

DR. RYNE PAULOSE: Thanks, Lisa. Good afternoon, everyone. During today's webinar, I will be presenting on the latest data and reports from NHANES.

As our facilitator Lisa just mentioned, my name is Dr. Ryne Paulose, and I'm the acting director of the NHANES program.

The NHANES program is one of several programs within the National Center for Health Statistics, or NCHS.

NCHS is the nation's principal health statistical agency.

Its mission is to provide statistical information that will guide actions and policies to improve the health of the American people.

It monitors the nation's health by collecting, analyzing, and disseminating health data to identify health problems, risk factors, and disease patterns.

NCHS uses a variety of data collection mechanisms to obtain information on the health of the U.S. population.

The main sources of data collection include birth and death certificates through the National Vital Statistics System, personal interviews in households and by phone through the National Health Interview Survey, standardized physical examinations and laboratory tests through the National Health and Nutrition Examination Survey, and health care records from facilities and providers through our National Health Care Surveys.

I will now talk further about NHANES.

The mission of NHANES is to provide timely and objectively measured health and nutrition information that can guide public health actions and policies to improve the health of the nation.

NHANES is a multipurpose survey with several objectives, including estimating the national prevalence of various health conditions, like obesity, hypertension, diabetes, as well as certain infectious diseases; monitoring trends in prevalence awareness treatment and control of selected diseases and conditions; providing prevalence estimates and monitoring trends and environmental exposures; studying the relationship among diet, nutrition, and health; and establishing and maintaining a robust bio specimen program.

NHANES has been conducting surveys since the early 1960s, starting with the three National Health Examination Surveys that were conducted from 1960 to 1970.

In 1971, the nutrition component was added, and the survey became the National Health and Nutrition Examination Survey.

Since 1999, NHANES has been conducted every year with data released in 2-year cycles.

This is referred to as the continuous NHANES, since the survey is ongoing and continuously conducted throughout the United States.

NHANES is a nationally representative sample of the civilian, noninstitutionalized U.S. population.

About 5,000 persons are examined annually, with oversampling of certain subpopulations to increase the precision of estimates obtained on these groups.

NHANES is a complex, multistage probability design.

It first samples counties, out of more than 3,000 U.S. counties.

Then, within the counties, it samples segments, which are groups of households.

Within the segments, households are then selected.

And then within the household, members are screened for eligibility, and sample persons are selected.

NHANES is unique in that it conducts an in-person home interview, followed by a health exam at a mobile examination center, or MEC.

During the home interview, participants are asked demographic, socioeconomic, dietary, and health-related questions.

At the MEC, participants receive physical exam measurements, specialized tests, private interviews, bio specimen collection, and a dietary assessment.

Since we began the continuous survey in 1999-2000, we have collected examination data on many different health topics and areas.

We've continuously collected blood and urine for the measurements of various analytes.

We've measured blood pressure, body composition, dental caries, depression, and dietary intake.

We've also collected sensitive topics such as drug and alcohol use and sexual behavior that have been collected during our private MEC interview.

We've also measured a number of other health topics that have varied across the 2-year survey cycles. A number of different processes occur prior to the collected data being released into the public. They include data quality control and editing, weighting procedures, data file preparation and documentation, as well as confidentiality review.

Data, once ready, are released in 2-year survey cycles to prevent disclosure risk and to increase sample size.

Since our first continuous NHANES data release, we have publicly released over 1,300 data files.

The first set of 2017-18 data were released in February of this year.

This represents the most recent data that are available.

The release included over 50 questionnaire examination and laboratory data files.

As of May 1st, over one-third of all of the 2017-18 files have been publicly released.

Another 27% are in process, and are expected to be released in the next couple months.

This would include dietary intake and dietary supplements data, among others.

If you visit the NHANES homepage and go to the "What's New" box, you can see a listing of the latest publications and data release from NHANES.

At the bottom of the "What's New" box is a blue button that says "More."

