

**HOST:** On this edition of Statcast, we continue with the second part of the NHANES webinar, which focuses on the plans for the prepandemic and partial year 2020 data, with an overview of a published [report](#) from 2021 on health estimates from this data set, from Dr. Bryan Stierman

**STIERMAN:** The health outcomes selected for estimates include for children, obesity and dental caries; for adults, hypertension, obesity, severe obesity, and diabetes; and for older adults, complete tooth loss. These health outcomes were selected for estimates because they were able to be calculated from the files currently released publicly available on the NHANES website.

Today we present estimates by several covariates including sex, age groups, race and Hispanic origin, and family income. Other covariates and stratification by sex are included in the accompanying National Health Statistics Report publication.

As is usual with NHANES analyses, to calculate these estimates we accounted for the complex, multistage probability design of NHANES, including the unequal probability of selection. Provided sample weights were used for calculations. For estimates for diabetes, fasting sample weights were used. For all other estimates, examination simple weights for used. Standard errors were estimated using Taylor series linearization. And adult estimates were directly age-adjusted to the 2000 projected U.S. census population.

As would be expected, the overall estimates for each health outcome calculated for 2017 through March 2020 are similar to those from 2017 through 2018 alone. This reflects both the methodological adjustments, as well as the patterns in the prevalence estimates, which typically are not expected to vary by large amounts from when one year to the next in NHANES due to the relatively small sample size and a one-year data collection.

The data from 2017 through March 2020 provide an increase in sample size, generally about 1.5 to 2 times the sample size of that from 2017 through 2018 alone. As expected, this increase in sample size generally leads to smaller standard errors, as can be seen with all health outcomes here except for complete tooth loss. However, for some estimates in some demographic subgroups, increased variation in the sampling weights, increased variation in the true underlying population values of the health outcomes from the data added from 2019 through March 2020, or both may result in equivalent or increased variance of estimates, as seen here with complete tooth loss, which has equivalent standard errors from both time periods.

We found that 19.7% of children aged 2 through 19 years had obesity, defined as a body mass index greater than or equal to the 95th percentile for age and sex. There was no difference in obesity by sex. Obesity increased with increasing age groups. The highest prevalence of obesity was among non-Hispanic Black and Hispanic children. While non-Hispanic Asian children had a lower prevalence of obesity than other race and Hispanic origin groups, obesity decreased with increasing family income.

Dental caries in childhood was defined here as untreated or restored dental caries in one or more primary or permanent teeth. 46% of children aged 2 through 19 had dental caries. There is no difference in dental caries by sex. Dental caries increased with increasing age groups. Hispanic children had the highest prevalence of dental caries among children. And dental caries decreased

with increasing family income. For hypertension, the estimates are based on a different methodology than those previously published for NHANES. Prior NHANES hypertension estimates have used an auscultatory protocol for blood-pressure measurements. During 2017 through 2018, both an auscultatory protocol, which utilizes a manually obtained blood pressure with a mercury sphygmomanometer, and an oscillometric protocol, which utilizes an automated machine to obtain blood pressure, were used. However, during 2019 through March 2020, only an oscillometric protocol was used. Therefore, blood-pressure measurements and hypertension estimates for the combined 2017-through-March 2020 pre-pandemic data required the use of the oscillometric protocol. The differences in these protocols and a comparison of the blood-pressure values from each protocol are available in a separate Series 2 report from NCHS.

We define hypertension here as meeting any of the following three conditions: a mean systolic blood pressure of greater than or equal to 130 millimeters of mercury, a mean diastolic blood pressure of greater than or equal to 80 millimeters of mercury, or taking a medication to lower blood pressure. Again, the blood pressure measurements were taken using an oscillometric protocol. During 2017 through March 2020, 45.1% of adults had hypertension. More men had hypertension than woman. Hypertension increased with increasing age. And Non-Hispanic Black adults had a higher prevalence of hypertension than other race and Hispanic origin groups.

We found that 41.9% of adults had obesity, defined as a body mass index greater than or equal to 30 kilograms per meter squared. There was no difference in obesity by sex or by age. Non-Hispanic Black adults had the highest prevalence of obesity. Non-Hispanic Asian adults had a lower prevalence of obesity than other race and Hispanic origin groups.

Severe obesity was defined here as a body mass index of greater than or equal to 40 kilograms per meter squared. During 2017-from-March 20, 9.2% of adults had severe obesity. More women had severe obesity than men. Severe obesity was less common in those aged 60 and above, compared to those aged 20 to 39, and those aged 40 through 59. The prevalence of severe obesity was highest among non-Hispanic Black adults, and the least among non-Hispanic Asian adults. Severe obesity was lowest among those with a family income of greater than 350% of the federal poverty level.

