

Part B: COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS

1. Describe the potential respondent universe and any sampling or other respondent selection methods to be used.

The purpose of the National Survey of the Use of Booster Seats (NSUBS) is to gather information on appropriate restraint use for all child occupants, in particular, the use of booster seats among children ages 4-7. The survey will visit sampled gas stations, recreation centers, day care centers, and seven specific fast food restaurant chains (McDonald's, Taco Bell, Burger King, Wendy's, Kentucky Fried Chicken, Dairy Queen, and Sonic). Data collectors will approach as many vehicles as possible that appear to have at least one child occupant under the age of 13 in order to allow for data collector observation of restraint use for all occupants, and subsequent interviews to determine age, height, weight, race, and ethnicity for child occupants.

The potential respondent universe consists of all motorists with child passengers (age 12 and under), who frequent gas stations, recreation centers, day care centers, and seven specific fast food restaurants (not located in shopping centers).

These site types (gas stations, recreation centers, day care centers, and fast food restaurants (those not located in shopping centers)) were chosen because they are frequented by motorists transporting children, and businesses' parking lots are usually small enough that data collectors can likely approach vehicles as they are parking, before child restraints have been unfastened and occupants have entered nearby buildings.

Data collectors will approach as many motorists as possible who appear to have at least one child under the age of 13 in their vehicle for possible participation in the survey.

2. Describe the collection of information procedures.

Sampling Frame

The sample design is a three-stage design, where geographic areas are sampled as primary sampling units (PSUs), and data collection sites are selected from sampled PSUs at the second-stage, and lastly, vehicles with child passengers are observed from the respondent sites.

PSU Formation and Measure of Size (MOS)

The county is the building block of NSUBS as it is one of the most recognizable geographic units with rich auxiliary information including the 2012 Census population data of various age groups. PSUs were formed with two basic principles: (1) PSUs should be geographically contiguous and compact so that the travel cost of the data collectors is minimized; (2) yet they should be large enough in terms of the MOS so that data collection efforts are not wasted due to small sample yield.

Considering that NSUBS covers children of ages 0-12, the size of this age group of children could be used as the MOS for selection of NSUBS PSUs by the probability-proportional-to-size (PPS) method. However, we chose to use the number of children of ages 0-7 as the MOS because this age group is more inclusive of children of booster seat age, and there are nearly straight line linear relationships with nearly perfect correlations among the MOSs based on different age groups.

In forming new PSUs, Westat first tried to use 2,000 children of ages 0-7 as the minimum PSU MOS, but it was found to not have a large enough number of eligible data collection sites in each PSU. So, the MOS was increased to 3,000. Furthermore, a population of at least 4,000 children was sought insofar as the preferred PSU geographic size would allow.

PSUs were formed in the continental United States respecting State boundaries to stratify PSUs by census region and by State's status of child restraint use laws. This PSU formation process resulted in 1,601 PSUs that cover the continental United States, excluding Alaska and Hawaii. The PSUs

consist of 1.94 counties on average and have an average MOS of 20,044 children of ages 0-7.

PSU Stratification

PSUs are stratified by census region and the status of the specific State’s child restraint use laws. All States and the District of Columbia (DC) have some child restraint use laws, but a restriction was imposed that the law should cover children of ages 0-7 at the minimum. There are 30 States and DC that satisfy this restriction (See Table 1). This resulted in 8 strata, with two strata in each region by the law status.

Table 1 Stratification of PSUs for NSUBS

Region	Status of Child Restraint Law for Age < 8	Stratum Number	States and DC Falling in Stratum
Northeast	Yes	1	MA, ME, NJ, NY, PA, RI, VT
	No	2	CT, NH
Midwest	Yes	3	IL, IN, KS, MI, MN, MO, OH, WI
	No	4	IA, ND, NE, SD
South	Yes	5	DC, DE, GA, MD, NC, TN, TX, VA, WV
	No	6	AL, AR, FL, KY, LA, MS, OK, SC
West	Yes	7	AZ, CA, CO, OR, UT, WA, WY
	No	8	ID, MT, NM, NV

PSU Sample Size and Allocation

NSUBS includes 30 PSUs with proportional allocation to the total MOS, which called for selecting 5, 7, 11, and 7 PSUs from the Northeast, Midwest, South, and West regions, respectively.