If you click on this button, you will be taken to a page that provides a comprehensive listing of publications and data that have been released by month and year.

You can also access NHANES data and corresponding documentation by clicking on the "Survey Data and Documentation" box on NHANES' homepage.

You will then be taken to a listing of the 2-year NHANES survey cycles, as well as earlier years of NHANES.

If you select the 2017-18 box from the continuous survey, you will be taken to this page, which lists the type of data released.

That is, demographic, dietary, examination, laboratory, or other.

If you select examination data, you will be taken to a page that lists the 2017-18 data that are currently publicly available.

Some of our data may be released as a limited access data file.

These are data files that are not downloadable on our website, like the other files, due to confidentiality or disclosure risk of our survey participants.

But these data are available through NCHS' Research Data Center, or RDC.

The RDC offers a secure environment for analyzing data that pose increased disclosure risk.

Further information for gaining access to limited access data files from NHANES, or the other NCHS programs, are available on the NCHS Research Data Center website.

And as the blue note on the RDC homepage identifies, the facility is currently closed.

But they are continuing to accept and review research proposals.

Those interested in submitting a proposal, the first link on this page will take you to a detailed explanation of what is needed for a proposal submission.

Also, on the survey data documentation site is a "Survey Methods" box.

If you click on this box, you will be taken to a page with all of the survey method reports and analytic guidelines.

This page contains critical reports on our plan and operations, sample design and estimation procedures, and analytic guidelines.

It's here that you will find our most recent publication on the 2015 to 2018 sample design and estimation procedures for NHANES.

Who uses the NHANES data?

Our data are used by numerous federal agencies, academic institutions, the general public, policymakers, and many others.

Information from the analysis of our data are published in numerous scientific journals, government publications, and local and national news media outlets.

National support on human exposure to environmental chemicals is an example of a primary and significant use of the NHANES data.

This report is a series of ongoing assessments of the U.S. population's exposure to environmental chemicals.

There are over 300 chemicals or other metabolites that are presented in this report.

And all the specimens used in the analysis are from NHANES samples.

And just last year, the fourth report was published.

Another example is a contribution of NHANES data to understanding the oral health of Americans. NHANES has conducted oral health exams on NHANES participants continuously since 1999, as well as in earlier surveys.

These data were part of the last Surgeon General's report on oral health in 2000.

More recent NHANES oral health data will be included in the 2020 report that is expected to be published later this year.

The "Dietary Guidelines of Americans" are a publication by the Department of Health and Human Services and the U.S. Department of Agriculture.

It is updated every 5 years.

NHANES data are a primary source of dietary data for this report, and are used to describe dietary patterns; food, beverage, and nutrient intake of Americans; and to identify nutrients of public health concern.

Work on the 2020 to 2025 DGA is in progress.

And for the first time, detailed guidance for children birth to 24 months of age, will be included.

So, how many NHANES publications have there been?

Since the first data release of our 1999-2000 data in June of 2002, we have had over 7,000 publications.

And these numbers would be even higher if the government reports and other types of publications that are not in PubMed are included.

I want to now briefly mention the various types of reports that NCHS publishes.

Data Briefs are one type of NCHS publication.

They summarize the latest data on current public health topics in eight pages of easily understandable text and graphics.

They are intended for general public and policy programmatic audiences.

The National Health Statistics Report, our longer reports, have provided analyses of health topics, data evaluation, or new information on methods or measurement issues.

The Vital and Health Statistics Series are more technical reports that provide detail on survey programs and collection procedures, on data evaluation and methods research, and on statistics from analytical and epidemiologic studies.

Health E-Stats are another type of NCHS publication.

These are very brief reports, usually less than 500 words on a current and timely health topic, such as trends in fertility rates or prevalence of obesity.

All the NCHS reports go through a review and clearance process.

They are also referenced in PubMed, except for the Health E-Stats.

NHANES staff publish in the various types of NCHS reports that I just described.

They also publish in numerous scientific journals.

