

Information Collection Request

Revision

NATIONAL YOUTH TOBACCO SURVEY, 2021 - 2023

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SUPPORTING STATEMENT: PART B

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B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS

As of 2019, the NYTS is administered through electronic data collection. The questionnaire is programmed via an application onto tablets, which are transported to participating schools by trained data collectors. The questionnaire incorporates skip logic to tailor the questionnaire based on respondents' tobacco product use behaviors. Thus, respondents are not asked to respond to questions that do not apply to them, reducing overall respondent burden. Non-branded product images also are included in the electronic questionnaire to improve product recognition and recall. Overall, these changes improve validity of response, enhancing and enhance data quality. Findings from the 2018 NYTS Electronic Pilot study indicated that incorporating skip logic into the electronic survey reduced mean survey completion time by 15%, reduced the number of questions respondents needed to answer by 30%, and reduced the number of contradictory and inconsistent responses to zero, in comparison to an electronic survey with no skip logic (CDC, unpublished data). In the first full electronic NYTS administration conducted in 2019, the average survey completion time was approximately 12.5 minutes; however, students are given up to one class period (approximately 35-45 minutes) to complete the survey.

Surveys are completed in schools (classrooms) on provided tablets that do not require the use of WiFi or Internet access; data are stored locally on the tablet until it can be uploaded directly to a secure server (ICF MS SQL Server Database) via secure mobile hotspots. Thus, the main data collection procedure does not rely on a schools' IT networks. However, students absent on the day of survey administration are asked to complete a make-up survey using a web-based version of the survey. This make-up survey is programmed to mimic the tablet-based survey. Other than the change in mode of administration and associated modification of data collection procedures, all other survey methods remain comparable to past cycles of NYTS administration. This study will employ a repeat cross-sectional design to develop national estimates of tobacco product use behaviors and exposure to pro- and anti-tobacco influences among U.S. students enrolled in grades 6-12.

B.1 RESPONDENT UNIVERSE AND SAMPLING METHODS

The universe for the study will consist of students in 6th through 12th grade that attend public and private schools in the 50 U.S. States and the District of Columbia. Private schools will include both religious and non-religious schools.

The sampling frame for schools has been obtained from Market Data Retrieval (MDR) (formerly known as Quality Education Data, Inc., or QED). It has been augmented by combining it with the frames maintained by the National Center for Education Statistics (NCES). School-level data on enrollment by grade and minority race/ethnicity are available in the NCES data set.

Table B.1 displays the current U.S. distribution of eligible schools by urban status and type of school. This tabulation was computed over a frame of eligible schools with middle school and/or

high school grades prepared using the latest MDR files that are the basis for the sampling frame.¹

Table B.1: Distribution of Schools by Urban Status and School Type

Table of School Type by Urban Status			
School Type	Urban Status		
Frequency Percent Row Pct Col Pct	Non-Urban	Urban	Total
Non-Public	5702 8.01 41.94 14.54	7893 11.09 58.06 24.70	13595 19.10
Public	33512 47.09 58.20 85.46	24065 33.81 41.80 75.30	57577 80.90
Total	39214 55.10	31958 44.90	71172 100.00

B.2 PROCEDURES FOR COLLECTION OF INFORMATION

Statistical Methodology for Stratification and Sample Selection

A national probability sample will be selected that will support national estimates by grade, sex, and grade cross-tabulated by sex, for students enrolled in grades 6-12. The design will further support separate estimates of the characteristics of non-Hispanic white, non-Hispanic black, and Hispanic students by school level (middle and high school). The procedures for stratification and sample selection are consistent with those from previous cycles of NYTS. Additional details of the sampling plan are provided in Attachment L.

Sampling Frame and Stratification. For the 2021-2023 NYTS surveys, we will use a combination of sources to create the school frame in order to increase school coverage. Along with the MDR dataset, we will use two files from NCES; the Common Core Dataset (CCD) which is a national file of public schools and the Private School Universe Survey Dataset (PSS), a file of national

¹ We created a dichotomy of urban vs. non-urban schools using the Metro Status categorical variable available in these files.

non-public schools. The principle behind combining multiple data sources is to increase the coverage of schools nationally.

The sampling frame representing the 50 U.S. States and the District of Columbia will be stratified by urban status and by racial/ethnic minority concentrations. The definition of urban status strata, distinguishing urban and non-urban areas, will be based on metropolitan statistical area, or Metropolitan Statistical Area (MSA), versus non-MSA areas. The sample will be structured into geographically defined units, called primary sampling units (PSUs), which consist of one county or a group of small, contiguous counties. Table B-1 provides the distribution of eligible schools in the frame.

We will impose a school size threshold as an additional criterion for eligibility. By removing schools with an aggregate enrollment of less than 40 students across eligible grades (grades 6-8 for middle schools; grades 9-12 for high schools) from the frame, we will improve efficiency and safeguard privacy. Attachment K demonstrates that the coverage losses are negligible in terms of eligible students as well as in terms of potential biases.