Secondary Sampling Units and Sample Selection

Data are collected at four data collection site types (daycare centers, recreation centers, fast food restaurants, and gas stations) on the basis that using these four site types to conduct the survey does not cause a significant bias. Seven fast food restaurant chains (McDonald’s, Burger King, Wendy’s, Taco Bell, Kentucky Fried Chicken, Sonic and Dairy Queen) were selected because they are commonly found nationwide. Site selection considerations

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are that the businesses typically have a good number of customers with children and dedicated parking lots for data collection.

The recreation centers were combined with daycare centers into one site stratum to avoid sampling and weighting issues due to the small size of the recreation center site frame as it accounts for only 6 percent of the total sites.

The goal is to obtain 10 respondent sites per PSU (300 sites overall). Based on the site response rate in the 2013 NSUBS, 524 sites were chosen in order to obtain 300 respondent sites.

Site frames were developed for the sampled PSUs, and a site sample was selected from each type of sites separately with a predetermined sampling rate. The site type of recreation centers has the smallest population size (about 6% of all site frame size, see Table 2), yet it yields the highest number of child passengers per site. We allocated site selection proportionately to the sizes of site frames for each sampled PSU.

Table 2 Site frame and sample distribution for NSUBS

Site type	Frame	Percent distribution	Site sample	Percent distribution	Resp rate	Resp sample size	Resp percent
Daycare	8,154	39.8	247	47.1	40.0	98.8	33.0
Recreation	1,294	6.3	53	10.1	40.0	21.2	7.1
Fast Food	3,324	16.2	63	12.0	80.0	50.4	16.8
Gas Station	7,738	37.7	161	30.7	80.0	128.8	43.0
Total	20,510	100.0	524	100.0	57.1	299.2	100.0

In addition, the selection of the site sample systematically used the site type and the zip code as the sort variables disregarding the site boundaries. To address the differential response rates in systematic selection, we used the PPS method. The MOS is defined by the inverse of the response rate for the most recent NSUBS deployments; that is, 2.5 for daycare/recreation centers and 1.25 for fast food restaurants and gas stations

The expected distribution of the respondents sample closely follows the frame distribution. We also selected a reserve sample of 211 sites (40% of the regular sample) to prepare for unexpectedly low response rates. The main sample and reserved sample (524 + 211) were selected at the same time, by systematic sampling within each PSU after sorting the sites by zip code and site type. The reserved sample (211) was randomly selected from the 735 selected sites within each PSU using the same sorting order which was created in the first selection. The 40% NSUBS reserve sample was designed to protect against response rates that were up to 70% less than expected, which was felt to be a sufficient level of protection at that time. The sample for NSUBS includes businesses which are subject to closings over time. Thus as the frame ages it is more likely that sampled businesses from the frame may have closed, and necessitate the need for a greater percentage of reserve sample in order to meet the sampling design requirements for fielding the survey. The 40% reserve was selected by looking at previous cycles of the survey as well as considering the state of the economy at the time which might influence the rate of business closings. The 40% of the regular sample was applied at the PSU/site level and rounded. The sum of rounded numbers across PSU and site type is 211.

Data Collection Schedule

NSUBS data collection protocol calls for two-hour observation periods of restraint use for all passenger vehicles with child occupants who enter selected data collection locations. Once the vehicles stop, the drivers are approached for short interviews. Because of the requirement for observations, data are collected only during daylight hours, typically defined as between 7 a.m. and 6 p.m.

Trained data collectors approach passenger vehicles appearing to have child occupants under the age of 13; observe the restraint use of up to nine occupants in the first three rows of seats; and conduct interviews to obtain the race and ethnicity of all occupants; the age of the driver; and the heights, weights, and ages of child occupants appearing to be under age 13. The approximate ages of other occupants (expressed as an age range, such

as 16-24 years), and the genders of all occupants are subjectively assessed by the data collectors.