But today, I will highlight the NHANES staff's most recent Data Brief publications that use the NHANES 2017 to 2018 data.

Our first 2017-18 publication coincided with our data release in February, and was on obesity and severe obesity among U.S. adults.

Obesity is associated with serious health risks.

Severe obesity further increases the risk of obesity-related complications, such as coronary heart disease and end-stage renal disease.

A significant increase was reported in the prevalence of obesity from 1999-2000 through 2015-16 in an earlier publication.

This updated Data Brief provides the most recent and national data on obesity and severe obesity prevalence among U.S. adults by sex, age, and race and Hispanic origin.

In this report, the 2017-18 data were used to compute prevalence estimates, and data from 1999-2000 through 2017-18 were used to evaluate trends over time.

Estimates are based on measured height and weight that are collected from participants during their examination at the NHANES MEC.

Obesity was defined as a body mass index greater than or equal to 30.

Severe obesity was defined as greater than or equal to 40.

Analysis used examination sample weights, which account for the differential probabilities of selection, nonresponse, and noncoverage.

In the report, we present age-adjusted estimates to be able to compare prevalence estimates between subgroups that differ with respect to their age distributions.

In 2017-18, the age-adjusted prevalence of obesity in adults was 42.4%.

There were no significant differences between men and women overall.

There were also no differences in the prevalence of obesity by age groups, overall, and for men and women by age group.

Prevalence of obesity was lowest among non-Hispanic Asian adults, overall, as well as for men and for women.

Prevalence of obesity was highest among non-Hispanic black adults, overall, and for women.

Among men, there were no significant differences between non-Hispanic white, non-Hispanic black, and Hispanic men in the prevalence of obesity.

The prevalence of severe obesity in adults in 2017 to 18 was 9.2%.

The prevalence was higher among women than men.

The prevalence was highest among adults aged 40 to 59, followed by adults aged 20 to 39, and then adults 60 and over.

Non-Hispanic black adults had the highest prevalence of severe obesity.

And non-Hispanic Asian adults had the lowest.

The prevalence of obesity increased from 30.5% of adults having obesity in 1999-2000 to over 40% in 2017-18.

Severe obesity nearly doubled in adults from a prevalence of 4.7% in 1999-2000 to 9.2% in 2017-18.

Monitoring the prevalence of obesity and severe obesity is important for public health programs that focus on reducing or preventing obesity and its consequences.

In the U.S., the prevalence of obesity among adults has moved further away from the Healthy People 2020 goal of 30.5%.

In March, our second Data Brief using the most recent NHANES data was published.

This Data Brief was on the prevalence and trends in hepatitis B virus infection in the U.S.

Hepatitis B virus (HBV) is a type of viral hepatitis that's transmitted through sexual contact, contaminated blood, or from an infected mother to her newborn.

HBV may cause a liver infection that is acute or short-term, but it may also cause chronic or long-term infection.

In 1982, hepatitis B vaccination was targeted to high-risk groups, such as injection drug users.

In 1991, universal hepatitis B vaccination of newborns was recommended in the U.S.

This report provides the most recent national data on the prevalence of hepatitis B virus infection and hepatitis B vaccination among U.S. adults.

For this report, the 2015 to 2018 NHANES data were used to compute prevalence estimates.

And the 1999-2000 through 2017-18 data were used to evaluate trends over time.

Estimates are based on the laboratory testing of blood samples that are collected from participants during their examination at the NHANES mobile exam center.

The presence of antibody to hepatitis B antigen were used to define infection as well as to define vaccination.

Examination sample weights were used in the analysis, and age-adjusted prevalence estimates are presented.

The prevalence of any hepatitis B virus infection was 4.3%.

Prevalence was higher among men than women, and among non-Hispanic Asian adults than the other race and Hispanic-origin groups.

Prevalence was also greater among adults born outside of the United States than those who were born within the 50 states or the District of Columbia.

The prevalence of hepatitis B vaccination was 25.2%.