Selection of PSUs. A total of 100 PSUs will be selected with probability proportional to the student enrollment in the PSU. The PSUs will be allocated to the urban/non-urban strata in proportion to the total eligible student enrollment in the stratum. This approach will increase the sampling efficiency by generating a nearly self-weighting sample.

Selection of Schools. Schools will be classified by enrollment size as small, medium or large. Small schools contain one or more grades with less than 28 students per eligible grade. The remaining schools are classified as medium if they have fewer than 56 students in any of the eligible grades; otherwise, they are considered large schools.

A total of 240 large schools will be selected from sample PSUs. Two schools—one middle school and one high school—will be selected per sample PSU. One large school per school level also will be selected from a subsample of 20 PSUs. In addition, 50 medium SSUs and 30 small SSUs will be selected from subsample PSUs, resulting in a total sample of 320 schools (200 + 40 + 50 + 30). The PSU subsample will be drawn as a simple random sample and schools will be drawn with probability proportional to the measure of eligible students enrolled in a school.

Selection of Students. Classes are selected based on two specific scientific parameters to ensure a nationally representative sample. First, classes have to be selected in such a way that all students in each school grade level have a chance to participate. Second, all classes must be mutually exclusive so that no student is selected more than once. In each school, once we have determined the type of class or time period from which classes will be selected, we randomly select the appropriate number of classes within each grade. To maintain acceptable school response rates, it is essential that each school have input in the decision of which classes will be sampled in their school following one of the above approaches. Examples of class sampling frames that have been used in past cycles include all 2nd period classes or a required physical education class. As long as the scientific sampling parameters are met, we work with each school to identify a classroom sampling frame that will work best for each school. All students in a selected classroom will be selected for the study.

To facilitate accurate prevalence estimates among racial/ethnic minority groups, the sampling design always seeks to balance increasing yields for minority students with overall precision. Prior cycles of the NYTS have successfully employed double class sampling to increase the number of non-Hispanic black and Hispanic students. In previous NYTS cycles, schools with high racial/ethnic minority populations were subject to double class selection. More specifically, two classes per grade were selected in these schools, compared to one class per grade in other schools, to increase the number of racial/ethnic minority students sampled. The 2021 NYTS will use double class selection among schools with high racial/ethnic minority populations.

Refusals. School districts, schools, or students who refuse to participate in the study will not be replaced in the sample. We will record the characteristics of schools that refuse along with reasons given for their refusal for analysis of potential study biases.

Estimation and Justification of Sample Size

The NYTS is designed to produce the key estimates accurate to within $\pm 5\%$ at a 95% precision level. Estimates by grade, sex, and grade cross-tabulated by sex, meet this standard. The same standard is used for the estimates for racial/ethnic groups by school level (middle and high school).

The derivation of sample sizes is driven by these precision levels for subgroup estimates, specifically for the smallest subgroups defined by grade and by sex. With a sample size of approximately 3,428 participants by grade—totals of 10,284 for middle school grades and 13,712 for high school grades—the design will ensure the required precision levels for design effects as large as 3.0. Consistent with recent cycles of NYTS, subgroups of size 1,500 students will be used to achieve the $\pm 5\%$ precision levels for 95% confidence intervals.

We propose to replicate key aspects of the sampling design utilized in prior cycles of the NYTS. Refinements typically occur in response to the changing demographics of the in-school population and to meet CDC's policy needs. For example, increasing percentages of minority students will likely lead to more efficient sampling of minority students. In addition, the proposed design will more effectively oversample non-Hispanic black students by increasing the sampling intensity in those schools with high concentrations of non-Hispanic black students.

The anticipated total number of participating students is a minimum of 24,000, as developed in Attachment L. We will randomly select 60 schools of the 120 large high schools and 60 schools of the 120 large middle schools into the double class sampling group. In other words, we will select two classes per grade in these schools (i.e., six classes in middle schools and eight classes in high schools) to ensure that target precision levels are met for racial/ethnic minority group estimates. Among the remaining large schools, only one class per grade level will be selected (60 high schools and 60 middle schools). Similarly, one class per grade level will be selected in medium schools. In small schools, that is, those that cannot support a full class selection at each grade, all students in all eligible grades are taken into the sample.

As in prior cycles of the NYTS, the sample is designed to yield approximately 1,500 participating non-Hispanic black students per school level and approximately 1,500 participating Hispanic students per school level. The target numbers were achieved in the previous cycles of the NYTS and will be confirmed in the simulation studies that we perform to fine tune the sampling parameters prior to sample selection.

Estimation and Statistical Testing Procedures

Sample data will be weighted by the inverse of the probability of case selection and adjusted for non-response. The resulting weights will be trimmed to reduce mean-squared error. Next, the strata weights will be adjusted to reflect true relative enrollments rather than relative weighted enrollment. Finally, the data will be post-stratified to match national distributions of middle and high school students by race/ethnicity and grade. Variances will be computed using linearization methods.

Confidence intervals vary depending upon whether an estimate represents the full population or a subset, such as a particular grade, sex, or racial/ethnic group. Within a grouping, they also vary depending on the level of the estimate and the design effect associated with the measure.