Per Office of Management and Budget (OMB) standards, the data on race/ethnicity in NSUBS are collected via self-reporting. To capture restraint use before children unfasten the restraints, data collectors observe restraint use prior to or just as the vehicles come to a stop, except at fast food drive-through lanes. In that case, restraint use is observed prior to the vehicles reaching the drive-through window.

To reach as wide an audience as possible, NSUBS uses some Spanish-speaking data collectors in PSUs with known populations of Spanish-speaking residents.

Data are recorded on paper forms that have been assembled into booklets. These booklets are bar-coded so that they can be identified by PSU. The booklets are shipped to Westat each evening and are examined for completeness the following day. The data are double-blind entered into a database, and any out-of-range responses are examined by project technical staff.

Information Collected

If an adult in the approached vehicle agrees to take part in the survey, data collectors will ask the adult for the following information:

- Children's ages
- Children's heights
- Children's weights
- Children's races and ethnicities
- Adults' races and ethnicities
- Driver's age

In addition, data collectors will collect the following information by observation only, and not by interview:

- Date
- Time
- Survey site
- Site type (e.g. gas station, fast food restaurant, etc.)
- Vehicle type
- Seating position of each occupant

- Restraint use for each occupant, specifying the types of child restraints used
- Gender of each occupant
- Estimated age range for adult occupants other than driver

Data Collection Form

The data collection form used by the survey is shown as Appendix 4.

Data collectors for this survey will fill out the cover of the form (site type, weather, etc.) when they arrive at each data collection site. Data collectors will then fill out one page of the form for each observed vehicle, even if the occupants refuse to agree to participate in the survey. This is because the observation data are retained and used, even in the absence of related interview data.

On page 1 of the form, the PSU and site numbers are identification numbers for the survey site assigned by the project staff. The “booklet” consists of the entire package of forms filled out by the data collector on a given day. For information on “misses and refusals,” please see the explanation below.

Data collectors will recite the text on the cover of the booklet, “Hi, my name is ___ ...” to all potential respondents to ensure them that their participation is voluntary and that no personal identifying information will be collected.

For motorists who agree to participate, data collectors will interview an adult motorist for answers to the questions on the form, and fill out the form’s information on restraint use based on observing the children in the vehicle.

Information on the vehicle type and on the age category, gender, and restraint use of the adult occupants will be filled out by the data collector based on observation.

Data collectors will keep track of the number of vehicles that they missed and the number of vehicles whose occupants declined to participate in the survey, and who refused due to language barriers, and record these counts on the booklet cover when they leave the site.

Data collectors receive extensive training in protocols for interviewing motorists and observing restraint use in a manner that is professional and as unobtrusive as possible.

Statistical Editing, Imputation, Estimation, and Variance Estimation

Simple range edits will be performed on the data to improve data quality. For instance, the data will be edited to ensure that children's ages fall between 0 and 12 years. Data that fall out of range will be treated as missing.

Restraint use will be estimated by the following:

Base Weighting

To calculate the site level base weight, we need two probabilities, the PSU selection probability and the site selection probability within PSU.

Alternatively, we can use the PSU base weight, which is the inverse of the PSU selection probability, and the within-PSU site base weight, which is the inverse of the within-PSU site selection probability.

Site Selection Probability and Base Weight

The within-PSU site selection probability was the desired unconditional site selection probability. Therefore, the within-PSU site base weight would be the inverse of this probability. Under the Keyfitz method, the sample size is not fixed but random, and the expected sample size is not necessarily the same as the actual sample size.

Let $f_{j|pi}$ be the 2015 within PSU site selection probability for site j conditional on selected PSU i in stratum h , and $w_{j|pi}$ be the within-PSU site base weight, which is defined by:

$$w_{j|pi} = \frac{1}{f_{j|pi}} .$$

Then the overall site base weight for site hij is the product of the PSU base weight (W_{hi}) and the within-PSU site base weight ($W_{j|hi}$) as follows:

$$W_{hij} = W_{hi} W_{j|hi} .$$

The base *weight* is defined for all sites selected in the site sample. This weight is called the base weight because it is the basis of deriving the final weight used in estimation after applying a series of adjustments. Starting with the base weight, various adjustments are applied in sequential manner to obtain an adjusted weight each time, to which the next round of adjustment is applied. This is the topic of the next section.