Prevalence was higher among women than men, and among non-Hispanic Asian adults than the other race and Hispanic-origin groups.

There was no difference in the prevalence of hepatitis B vaccination among adults born outside of the United States compared with those who were born within the 50 states or District of Columbia.

The prevalence of hepatitis B infection decreased over time from 5.7% during 1999-2002 to 4.3% during 2015 to 18.

Prevalence of hepatitis B vaccination more than doubled from 12.3% during 1999-2002 to 25.2% during 2015 to 2018.

Last month, we published the Data Brief on total cholesterol and high-density lipoprotein cholesterol (HDL) in adults.

High total cholesterol and low HDL cholesterol are independent and modifiable risk factors for coronary heart disease.

Based on an earlier date of republication, declining trends were seen in the prevalence of high total cholesterol and in low HDL cholesterol.

This report presents the most recent national data on the prevalence of high total cholesterol and low HDL among U.S. adults.

For this report, the 2015 to 18 NHANES data were used to compute prevalence estimates.

Data from 1999 to 2018 were used to evaluate trends in high total cholesterol.

And data from 2007 to 2018 were used for low HDL due to a method change that occurred in 2007.

Estimates are based on the laboratory testing of blood samples collected from participants during their examination at the mobile exam center.

High total cholesterol was defined as a serum total cholesterol value greater than or equal to 240.

Low HDL cholesterol was defined as a serum HDL value less than 40.

Examination sample weights were used in the analysis, and age-adjusted estimates are again presented.

During 2015 to 2018, 11.4% of adults had high total cholesterol.

Prevalence was similar for men and women, and for the different race and Hispanic-origin groups.

Prevalence of high total cholesterol was highest among adults aged 40 to 59 years, compared with those aged 20 to 39 and 60 and over.

The prevalence of low HDL cholesterol was 17.2%.

It was higher among those aged 20 to 39 and 40 to 59 years than among those aged 60 years and over.

Prevalence of low HDL cholesterol was over three times higher among men than women, and this pattern was consistent in each of the three age groups.

Prevalence of low HDL cholesterol differed by race and Hispanic origin.

Among all race and Hispanic-origin groups, the prevalence was consistently lower among women than men.

The prevalence of high total cholesterol declined from 18.3% in 1999-2000 to 10.5% in 2017-18.

The prevalence of low HDL declined from 22.2% in 2007-08 to 16% in 2017-18.

In its task of monitoring the health of the U.S. population, Healthy People 2020 established a goal of lowering the percentage of adults with high total cholesterol to no more than 13.5%.

And based on the latest data from NHANES during 2015 to 18, the overall prevalence in both men and women met this goal.

However, the prevalence of high total cholesterol among adults aged 40 to 59 was above this goal.

Last month, we also published a Data Brief on hypertension among U.S. adults.

Hypertension is a major risk factor for cardiovascular disease.

Lowering blood pressure has been shown to decrease incidence of stroke, heart attack, and heart failure.

This report provides the most recent national data on the prevalence of hypertension among U.S. adults.

This report used the 2017 to 2018 NHANES data to compute prevalence estimates, and the 1999-2000 through 2017-18 data to evaluate trends over time.

Estimates are based on measured blood pressure by trained physicians during the participant's visit to the NHANES mobile exam center.

Hypertension was defined as an average systolic blood pressure greater than or equal to 130, a diastolic blood pressure greater than or equal to 80, or self-reported use of medication for high blood pressure.

Examination sample weights were used in the analysis.

And age-adjusted prevalence estimates are presented again.

It's important to note that the blood pressure threshold of 130/80 is lower than the previous threshold of 140/90 that was used in our earlier Data Briefs.

This change was made because of the updated 2017 hypertension guidelines published by the American Heart Association.

As a result of this change, a greater percentage of people will be defined as having hypertension.

So in 2017-18, the prevalence of age-adjusted hypertension was 45.4% among adults.