Based on the prior NYTS cycles, as well as on precision requirements that have driven the sampling design, we can expect the following subgroup estimates to be within $\pm 5\%$ at 95% precision level:

- Estimates by grade, sex, and grade cross-tabulated by sex
- Racial/ethnic minority group estimates for non-Hispanic blacks and Hispanics cross-tabulated by school level

The former estimates will be derived from projected sample sizes of 3,428 participating students per grade, and therefore, approximately 1,700 by sex within grade. For the latter estimates, the anticipated number of participants in each minority group is at least 1,500 per school level. For conservative design effect scenarios (design effects as large as 3.0), estimates based on these subgroup sample sizes will be within ± 5 percentage points at the 95% confidence level.

The NYTS data are used for trend analyses where data for successive cycles are compared with statistical testing techniques, when applicable. Statistical testing methods are also used to compare subgroup prevalence estimates (e.g., male versus female students) for each cycle of the NYTS. These tests will be performed with statistical techniques that account for the complex survey design. The 2019 NYTS will serve as the baseline year for assessing trends based on electronically-collected data.

Survey Instrument

The 2021 NYTS questionnaire (Attachment H1) contains 166 items. The first set of questions on the questionnaire gather demographic data. Most of the remaining questions address the

following tobacco-related topics: tobacco use (e-cigarettes, cigarettes, smokeless tobacco (chewing tobacco/snuff/dip), cigars (cigars, little cigars, cigarillos), hookah, roll-your-own tobacco, pipes, snus, dissolvable tobacco products, bidis, heated tobacco products, and nicotine pouches), knowledge and attitudes, media and advertising, minors' access and enforcement, cessation, and environmental exposure to tobacco smoke from combustible tobacco products and secondhand aerosol from e-cigarettes.

The questionnaire incorporates skip logic to tailor the questionnaire based on respondents' tobacco product use behaviors. Thus, respondents are not asked to respond to questions that do not apply to them, reducing overall respondent burden. Product images also are included in the electronic questionnaire to improve product recognition and recall. Given the efficiencies gained by transitioning to an electronic administration, previous "check all that apply" type questions related to flavored tobacco use and access to tobacco products are not asked separately for each specified tobacco product. This will allow for differentiation in patterns of use for individual products.

Data Collection Procedures

ICF International, Inc. serves as the data collection contractor for NYTS (see Section B.6). Data will be collected by professional data collectors who are specially trained to conduct the NYTS. Data collectors for the electronic administration were hired based on their having a working level of comfort with the technology (tablets, personal hotspots, web applications) and being able to transport and lift the equipment (up to 50 pounds). The time during the school day in which the survey is administered varies by school. This decision is made in coordination with each school to ensure that the type of class or period of the day selected for sampling: 1) meets the scientific sampling parameters to ensure a nationally representative sample; and 2) results in the least burden/highest possible acceptability for the school. Each data collector will have direct responsibility for administering the survey to students.

Teachers are asked to distribute and follow up on parental permission forms sent out prior to the scheduled date of data collection. Teachers are provided with a parental permission form distribution script (Attachment H2) to follow when distributing permission forms to students. Teachers can use the Data Collection Checklist (Attachment G1; instructions for completion provided in Attachment G2, "Letter to Teachers in Participating Schools") to track which students have received parental permission to participate in the data collection. The data collector will utilize the information on the Data Collection Checklist to identify students eligible for a make-up survey administration; this information will be recorded by the data collector on the "Make-up List and Instructions" document (also included in Attachment G1). Data collectors will leave instructions and access codes for eligible non-participating students to complete make-up surveys. Teachers will provide instructions, pass out access codes, and oversee the completion of make-up surveys upon students' return to class.

Once inside a classroom, data collectors communicate with the teacher on the status of permission form distribution, parental refusals, and completion of the Data Collection Checklist. Teachers are asked to identify students without parental consent to participate and to make sure

they have appropriate alternate activities. The data collector will utilize the information on the Data Collection Checklist (DCC) to identify students eligible for a make-up survey administration; this information will be recorded by the data collector on the “Make-up List and Instructions” document (also included in Attachment G1).

The data collector reads verbatim to eligible students a prepared script (Attachment H9) that emphasizes anonymity and the voluntary nature of the survey. Data collectors distribute tablets and instruction cards providing students’ unique survey access code as prompted in the script. Once the script is read fully and materials are distributed, students follow the instructions on the cards to unlock the tablet, enter the survey application (using their access code), and begin answering.

As students finish, data collectors collect the tablets and instruction cards. In the process, they check that the survey is submitted and that the application is ready for the next student’s use. If the application is not on the submission screen, the tablet is returned to the student and the data collector gives the student instructions on how to close the survey. (Data collectors are instructed in this protocol in an effort to avoid seeing any student responses that might be visible on screen). Tablets are carefully counted to make sure that all are returned, and the instruction cards are stored securely so that they are not accidentally distributed again to a later class.