Diabetes was defined here as having previously been given a diagnosis of diabetes, having a fasting plasma glucose of greater than or equal to 126 milligrams per deciliter, or having a hemoglobin A1C greater than or equal to 6.5%. Fasting sample weights were used to calculate these estimates.

14.8% of adults had diabetes. The prevalence of diabetes was higher among men than women. The prevalence of diabetes increased with increasing age but decreased with increasing family income and the prevalence of diabetes was lower in non-Hispanic White adults compared to other race and Hispanic origin groups.

Complete tooth loss among adults aged 65 years and older was defined here as having no natural tooth, dental root fragment nor implanted tooth and was based on 28 teeth, excluding third molars. The prevalence of complete tooth loss was 13.8%. The prevalence did not differ by sex but did increase with age. Tooth loss was higher among non-Hispanic Black adults than non-

Hispanic White adults but otherwise did not differ by race and Hispanic origin and tooth loss decreased with increasing family income.

So with regards to the future, more data releases are anticipated. These data releases will occur in several different forms. Other combined 2017-through-March 2020 pre-pandemic data are expected to be released on the NHANES website and would be treated like a probability sample. And provided sample weights should be used for analysis with these data.

In the future, this data would be released on the NHANES website along with the currently available data, which can be found under the NHANES 2017 through March 2020 Pre-pandemic data page.

In some cases, 2017-through-March 2020 pre-pandemic data determined to have disclosure risk will be released through the NCHS Research Data Center to ensure additional measures to protect confidentiality. For these data, which are treated like a probability sample, the provided sample weights should also be used for analyses.

For those data released as limited access data files, once released, information about the variables will be available on the NHANES website under limited-access files, under the 2017-to-March 2020 Pre-pandemic data page. However, the actual data will only be available through NCHS's Research Data Center.

There are some measures that are unique to the 2019-through-March 2020 NHANES data collection. These cannot be combined with 2017-through-2018. And, for these measures, nationally representative estimates are not possible. These data will instead be released through the NCHS Research Data Center.

For these data, released as limited access data files, once released, information about the variables will be available on the NHANES website under limited-access files under the 2019-through-2020 data page. However, again, the actual data will only be available through NCHS's Research Data Center.

And this can be found on the NCHS website. Information about accessing restricted data, including submission of research proposals, can be found here. Thank you.

**HOST:** May has been a busy month, one in which several milestones were observed through NCHS data. On May 11, full-year 2021 [provisional data](#) was released on drug overdose deaths in the country. Drug deaths topped 107,000 last year, and fentanyl and other synthetic opioids were involved in two-thirds of those deaths. Overdose deaths increased 15% in 2021, which was half the increase observed in 2020, when overdose deaths increased 30% from 2019. In 2021, Alaska saw the biggest increase in overdose deaths – a 75% increase for the year. Hawaii was the only state to have a decline in overdose deaths – a 1.8% drop from 2020.

On May 16, the United States reached a tragic milestone, topping the one million death mark for COVID-related deaths since January 2020. COVID-19 remains the 3rd leading cause of death for all Americans.

This month NCHS also [documented](#) that the number and rate of marriages in the U.S. during 2020 fell over 16% from 2019, and the number of marriages was the lowest in the country since 1963. 46 states and DC saw declines in marriage during 2020, and only four states – Montana, Utah, Texas, and Alabama – saw their marriage rates increase during 2020. Nevada, as usual, had the highest marriage rate in the country during 2020 – but the rate dropped nearly 19% from 2019.

On May 24, NCHS released [2021 birth statistics](#) for the nation, showing the first increase in the number of births and the general fertility rate in seven years. The general fertility rate is the number of births per 1,000 women ages 15 to 44. The teen birth rate continued to drop in 2021, marking the 28th year in the last 30 years that the birth rate for females ages 15-19 has declined. While birth rates dropped in 2021 for women between ages 15 and 24, rates increased for women between ages 25 and 49. Meanwhile, cesarean deliveries increased in 2021, and preterm birth rates also increased, to the highest level since 2007.

And last, NCHS released a [report on sexual orientation](#) and differences in access to care, health status, behaviors and beliefs. The new study drew from three different NCHS data sources: the National Health and Nutrition Examination Survey, the National Health Interview Survey, and the National Survey of Family Growth. The research found that bisexual men and women, gay men, and lesbian women report smoking and heavy drinking and using marijuana and illicit stimulants more often than heterosexual people. Lesbian and bisexual women reported diagnoses of arthritis, asthma, cancer, diabetes, heart disease, and hypertension more often than heterosexual women. Bisexual women reported having been diagnosed with endometriosis, ovulation or menstrual problems, and pelvic inflammatory disease more often than heterosexual women. Weight and other body measurements also differed by sexual orientation.

Thank you for tuning in to this month's edition of "Statcast..."