Higher among men than women, and increased with age overall, and for men and for women by age groups.

Hypertension prevalence was higher among non-Hispanic black adults compared to non-Hispanic white and Hispanic adults.

This pattern was also true for men and women.

The prevalence of hypertension is decreased from 47% in 1999-2000 to 41.7% in 2013-14, and then increased to 45.4% in 2017-18.

Men followed a similar pattern.

But for women, there was no significant change in the prevalence of hypertension from 1999-2000 to 2017 to 18.

Over the next several months, we are planning additional Data Brief publications.

These may be based on 2017-18 data that has already been released, like oral health and prescription medication data.

But we will also be planning for new Data Briefs based on upcoming data releases, such as the dietary intake and dietary supplements data, which are expected to be released during the summer of 2020.

Now I want to talk to you about the current survey cycle.

That is, NHANES 2019 to 2020.

After reviewing increasing safety and operational challenges with our medical staff and senior official at NCHS and CDC, a decision was made on March 12th to suspend our current household survey and MEC exam data collection, and to begin an orderly shutdown of all operations.

By March 16th, all of our 2020 data collection had been suspended.

And the 12 trailers that make up our current three MECs are now parked and being maintained in Beltsville, Maryland.

It's not clear how long the suspension of field operations will last.

We are closely monitoring the COVID-19 situation, and we will resume field operations as soon as prudent from public health and logistical perspectives.

We will be working closely with our contractor to understand the implications for completing the 2020 data collection, for developing protocols for restarting field operations, and for planning for the eventual data release of the 2019-2020 data.

Our goal is to minimize the impact of the suspension, and to continue to provide the data that are critical to our collaborators and to the public to meet their programmatic and policy needs.

We are also actively involved in assisting with the COVID-19 response. For these efforts, several NHANES staff have been deployed to assist with contact tracing, to work at quarantine stations, and at the FEMA National Response Coordination Center. NHANES has a fleet of trailers and trucks. And in addition to the 12 trailers that were part of the current data collection, we have other trailers and a truck that are no longer in operation. Two of these are CLIA-certified labs, so we decided to clean them up and offer their use to the departments of health in DC and in neighboring states to be able to increase their testing capacity for COVID-19. On April 24th, we transferred our truck to DC for mobile testing of DC's long-term care residents. We are also exploring serology testing for SARS CoV-2 on samples we collect once we're back in the field, as well as on samples we've already collected.

Lastly, we continue to provide national estimates based on our data on various health outcomes of interest during this time.

So, while we have stopped data collection, all other activities continue. This includes continuing with the data QC editing and release of earlier NHANES survey cycles, continuing with the data analysis and publication of reports, planning for our return to data collection in 2020 or 2021, as well as planning for a new 2023 survey design and data collection period.

So, thank you for your attention, and I hope you have gained a better understanding of NHANES overall, the latest data release, our most recent publications and what we are currently working on, as well as planning for.

LISA WAGNER: Thank you, Ryne. We are now entering the question and answer session.

As time allows, the presenter will address questions from the chat box.

Please submit your questions through the chat box now.

If your question or comment is not addressed, please direct it to paoquery@cdc.gov.

So Ryne, we do have several questions that have been asked during your presentation.

There was an early question around data access.

So I wonder if you could say a little bit, or just refresh on access to public-use data files and what's available, and then access to restricted files, in order to access restricted files, the requirements for that.

DR. RYNE PAULOSE: So, like I mentioned, all of our data, once they are ready for public release, like I mentioned, there's a lot that has to go into preparing our data files after they are collected, for public release.

Once they're ready, and the data file has been completed as well as the corresponding documentation, we make that all available on our website for folks to be able to go to the website and download what they need.

There are--I think I took you through details of how our website is set up.

So it's not just one file; every component exists as its own data file.

Some of our data collections are released in multiple data files.

So when you go to our website, depending upon what years of data you are interested in, you would click on those years, and then see what different types of data files are available for you to download.