Instructions and materials are left for teachers to administer make-up surveys to eligible nonparticipants upon their return to class. Materials include a survey administration script, a make-up list showing names/identifiers of eligible students, instruction cards with unique survey access codes for each eligible student, and a troubleshooting guide for the web-based make-up survey. As noted previously, the web-based survey is programmed to mimic the tablet-based survey. Teachers are instructed that students need to complete the make-up survey at school using an internet-connected device (personal or school-provided). Upon submission, make-up surveys are automatically incorporated into the counts for the appropriate school and class in the Data Collection Management Application (DCMA), the contractor’s system used to monitor, track, and report on fielding activities.

Once data collection at a school is concluded, data collectors record the number of eligible students in each selected class, based on the documentation on the DCC, and the expected number of completed surveys, based on their observation in the classroom into the DCMA. If a class did not participate for whatever reason, this is also documented in the DCMA and this class then is tagged for follow up to ensure their participation.

At the end of each days’ data collection, data collectors sync the tablet data to ICF’s secure server by connecting each tablet to the internet via a provided secure MiFi hotspot device. When this manual sync is complete, a screen appears with a timestamp noting the last successful sync. Data synchronization also can be done automatically (waiting for the tablet to “push” the data at preset intervals (usually 5 minutes) after connecting to a WiFi signal).

In general, data collection procedures have been designed to ensure that:

- Protocol is followed in obtaining access to schools;
- Every day school activity schedules are disrupted minimally;

- Administrative burden placed on teachers is minimal;
- Parents give informed permission to participate in the survey;
- Anonymity of student participation is maintained, with no punitive actions against non-participants;
- Alternative activities are provided for nonparticipants;
- Control over the quality of data is maintained.

Obtaining Access to and Support from Schools

All initial letters of invitation to participate in the NYTS will be on CDC letterhead from the Department of Health and Human Services and signed by Linda Neff, PhD, MSPH, Chief of the Epidemiology Branch at the Office on Smoking and Health, National Center of Chronic Disease Prevention and Health Promotion (NCCDPHP) at CDC. The procedures for gaining access to and support from states, districts, and schools will have three major steps:

- First, support will be sought from State Education Agencies and State Departments of Health. The initial request will be accompanied by a study fact sheet and a list of all sampled districts and schools in their jurisdiction. States will be asked to provide general guidance on working with the selected school districts and schools and to notify school districts that they may anticipate being contacted about the survey.
- Once cleared at the state level, an invitation packet will be sent to sampled school districts in the state. Districts will receive a list of schools sampled from within their district in the invitation packet and will be asked to provide general guidance on working with them and to notify schools that they may anticipate being contacted about the study. Telephone contact will be made with the office comparable to the district office (e.g., diocesan office of education), if there is one. Some districts require that a research proposal be submitted and approved to conduct scientific studies among their students. This practice is becoming more common; for the 2019 NYTS, 39 districts (representing 70 sampled schools) required research proposals. The format, length, and timeline for these proposals varies by district. For these districts, sampled schools cannot be contacted for individual participation until the research proposal is approved.
- Once cleared at the school district level, selected schools will be invited to participate. Information previously obtained about the school will be verified. The burden and benefits of participation in the survey will be presented. After a school agrees to participate, a tailor-made plan for collection of data in the school will be developed (e.g., select classes, determine whether the survey will be administered to selected classes sections simultaneously or in serial). Well in advance of the agreed upon survey administration date, schools will receive the appropriate number of parental consent forms and instructions. All materials needed to conduct the survey will be provided by the data collector visiting the school. Contact with schools will be maintained until all data collection activities have been completed.

Prior experience suggests the process of working with each state's health and education agencies, school districts and schools will have unique features. Communication with each agency will

recognize the organizational constraints and prevailing practices of the agency. Scripts for use in guiding these discussions may be found in Appendices D1 (state-level), E1 (district-level), and F1 (school-level). Copies of letters of invitation can be found in Attachment D2 (state-level); Attachment E2 (district-level); and Attachment F2 (school-level). Attachment F2 also contains the NYTS Fact Sheet for Schools. Attachment F3 contains a copy of the letter sent to school administrators once they have agreed to participate.

Informed Consent

The permission form informs both the student and the parent about an important activity in which the student has the opportunity to participate. By providing adequate information about the activity, it helps ensure that permission to participate will be informed. Copies of the active and passive permission forms are contained in Appendices H3 and H4 (English versions) and H5 and H6 (Spanish versions). In accordance with the No Child Left Behind Act, the permission forms indicate that a copy of the questionnaire will be available for review by parents at their child's school.

A waiver of written student assent is obtained for the participation of children because this research presents no more than minimal risk to subjects; parental permission is required for participation. The waiver will not adversely affect the rights and welfare of the students because they are free to decline to take part, and it is thought that some students may perceive they are not anonymous if they are required to provide stated assent and sign a consent/assent document. Students are told "Participating in this survey is voluntary and your grade in this class will not be affected, whether or not you answer the questions." Completion of the survey implies student assent.

As a means to monitor the parental permission form process and to ensure questionnaires are completed only by students for whom permission has been obtained, teachers are asked to enter student names on the Data Collection Checklist (similar to a class roll) (Attachment G1). Teachers can substitute any other information in place of student names (such as student ID numbers or letters) on the Data Collection Checklist as long as it will allow them to individually determine which students received parental permission to participate. This information will be conveyed to the data collector on the survey administration day.