Site Level Nonresponse Adjustment

The NSUBS employs standard unit nonresponse adjustment; that is, applying the ratio of total weighted sample cases to total weighted respondent cases within adjustment cells. The first type of nonresponse is defined for eligible sites, as an eligible site is considered “respondent” if it participated in the survey and the observation duration is not less than 60 minutes.

For the site level adjustment, we define the nonresponse adjustment cells by the site type within PSUs – site type 5 (day care and recreation centers at the same location) is combined with day care center type. There are 120 (= 4 site types times 30 PSUs) possible cells, but some cells may be too small or the adjustment factors are too large. Those situations are resolved by combining cells, and the final number of cells (denoted by L_s , which depends on each survey year) is usually smaller than 120. We also denote the nonresponse adjustment cells for site level adjustment as

$$C_a^{(S)} \text{ for } 1 \leq a \leq L_s$$

where the superscript (S) symbolizes the “site” sample. Each cell can consist of up to four kinds of sites: (1) eligible and participated with an observation duration that lasted more than 60 minutes (responded); (2) eligible but did not participate or had an observation duration that did not

last 60 minutes (not responded); (3) ineligible; and (4) unknown eligibility. These categories are denoted, respectively, by $C_{1a}^{(s)}$, $C_{2a}^{(s)}$, $C_{3a}^{(s)}$, and $C_{4a}^{(s)}$. Some of them may be empty if there is no such kind of sites in the cell. In NSUBS, the eligibility of all sample sites is usually known, so $C_{4a}^{(s)}$ are usually empty for all $1 \leq a \leq L_s$. To ease the presentation of notation, the stratum index will be dropped (h) hereafter unless specified.

The basic philosophy of the adjustment is to make the participating sites represent the eligible nonparticipating sites. If there are any sites with unknown eligibility (i.e., $C_{4a}^{(s)}$ is non-empty for some a), an estimate is used to portion the number of sites with unknown eligibility to be included in the group of eligible nonparticipating sites. Applying this principle, we define the site level nonresponse adjustment factor for cell $C_a^{(s)}$ as:

$$A_a^{(s)} = \frac{\sum_{ij \in C_{1a}^{(s)}} w_{ij} + \sum_{\bar{ij} \in C_{2a}^{(s)}} w_{\bar{ij}} + e_a}{\sum_{ij \in C_{1a}^{(s)}} w_{ij}} \quad \text{for } 1 \leq a \leq L_s$$

where w_{ij} is the site base weight given in (F.1), e_a is an estimated number of eligible sites in $C_a^{(s)}$ given by

$$e_a = \sum_{ij \in C_{4a}^{(s)}} w_{ij} \frac{\sum_{ij \in C_{1a}^{(s)}} w_{ij} + \sum_{\bar{ij} \in C_{2a}^{(s)}} w_{\bar{ij}}}{\sum_{ij \in C_{1a}^{(s)}} w_{ij} + \sum_{\bar{ij} \in C_{2a}^{(s)}} w_{\bar{ij}} + \sum_{\bar{ij} \in C_{3a}^{(s)}} w_{\bar{ij}}}$$

Note that summations in the above formulae are over all the relevant sampling strata although stratum index h is dropped.

If $ij \in C_{1a}^{(s)}$ (i.e., site ij is a respondent in nonresponse adjustment cell $C_{1a}^{(s)}$), then the site level nonresponse adjusted weight for site ij is given by

$$A_a^{(s)} w_{ij}$$

This adjusted weight needs another site level adjustment: adjustment for variation in duration of data collection. The data collectors may have for a

variety of reasons collected data at a given site for a period of time that is longer or shorter than the scheduled 2 hours. The duration adjusted weight for respondent site ij in nonresponse adjustment cell $C_{1a}^{(S)}$ is defined by:

$$w_{ij}^{(S)} = \frac{120}{D_{ij}} A_a^{(S)} w_{ij}$$

where D_{ij} is the time in minutes for which the data collectors collected data from site ij . Note that starting in 2015, a site with $D_{ij} < 60$ is treated as nonrespondent and included in $C_{2a}^{(S)}$.