We also--one thing I didn't mention during this webinar--is that we do also have our web tutorial that allows folks who aren't as familiar with our data to have a tool that they can go to to learn about our data and to learn about analyzing the data.

We also provide SAS code, various programming code that analysts may use to be able to access the data files and analyze them for whatever research questions that they're interested in.

So I didn't also present, not only on the public data, but also data that we don't release--we do release publicly, but they're not downloadable from our website.

They might have confidentiality risks for our survey participants, so we make them

available through the Research Data Center.

In my webinar, I had provided screenshots about how you can access the RDC.

There is a formal process there, and the link was also provided on one of my slides for users who are interested in accessing those data that are in the RDC and what the official proposal process is. I hope that helps answer the question.

LISA WAGNER: Great, thank you.

We have another question on the NHANES national-level data.

There was a question around the NHANES sample strategy, and whether it would allow for estimates to be made at a subnational scale, that's the state level or even smaller.

DR. RYNE PAULOSE: Yeah, that's a question that always comes up.

Again, our data, our survey is designed to produce a nationally representative sample of the U.S. population.

So, based on its design, it really is optimized to provide national estimates.

And that's really what we do best.

But there of course is interest research in subnational estimates.

There are ways, and if you go to our website, you can see that we do provide some estimates and some ways of combining multiple years to get estimates on, like Los Angeles County, we have a data set that's released and available to researchers to do further research exploration on.

In terms of other state-level data, analysis is not possible, because of the way that we collect our data; it's just not designed to produce estimates at the state level.

LISA WAGNER: Great, thank you. There's a question on the standard population number when we're using our age standardization.

Particularly, the question was around them noticing that we use the 2000 population, and is there a reason that we use that versus 2010? Is that the case?

DR. RYNE PAULOSE: Yeah, that's it. That's a good question.

So, we do still use, we continue to age standardize to the 2000 U.S. projected population.

We've had discussions internally, and this is currently what the Center is doing.

So this isn't just what NHANES is doing.

Though there is a shift now to use the 2010.

But whenever we use a population, whether it be 2000 or 2010, or another, it's just to standardize all of the subgroups so that their age distribution is similar.

So, you can use whatever, an arbitrary population.

We continue to use 2000 for comparability with estimates that we've provided or published in our earlier publications.

And that's really why I think we've continued to use the 2000 projected U.S. population, because it allows comparison to our earlier publications.

But again, any population is just for comparison purposes.

You can use whatever you want, as long as you consistently do it.

We've just continued to use 2000, but hopefully in the near future, we will all make a shift to producing estimates that are age standardizing to the 2010 U.S. population.

But that's currently not the process.

LISA WAGNER: Great, thank you. There was a question early on about response rates.

So, this person asked about seeing that the 2017 to 2018 had a lower response rate than in previous years.

Does that have an impact on the estimates that we're making? And they specifically referenced the prevalence of obesity.

DR. RYNE PAULOSE: Response rates of course are of interest.

And declining response rates are occurring across numerous federal surveys.

So this isn't something just that NHANES is dealing with, but all surveys are really trying to figure out what to do about declining response rates.

So, with the 2017-18 data, there was a lower response rate overall, compared to previous cycles.

And it did require a more thorough investigation into potential biases in our estimates, specifically, in our 2017 estimates.

And if any of you noticed, our 2017-18 data release occurred several months after our normal data release would have occurred.

And that's because we actually went through an extensive review of our 2017-18 data specifically investigating the lower response rates and any potential biases in our estimates.

So, we were very aware of the risk of lower response rates.

So before we put out the data to the public to be able to use and analyze and answer all of the wonderful research questions they have, we did go through an extensive evaluation of our data.

We do have a brief summary of the evaluation that's available on our website.

And a full report that details all of the analysis that we did is expected to be released, hopefully, in the next quarter of 2020.

We did look into the impact of unit nonresponse, characteristics of the different sample locations.

One of the things for those folks who are familiar with our survey, you know that we only go to 15 locations annually.