The Data Collection Checklist is an optional tool to assist in managing the parental permission and student assent process. It will be destroyed at the end of the study. No individually identifiable information is collected on the NYTS survey (e.g., student name, class, school, etc.), therefore there is no way to connect students' names to their response data.

NYTS is required by law to notify parents of students selected for NYTS surveys that their child has been selected and that student participation is voluntary. Schools may use various processes to obtain parental permission, forms of notification (electronically, such as email, or a hard-copy letter) either provided by the state or developed by the school. However, the notification shall include the following elements:

- this school will be participating in NYTS and your child’s classroom may be/is selected to participate;
- a brief description of the nature and importance of NYTS;
- all responses are confidential, and results will not be reported to or about individual students or schools; and
- your child may be excused from participation for any reason, is not required to finish the survey, and is not required to answer any test questions.

Quality Control

Table B.2 lists the major means of quality control. As shown, the task of collecting quality data begins with a clear and explicit study protocol, is supplemented with accurate programming of the NYTS questionnaire, and concludes with the regular submission of data records to a secure repository. In between these activities, and subsequent to data collector training, measures must be taken to reinforce training, to assist field staff who express/exhibit difficulties completing data collection activities, and to check on data collection techniques. Also, early inspection of a preliminary data set is necessary to ensure data integrity. Because the ultimate aim is production of a high-quality data set and reports, various quality assurance activities will be applied during the data collection phase.

Table B.2: Major Means of Quality Control

Survey Step	Quality Control Procedures
Mailing to Districts and School	<ul style="list-style-type: none"> ▪ Validate district and school sample to verify/update contact information of district/diocese/school leadership (100%) ▪ Check inner vs. outer label for agreement in correspondence (5% sample) ▪ Verify that any errors in packaging were not systematic (100%)
Telephone Follow-up Contacts	<ul style="list-style-type: none"> ▪ Monitor early sample of calls to ensure that the recruiter follows procedures, elicits proper information, and has proper demeanor (10%) ▪ Perform spot checks on recruiters’ class selection outcomes to confirm procedures were implemented according to protocol (10%)
Previsit Logistics Verification	<ul style="list-style-type: none"> ▪ Review data collection procedures with school personnel in each school to ensure that all preparatory activities are performed properly in advance of data collector arrival (e.g., distribution of permission forms) (100%)
Data Collector Training and Supervision of School Visits	<ul style="list-style-type: none"> ▪ Issue quizzes during data collector training to ensure that key concepts are understood (daily during training) ▪ Maintain at least one weekly telephone monitoring of all field staff throughout data collection (100% of field staff) ▪ Reinforce training and clarify procedures through periodic conference calls with field staff (100% of field staff) ▪ Verify by telephone with a 10% sample of early schools that all

	data collection procedures are being followed
Questionnaire Programming and Testing	<ul style="list-style-type: none"> ▪ Ensure verbatim wording of displayed text to that of the analyst/programmer version of the questionnaire (100% of question and instructional text) ▪ Use a variety of user profiles and behavior combinations to test correct and appropriate skip log and routing through questionnaire (100% of questions with programmed “triggers”) ▪ Verify that any write-in responses are within prescribed ranges (100% of write-in questions) ▪ Create “dummy data set” to verify that all entered responses are correctly captured in the data set as intended (minimum 50 records)
Receipt Control	<ul style="list-style-type: none"> ▪ Verify syncing of data from the field is occurring no later than 48 hours after data collection concludes (100% of schools) ▪ Verify number of data records received in the data base match the number of expected records reported by field staff (100% of schools) ▪ Capture date/time stamps and staff credentials in the centralized system for all transactions (100%)
Data Review	<ul style="list-style-type: none"> ▪ During fielding, extract records from at least three schools to verify data set is capturing and storing records as expected (during first week of fielding, or after at least three schools’ data have been collected and synced)

B.3 METHODS TO MAXIMIZE RESPONSE RATES AND DEAL WITH NONRESPONSE

Expected Response Rates

Across 15 cycles, the NYTS has maintained exceptional student and school response rates. We have averaged a 74% overall (school x student) response rate. At the school and student levels, response rates are higher. The school response rate has averaged 83% with a low of 73%, and student response rate has averaged approximately 90% with a low of 86%. For the 2019 NYTS, school response rate was 77.2% and the student response rate was 85.8%, for an overall response rate of 66.3%.

NYTS response rates traditionally have been relatively high compared to other federally funded, national, school-based, health-related surveys of high school students. For example, the widely cited Monitoring the Future survey (formerly known as the High School Senior Survey) achieves substantially lower response rates. The response rates established by the NYTS are the product of the application of proven and tested procedures for maximizing school and student participation.

As indicated in Table A.16 in Supporting Statement A, it is desirable to complete data collection before the final month of school (i.e., by mid-April to mid-May, depending on location). Many schools are very busy at that time with standardized testing and final exams; in addition,

attendance can be very unstable, especially among twelfth grade students.