Vehicle Level Nonresponse Adjustment

The same method of unit level nonresponse adjustment is made for vehicle nonresponse from the participating sites. A vehicle is a response if it is observed either with or without an interview with the driver. The nonresponse (non-observation) adjustment cells are the participating sites with some observed vehicles, which are denoted as $C_a^{(V)}$ with a being the index for the participating sites. Each cell can be partitioned into two groups: respondent group (denoted as $C_{1a}^{(V)}$) and nonrespondent group (denoted as $C_{2a}^{(V)}$). Each respondent vehicle k in site ij in $C_a^{(V)}$ are given the vehicle level nonresponse adjusted weight defined as follows:

$$w_{ijk}^{(V)} = A_a^{(V)} w_{ij}^{(S)}$$

where

$$A_a^{(V)} = \frac{\sum_{ij \in C_{1a}^{(V)}} w_{ij}^{(S)} + \sum_{ij \in C_{2a}^{(V)}} w_{ij}^{(S)}}{\sum_{ij \in C_a^{(V)}} w_{ij}^{(S)}}$$

This same adjusted weight is given to all occupants in the vehicle and is sometimes called the observation weight. Since not all observed occupants are interviewed, another nonresponse adjustment for interviewed occupants is needed. This topic is discussed in the following section. Because restraint use estimates for the observed child occupants are produced separately from other interviewed occupants, two sets of interview weights are developed, one for the interviewed child occupants and the other for interviewed adult occupants. Note that a child occupant is defined as an

occupant under age 13 and an adult occupant is an occupant of age 13 or older.

Child Interview Nonresponse Adjustment

Nonresponse adjustment for child occupant interview nonresponse is also similarly done using nonresponse adjustment cells, which are defined by site type within PSU, resulting in 120 possible cells. Note that a child is treated as interviewed only if the child's age is obtained. After elimination of small cells or cells with too large adjustment factors through collapsing, the final adjustment cells are defined, and the number of the final adjustment cells is denoted by L_C , which depends on each survey year. They are denoted as $C_a^{(I)}$ for $1 \leq a \leq L_C$. All interviewed children in vehicle ijk belonging to $C_a^{(I)}$ are given the nonresponse adjusted weight defined by:

$$w_{ijk}^{(I)} = A_a^{(I)} w_{ijk}^{(V)} \quad \text{for } 1 \leq a \leq L_C,$$

where

$$A_a^{(I)} = \frac{\sum_{ijk \in C_{1a}^{(I)}} w_{ijk}^{(V)} + \sum_{ijk \in C_{2a}^{(I)}} w_{ijk}^{(V)}}{\sum_{ijk \in C_{1a}^{(I)}} w_{ijk}^{(V)}},$$

and $C_{1a}^{(I)}$ is the set of interviewed children and $C_{2a}^{(I)}$ is the set of observed but not interviewed children.

Adult Occupant Interview Nonresponse Adjustment

Nonresponse adjustment for adult occupant interview nonresponse was not done prior to 2008, but beginning in 2008, it was necessary to produce restraint use estimates for adult occupants by race/ethnicity, which is available only for interviewed occupants. The method is exactly the same as for child interview nonresponse adjustment except the occupant interview status is defined differently - an adult occupant has an interview status if the interview at the vehicle level is complete or partially complete. Let there be L_A nonresponse adjustment cells formed, which are denoted as $C_a^{(A)}$ for

$1 \leq a \leq L_A$. All interviewed adult occupants in vehicle ijk , which belongs to $C_a^{(A)}$ are given the nonresponse adjusted weight defined by:

$$w_{ijk}^{(A)} = A_a^{(A)} w_{ijk}^{(V)} \quad \text{for } 1 \leq a \leq L_A,$$

where

$$A_a^{(A)} = \frac{\sum_{ijk \in C_{1a}^{(A)}} w_{ijk}^{(V)} + \sum_{ijk \in C_{2a}^{(A)}} w_{ijk}^{(V)}}{\sum_{ijk \in C_{1a}^{(A)}} w_{ijk}^{(V)}},$$

and $C_{1a}^{(A)}$ is the set of interviewed adult occupants and $C_{2a}^{(A)}$ is the set of observed but not interviewed adult occupants.