So in a 2-year data release cycle, there's 30 primary sampling units.

We did look into sampling variability that may have occurred, as well as the lower response rates.

And, we did evaluate, we did conduct nonresponse bias analyses.

We did show that the 2017-18 NHANES data did need some additional weight adjustments.

And we did do that before we released the data with the corresponding survey weights.

There was further adjustment of the NHANES 2017-18 sample weights.

This additional weighting adjustments included calibration to education and income groups that weren't done in previous years.

So, we think we've done a thorough analysis of the 17-18 data to address potential bias due to nonresponse or sampling error.

And what we released to the public in February, we're comfortable with.

As you saw, we're comfortable in analyzing those data, and all of our publications are evidence of that.

Hopefully, the full report that has a lot of the detail about all of the extensive evaluation that we conducted will be released to the public, hopefully, in the next quarter.

And that will be available on our website for everyone to read.

LISA WAGNER: Great, thank you. There was a question on childhood obesity prevalence. Do we have any plans to publish a report on 2017 to 2018 childhood obesity prevalence?

DR. RYNE PAULOSE: So, we do have Dr. Cynthia Ogden on the call, but Cynthia, I can answer that, and if you want to chime in to supplement what I say, that would be good. So, we don't currently have any plans for publishing a formal Data Brief, but we have published some estimates for obesity and severe obesity among children and adolescents as part of an MMWR QuickStat.

That was published on April 3rd of 2020.

And in that QuickStat, we did show that from 1999 to 2017-18, the prevalence of obesity among persons aged 2 to 19 increased from 13.9% to 19.3%, and that the prevalence of severe obesity also increased from 3.6 to 6.1.

So, I am certain there's going to be additional analysis.

I know Dr. Ogden is working on several journal articles that will explore obesity and severe obesity in a lot more detail than what was published in this QuickStat and what was published in the Data Brief.

LISA WAGNER: Great, thank you. We do have a question on cholesterol as well. Well, several, but one in particular.

Does the survey include any questions to help differentiate anybody who are taking cholesterol-lowering meds versus those who are not?

DR. RYNE PAULOSE: Yes, we do collect information on the use of cholesterol-lowering medications. There's actually a self-report question on that.

But there's also one other thing that NHANES does so well, and unlike some other surveys, is that we also collect data in the household during the household interview where we actually collect the pill bottles of participants who say that they report the use of a medication.

It's a prescription inventory method.

So, not only do we ask a participant to self-report whether they're using meds.

If they do say yes during the household interview, the interviewer will ask the participant to bring forth all of their pill bottles.

And what the interviewer will then do is go through and record information from the medication containers from their bottles.

So in addition to self-reported questions specifically asking about the use of lipid-lowering meds, we actually do have an entire section that's part of this prescription medication section that does record any drugs that a participant has used in the past 30 days.

Those data, as well as the self-reported question, has been used by our researchers internally at NHANES.

Dr. Margaret Carroll, among others, that have looked at these data to explore the use of lipid-lowering meds, in conjunction with the lab data, the cholesterol values that we publish on.

So yes, we do have those data, and they have been analyzed to further examine cholesterol values in the U.S. population.

LISA WAGNER: Great. There's a question on physical activity data for use.

The question was around if you could ask, or if you could explain a little bit about the availability of any data for physical activity use and if it has been changed at all from any previous cycles.

DR. RYNE PAULOSE: Yes, we do collect information on physical activity among youth as well as adults. We do have--I am not going to get the exact years correct--but we do add self-reported questions about physical activity for moderate, vigorous, and some other standardized questions on physical activity among youth and adults that has been part of our household interview questionnaire.

But in addition to that, we do collect data based on a physical activity monitor.

And I really should know the years better, because we just had our project officer who is the primary expert on these data present to our division recently.

Cynthia, do you mind interjecting and letting the person who asked the question know what years the physical activity monitor data we have?