Methods for Maximizing Responses and Handling Nonresponse

We distinguish among six potential types of nonresponse problems: refusal to participate by a selected school district, school, teacher, parent, or student; and collection of incomplete information from a student.

To minimize refusals at all levels--from school district to student--we will use a variety of techniques, emphasizing the importance of the survey. Given the subject matter is tobacco, we expect that a few school districts or schools will need to place the issue of survey participation before the school board. To increase the likelihood of an affirmative decision, we will: (1) work through the state agencies to communicate its support of the survey; (2) indicate that the survey is being sponsored by CDC; (3) convey to the school district or school that the survey has the endorsement of many key national educational and health associations, such as the National PTA, American Medical Association, National Association of State Boards of Education, Council of Chief State School Officers and the National School Boards Association;(4) maintain both a toll-free hotline and dedicated email account to answer questions from the school board; (5) offer a package of educational products to each participating school, as recommended by OMB in approving the 1998 YRBS in alternative schools (OMB No. 0920-0416, expiration 12/98) and implemented on NYTS ever since; (6) comply with all requirements from school districts in preparing written proposals for survey clearance; (7) convey a willingness to appear in person, if needed, to present the survey before a school board, research committee, or other local entity tasked with reviewing the survey; and (8) offer schools a monetary incentive of \$500.

Once recruiters encounter district's or school's refusals to participate, they are encouraged to listen closely to the decision maker's concern(s) and "leave the door open" with the districts and/or schools for additional contact later. NYTS staff will begin targeted outreach to refusals and unresponsive districts and schools during the period of data collections. Initially this targeted outreach primarily includes re-mailing the original invitation packet with a personalized cover memo and telephone follow-up by the original recruiter. By re-mailing the information, this presents a fresh request to which the decision maker can respond, since it is likely that the original request is likely lost or discarded. Recruiters are encouraged to identify relevant potential connections between NYTS content and district or school health-related initiatives via strategic plans and curriculum descriptions available on district and school websites and include this in the memo and/or as part of their conversations with the decision maker. Sample memos utilized for re-mails can be found in Attachment I. Other methods included 1) contact by a different recruiter who provided a "new voice" to the decision maker or 2) in-person recruitment visits by field staff.

The sampling plan does not allow for the replacement of schools that refuse to participate due to concern that replacing schools would introduce bias. All participating state departments of health and education, school districts, and schools also will have access to the published survey results.

Maximizing responses and dealing with refusals from parents, teachers, and students require different strategies. To maximize responses, we will recommend that schools help to advertise

the survey through the principal's newsletter, PTA meetings, and other established means of communication. Reminders (Attachments H7 and H8) will be sent to parents who have not returned parental permission forms within an agreed upon time period (e.g., three days); those who do not respond to the reminder will be sent a second and final reminder. The permission form will provide a telephone number at CDC that parents may call to have questions answered before agreeing to give permission for their child's participation. Permission forms will be available in English, Spanish, and any other languages spoken by a large percentage of parents in a given school district. Field staff will be available on location to answer questions from parents who remain uncertain of permission. Bilingual field staff will be used in locations with high Hispanic concentrations (e.g., California, Florida, New York City, and Texas).

Teacher refusals to cooperate with the study are not expected to be a problem because schools will already have agreed to participate. Refusals by students who have parental permission to participate are expected to be minimal. No punitive action will be taken against a nonconsenting student. Nonconsenting students will not be replaced. Data will be analyzed to determine if student nonresponse introduces any biases.

Participation in the NYTS is completely voluntary, and students may skip any question in which they are not comfortable answering. However, to minimize the likelihood of missing values on the survey, particularly on questions which skip patterns are contingent on, the digital-based questionnaire has data range validations and prompts. Thus, students who skip questions on ever or current use of individual tobacco products or who give out-of-range answers will be reminded to provide an appropriate response in a pop-up in the digital-based questionnaire before proceeding further in the survey. In the 2021 NYTS survey (attachment H1), programming instructions for missing or "not answered (NA)" responses to crucial questions are provided (see question 6, ever e-cigarette use, for an example). The prompt, or soft validation, reads, "*You skipped this question. Please provide a response or use the arrows at the bottom of the screen to continue.*" For questions that ask participants to specify a written numerical response (e.g., to enter the number of days they have used a product), programming instructions are provided to only allow a specific range of values. In the 2021 survey, please see question 9, current e-cigarette use, as an example of where programming ranges are employed in the NYTS. Additionally, once students finish the survey, a summary table will display a list of all unanswered question items before the student submits the survey. This provides students a chance to go back directly to each unanswered question item, if they choose to do so. As students finish, data collectors collect the tablets. In the process, data collectors check to be sure that the survey is submitted. If the application is not on the submission screen, the tablet is returned to the student and the data collector gives the student instructions on how to close the survey.