Variance Estimation

Variance estimates will be computed using WesVar, reflecting the jackknife variance estimation method.

3. Describe the methods used to maximize response rates and to deal with issues of nonresponse.

The refusal rate by year is described in the following table:

Table 3 Interview Refusal Rate by Drivers by Survey year

YEAR	TOTAL NUMBER OF OBSERVED VEHICLES	TOTAL NUMBER OF INTERVIEWS	TOTAL NUMBER OF REFUSAL	REFUSAL RATE
2006	3,489	2,920	548	15.7
2007	4,828	4,199	181	3.7
2008	6,204	4,899	224	3.6
2009	6,033	4,601	286	4.7
2011	6,350	5,191	300	4.7
2013	7,229	6,070	288	4.0
2015	6,060	5,352	243	4.0
2017	7,490	6,396	460	6.1

We do not expect many missing values in the observed portion of the data (both the site information on the cover of the data collection booklet and the observed motorist data) because the data collectors will be well trained and they should have adequate time to record site information and restraint use.

As can be seen in Table 3 above, the interview refusal rate for drivers is on average 5.1 for the last five years of the survey.

Imputation

For occupant variables including a vehicle variable, Westat's imputation software, AutoImpute, is used. AutoImpute is a convenient tool since it can perform imputation for categorical and continuous variables at the same time. It uses regression modeling to create imputation classes and carries out hot-deck imputation using the created imputation classes through regression modeling. One of its strengths is its ability to use all available variables as predictors in the regression modeling so that it can maintain, in the imputed data, the correlation structure of the data set among variables used in imputation. Since it utilizes hot-deck imputation, AutoImpute performs donor imputation, where for a missing value, a donor is randomly picked from the non-missing cases in the imputation class to which the missing case belongs, and the donor value is used to impute the missing value. This imputation procedure is applied to all variables with missing values, except for a few variables that are not imputed (mostly site characteristics plus observer name, number of refusals, number of missed vehicle, seating position) and a few variables imputed as special cases (site identifiers and administrative data).

Data Quality

Data collectors for the NSUBS undergo extensive training in order to minimize errors that could arise from their categorizing or recording data incorrectly.

NHTSA does not believe that there is reliable information with which to adjust the survey results to account for inaccurate responses given by motorists, motorists who choose not to participate in the survey, motorists who do not frequent the site types, or motorists who frequent the site types outside of the observation period. The Agency's published report will clearly state that the results are based on motorists who visited the site types and voluntarily chose to participate in the survey.

COVID-19 Impacts

Looking through NHTSA's documentation from Westat anticipated lower eligibility and response rates and made the following modifications for the 2021 NSUBS to offset COVID-19 impacts:

Westat attempts to achieve a responding sample size and estimated precision similar to the previous NSUBS and includes sites that overlap with the previous NSUBS.

Westat set aside reserve samples for all site types and allowed for more time for activating the reserve samples if there was higher refusal rate or more ineligible sites.

Depending on the success of the first release group, Westat could release one or more reserve samples until the desired responding sample sizes were achieved.

Project staff updated site frames by comparing Esri Points of Interest listing for gas stations and fast-food restaurants. Once the site frame was updated, Westat determined the sample allocation across site types and across and within PSUs using proportional allocation to maintain the balance of site types to conform to the study design with the following modifications:

The sample size must be less than the population size.

Westat imposed a maximum number of five daycare centers per PSU.

Westat increased the recreation center sample on a one-on-one basis when the daycare center cap was imposed.

Note that the next NSUBS is scheduled for 2023. We do not know what impacts COVID-19 will have at that time.