So this is objectively measured data on physical activity in addition to the household interview data that we do collect.

The most recent data, unfortunately, has not been released to the public yet.

We are anticipating release of the physical activity monitor data to happen within the next few months.

But there were earlier years of physical activity monitor that was also collected.

And those are available already to the public, I just can't recall the years of those data.

DR. CYNTHIA OGDEN: I don't recall the exact years, but we certainly can get that information; it's available on the website.

LISA WAGNER: I think if there are any additional questions, as I mentioned, please send them to paoquery@cdc.gov, and we can certainly get more details to you.

Thank you. Ryne, there's another question on NHANES collection data sites.

If you could say little bit more about the mobile examination centers and, in particular, how they're mobile and sort of move around the country.

DR. RYNE PAULOSE: I was actually thinking to include some of those slides because it's always a very fascinating operation that we have.

So, like I mentioned, we go annually to 15 sites throughout the country.

They're scattered all throughout the U.S.

So, we actually have what we call these mobile exam centers.

We actually have three.

Two are operating concurrently, where they're in the field at different sites collecting data.

And one is moving to the next data collection site.

So there's three of these MECs.

Each MEC is made up of four trailers, and the trailers are connected to one another.

They're of varying lengths; I think three of these trailers are like 52 feet,

and one is called our "short trailer," which I want to say is 48 or 49.

But, they're trailers that are transported to whatever location that we're at at a particular time.

And when we get to the site, we have engineers and our contractors who then assemble these trailers side-by-side, and they're connected to one another.

So, when a participant comes to one of our mobile exam centers after they've completed their household interview, they come into this site.

They enter one door, and then they travel, they enter into a space where there is a reception area and a sitting area.

And then they'll move throughout these different four trailers to conduct the various exams given whatever their gender is, what their age is.

And they'll receive different exams.

And if you haven't had the chance to see it, we do offer opportunities when we're in a particular location to have a visit to these mobile exam centers, and to have an opportunity to do a dry run there.

It is an amazing setup that allows national data, health examination data to be conducted.

And within these exam centers, we have health professionals.

So, we have physicians, we have a dentist, we have phlebotomists, we have other technologists, medical technicians that are there to assess, to conduct the exams, to do the phlebotomy, and to take care of all of these wonderful participants who agree to come to the MEC and to participate in our survey. And I think that's it.

LISA WAGNER: Great. You did talk a little bit in your presentation about the sampling process.

There's a question about how NHANES attracts participants.

I wonder if you can talk a little bit about the incentives.

So, once someone is chosen as a part of the sample, the specific incentives that you offer or provide.

DR. RYNE PAULOSE: Definitely, we want to remunerate participants for their burden and the time and for contributing to the wonderful data that we're all able to analyze, and to provide estimates to understand the health of the U.S. population.

So, there are various levels of remuneration.

Let me first tell you that the average time varies for the household interview, as well as for the examination time, depending upon our participant's age.

So, in the household interview, we kind of say, we tend to say that it's about an hour for the household interview.

But, I think the latest average or the median that I've seen is about 45 minutes.

And it will, obviously, increase depending upon responses to individual's questions, especially if you have certain conditions and you respond yes, then there's going to be subsequent questions that ask the participants to further provide information.

So the length of time can be extended.

There is, then when they come to the MEC, the average examination time can be up to 3 hours.

There is remuneration.

I think the average, I want to say is \$125, but it can vary from 80 to maybe 150.

I might be getting those numbers wrong.

And then there is remuneration for some other things that might be asked of the participant that occurs after the examination as well.

So, there are different levels of incentives that are provided for the participation and the burden of the participants.

LISA WAGNER: Well thank you, Ryne. We're at time.

A video and slides of today's webinar will be made available on the NCHS website.

If you have any additional questions regarding NHANES or NCHS data and data systems, please send them to paoquery@cdc.gov.

That's p-a-o-q-u-e-r-y@c-d-c-g-o-v. Thank you for attending today's webinar.