B.4 TESTS OF PROCEDURES OR METHODS TO BE UNDERTAKEN

The NYTS core questionnaire items during the initial NYTS cycle underwent cognitive analyses by RTI in 1999. Further cognitive analyses or pretests of the survey were conducted in 2003, 2004, 2005, 2012, 2013, and 2015, as described in previous Supporting Statements for NYTS. In 2017, 13 questions and response options were cognitively tested for inclusion on NYTS, focused primarily on e-cigarettes: rules regarding use in the home, reasons for use, types of e-cigarettes

used, and how youth accessed e-cigarettes. In 2018, cognitive testing of 15 questions and response options was completed, again focused on e-cigarette use. Terminology, devices used, substances used, and reasons for use were all explored. Finally, cognitive testing was performed in 2019, assessing e-cigarette terminology, e-cigarette devices used, substances used in e-cigarettes (e.g. nicotine, marijuana, THC), reasons for using e-cigarettes, exposure to secondhand tobacco smoke and secondhand e-cigarette aerosol, exposure to e-cigarette posts in social media, injunctive and descriptive e-cigarette norms, and indicators for affluence or socioeconomic status (SES) of the student's family. The findings of these testing activities are used to improve existing questions on the NYTS (e.g. users knowing substances they are using in e-cigarettes) as well as generate new questions (assessment of student's family's SES).

The current ICR includes an updated line item in the burden table to support testing of changes to the NYTS questionnaire prior to their implementation. Burden is specifically allocated to performing testing of new or modified questions that will provide better measures of tobacco products. The burden also includes pre-testing of the questionnaire to confirm that they can be completed in 45 minutes.

B.5. RESPONSE TO 2016 PEER REVIEW PANEL RECOMMENDATIONS REGARDING NYTS SAMPLE

In October 2016, OSH convened a peer review panel of external experts to assess and develop recommendations for updating and enhancing the NYTS sample. This review was mandated by OMB as a condition of renewal for 2018-2020 NYTS package; an overview of the panel's recommendations and the agency's response were published there. For the 2021-2023 package, OMB asked OSH to address the status of items where OSH concurred with the panel's recommendations and looked to implement them in the future. This information is provided in the following paragraphs:

SAMPLING DESIGN

Recommendation: *Given adolescent developmental trajectories associated with the take-up of tobacco use behaviors, it is conceivable that the tobacco use rates in any given school could be very different at some grade levels between the start and the conclusion of the Spring Semester. This is a potential concern that could be at least partially addressed via analyses of existing NYTS data that compares tobacco use prevalence, while introducing appropriate controls, based on the date that questionnaires are administered to students. Indeed, such analyses could be conducted with NYTS data pooled across multiple years, which might ensure adequate statistical power was available.*

Response: These analyses have not been undertaken yet. OSH still concurs that these analyses could be informative but considers that the impact could be limited due to the short time frame in which the NYTS is actually fielded. Furthermore, OSH believes that tobacco use behaviors and patterns are likely to be more similar across this short time frame in the spring semester, compared to if the NYTS was conducted in the fall.

Recommendation: Consider using substitute schools when the originally sampled school is not able to participate but has students who should validly be included in the NYTS. Substitute schools can provide an effective means of reducing the bias due to school nonresponse, provided that each substitute school is quite closely matched to the school it's replacing with regard to characteristics that are related to the original school's selection.

Response: This recommendation was determined to be unfeasible, due to the complexity of introducing a sampling with replacement strategy into the current sampling procedure. Given that refusals occur during the recruitment phase, after the sample is drawn, a true sampling with replacement (i.e., replacement is selected before next unit is drawn) cannot be implemented.

Recommendation: Consider oversampling American Indian/Alaskan Native (AI/AN) students to allow for subgroup reporting for these students. Two potential approaches include: 1) including BIE students in the sample; and 2) oversampling high proportion American Indian schools in certain select states (i.e., Arizona, Minnesota, North Carolina, Oregon, Utah, Washington, and Wisconsin).

Response: OSH still concurs with this recommendation, but it has not been implemented, since this would involve both an increase in the sample size and increased funding to implement. OSH can confer with its contractor about the feasibility of doing an AI/AN oversample for the 2022 or 2023 NYTS.

RECRUITMENT

Recommendation: Perhaps focus groups with administrators and separately for students could elucidate possible means of improving response rates.

Response: OSH still concurs with this recommendation, but it has not been implemented due to funding constraints.

Recommendation: Utilization of YRBS-like state level contacts in recruitment may be a potential opportunity to provide improved recruitment.

Response: OSH continues to consider this option, but implementation would depend on ability to fund states for this activity. However, the NYTS contractor, ICF, has made other improvements to their recruitment procedures at the district and school levels to increase the likelihood of participation. Examples include increasing in-person recruitment visits to districts and schools (see below) and if possible, offering January administration dates to minimize mid- and late-semester conflicts for the schools. Given competing surveys and other research activities in schools, there has been an increasing trend in the requirement of district research proposals at the national level. ICF found it necessary to proactively complete these proposals ahead of the official recruitment activities, given that many of these proposals have deadlines prior to the

beginning of the school year. For the 2019 NYTS cycle, for example, 39 districts, representing 70 schools (22% of all schools) required research proposals, up from only 18 proposals in 2018. ICF has also increased their in-person recruitment efforts. These in-person recruitment visits build upon the work of the recruitment staff. In 2019, data collection field staff were involved in roughly 100 in-person recruitment visits during the data collection window. Following in-person recruitment visits, 22 districts (representing 41% of visited districts) and 39 schools (representing 63% of visited schools) agreed to participate in the NYTS. ICF plans to continue proactively completing district research proposals, as required, and building up the in-person recruitment efforts in the future.

