Census Bureau Household Pulse Survey.

Proposed Use of the Data

- Data from the 2017 BRFSS indicate that 9.3% of adults were not able to pay their rent or mortgage in the past 12 months, and the rate was higher for vulnerable populations, like cancer survivors (16.6%). According to results from the US Census Bureau Household Pulse Survey in April 27-May 9, 2022 5.8% of adults were unable to (or had low confidence they would be able) to pay their rent or mortgage.
- Based on a sample size of N~27,000 adults, for a prevalence estimate of 9.3% reliable estimates can be made for housing security for any subpopulation that is at least 2% of the total population. For a prevalence estimate of 6%, reliable estimates can be made for any subpopulation that is at least 3% of the total population.

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