In addition, Westat answered specific questions about COVID-19 and its impact on the survey:

Before answering more specific questions, a few notes and caveats are in order when speaking of numbers, counts, or totals – overall or by site type – and any corresponding changes across time, given the NSUBS design. First, any estimates of numbers, counts, or totals should be weighted – this is especially important here because the allocation of sites across site types can be different between NSUBS cycles. The NSUBS 2021 site allocation is somewhat different from the NSUBS 2019 site allocation, with the 2021 allocation being closer to a proportional allocation. Second, NSUBS is designed to estimate restraint use rates, and changes in those rates across time, rather than totals etc., as the latter is elusive and less meaningful

given the restrictive list of NSUBS site types, which are necessary for study efficiency.

For restaurant sites: Are more people using drive-thru rather than parking and getting out of their car?

Our data collectors can collect data at the drive-thru lanes if the manager allows. However, we do not record if vehicle observations/interviews are collected from drive-thru vehicles or from vehicles where passengers entered the restaurant. So, there is no data to determine if more people are using the drive-thru. I hesitate to speculate as it would only be based on anecdotal information.

When working the drive-thru, our data collectors can obtain observations and walk alongside the vehicle to complete the interview portion as the vehicle moves up the queue as long as the managers grant permission.

Will this affect the number of possible interviews, compared to what was possible pre-COVID?

Is there a potential need to increase the number of fast food sites to account for this?

We were concerned about the overall impact of COVID on participation rates for sampled businesses and respondents in 2021. So, we oversampled the number of businesses we attempted to recruit to account for the potential increase in refusals from business managers due to COVID.

Looking at observations by site type, the number of vehicles observed at fast food sites has actually increased by 672 vehicles, or 27%. The daycare and rec center sites are where we see the decrease in observations. There is an overall decrease of about 6% (356 vehicles), but this is due to relatively large decreases in vehicles observed at daycares and rec centers. (Table 4)

Table 4 Comparison of Observations by Site Type for 2019 and 2021
NSUBS

Site Type	2019 Vehicles	2021 Vehicles	Difference	Pct Change
Daycare	3,341	2,737	-604	-18%
Rec Center	776	487	-289	-37%
Fast Food	528	672	144	27%
Gas Station	960	1,353	393	41%
Overall	5,605	5,249	-356	-6%

The shift in observed vehicles between site types is not a concern, and may actually be positive for NSUBS, as the children observed at fast food and gas station sites tend to be most representative of all children traveling in vehicles in the U.S.

Are there less families going to recreation centers and day care centers, while there is no vaccination yet available for children in

the desired age groups? (NOTE: this question was sent before the emergency approval of the COVID-19 vaccine for children 5 and up.)

As seen in the table above (Table 4), observation volume has decreased for both daycares and rec centers. We also had more difficulty obtaining consent from director/managers of these facilities to work on their premise. Finally, due to the award date of the NSUBS 2021 contract, we were unable to fully refresh the frames for daycares and rec centers. Anecdotally, we know that many daycare centers have closed due to COVID, and we were unable to proactively screen for this with a somewhat outdated frame. We also had limited time for recruitment of daycares and rec centers.

With sufficient time built into future contracts to refresh the frames and allow for robust recruitment procedures, as well as knowing that a vaccine is now available for children ages 5 and older, we are confident that we can reverse much of this decline in the next round of NSUBS.

4. Describe any tests of procedures or methods to be undertaken.

The National Survey of the Use of Booster Seats was designed in 2006. A Pilot Test was conducted at that time, and the results of that test were incorporated into the revised survey procedures. Subsequently, NSUBS has been conducted ten times (through 2021). In 2015, the survey was redesigned and expanded from 16 PSUs to 30 PSUs (as is described above) to reduce the variance and enhance the statistical precision of the estimates. No changes were made to the data collection protocol because of the 2015 sample redesign.

5. Provide the name and telephone number of individuals consulted on statistical aspects of the design and the name of the Agency unit, contractor(s), grantee(s), or other person(s) who will actually collect and/or analyze the information for the Agency.

This survey was designed and will be conducted under Federal Contract with Westat, Inc. The Assistant Contracting Officer's Representative is Lacey L. Boyle who can be reached at (202) 366-7468. The program manager at Westat, Inc. is Dr. Doreen De Leonardis who can be reached at (301) 315-5963.