Recommendation: *Consider developing a best practices guide (BPG) for schools to use as they ready their staff and students for NYTS data collection. The BPG goals are to obtain teacher buy-in and to motivate students to do their best. The NAEP program has developed such a guide for 12th grade schools that includes videos to introduce NAEP to teachers and students, PowerPoint presentations to share at faculty and student meetings, and resources schools can customize to share information about NAEP. Also, the NAEP BPG contains successful strategies for increasing student participation (e.g., ways to recognize and thank students, assembly announcements, school newsletter information, school newspaper article, etc.).*

Response: OSH still concurs with this recommendation, but ability to implement it is limited by staff and funding constraints. ICF, the data collection contractor for NYTS, has a brief protocol – one possibility is to investigate whether this could be expanded or enhanced.

Recommendation: *NYTS should explore shifting some or all of its field staff training (whether it be pre-survey work, actual data collection, or close out activities) to a distance learning model. The NAEP program has successfully implemented distance learning over the recent past with significant cost savings to the program. One example: converting one day of in-person field staff training into self-paced, multimedia training modules with follow-up phone conversations with supervisory field staff.*

Response: OSH considers the current in-person training program effective. With the transition to electronic survey administration starting in 2019, in-person training has been imperative due to differences from administering a paper-and-pencil survey. The 3-day in-person training combines a mix of lecture, role plays, and hands on practice. It is very important that interviewers have the opportunity for hands-on practice and interaction with the tablets themselves to learn how to sync the tablets, upload data to the secure server, and generally troubleshoot any other issues with the equipment. Additionally, this in-person training focuses on “finding your voice”, in which interviewers participate in role play activities to become comfortable with the data collection procedures and scenarios. The in-person training also allows the NYTS contractor (ICF) to evaluate the suitability and training of the field staff; in 2019, one hired data collector was determined not to be a good fit for this project and was subsequently let go and replaced. It would be difficult to replicate these activities and experiences in a distance learning model. However, after the electronic data collection procedures are well established, it may be possible in the future to investigate the feasibility of distance learning for training data

collectors, consulting with NAEP about their program.

Recommendation: *The NYTS should consider developing and having all field staff fill-out a session debriefing form that collects information such as attendance problems, student behavior, teacher and student reactions, adequacy of seating and space. This information can help the NYTS learn more about the logistical and qualitative factors that may impact data collection and can be used to enhance procedures for future data collections. Additionally, a school coordinator debriefing interview can augment the field staff session debriefing form.*

Response: Weekly debriefings with data collectors were done for the first several weeks that the 2019 NYTS was in the field. Additionally, following the 2019 NYTS fielding, the NYTS contractor held a final debrief with data collector staff in order to gain insights and impressions about the electronic fielding, overall. These debriefings were informative and are tentatively planned for the 2020 NYTS.

WEIGHTING

Recommendation: *If possible, findings from the annual non-response bias studies done as part of NYTS should be summarized and included as part of its annual methodological report. In terms of the non-response bias analyses, it would be very useful to examine the degree to which school drop-out rates are associated with school response rates in the NYTS.*

Response: Traditionally, information related to the school location (e.g., urban, non-urban) and student population that is investigated in the non-response analysis is not released to the public, due to concerns with confidentiality and privacy of the school and student respondents. However, the feasibility of providing a summary of the non-response bias study into the public-use NYTS methodology report is being investigated.

Recommendation: *The NYTS should consider providing preliminary weights for pilot and field tests for two main reasons: 1) to be able to review testing procedures, drafting analyses, and getting an early look at general results prior to the availability of the final weights (which allow for the reporting of unbiased results); and 2) the psychometric evaluation of pilot survey items as part of the process of determining which items should be included in the final survey. The integration of a preliminary weighting process may play a role in helping NYTS achieve reporting within six months from the end of data collection.*

Response: Transitioning to electronic administration of the NYTS has reduced the time needed to produce a final weighted analytic dataset. Based on the 2019 NYTS, the general expectation is that an analytic dataset can be produced within approximately 2 months after the end of data collection. The schedule of the release of public use data will depend on agency needs and priorities, but 6 months after end of data collection is feasible. OSH considers there to be less need for preliminary weights than in the past and thus, has not implemented this recommendation.

B.6 INDIVIDUALS CONSULTED ON STATISTICAL ASPECTS AND INDIVIDUALS COLLECTING AND/OR ANALYZING DATA

Statistical Review

Statistical aspects of the study have been reviewed by the individuals listed below.

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Agency Responsibility

Within the agency, the following individuals will be responsible for receiving and approving contract deliverables and for having primary responsibility for data analysis:

Contract Deliverables

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Responsibility for Data Collection

The representatives of the contractor, ICF International, Inc., responsible for conducting the planned data collection are Alice Roberts (Project Director), Kate Flint, and Jill Trott, and others as designated by the contractor

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