Supporting Statement B for Request for Clearance:
NATIONAL AMBULATORY MEDICAL CARE SURVEY

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1. Respondent Universe and Sampling Methods

The National Ambulatory Medical Care Survey (NAMCS) basic statistical design and data collection methods were updated in 2012 and will continue for the 2019-2021 NAMCS. The projected sample size for 2019-2021 is 3,000 traditional office-based physicians and 312 CHC providers annually, and 0 MU physicians in 2019, 3,000 MU physicians in 2020, and 3,000 MU physicians in 2021. Census region and Census division estimates will be produced.

Respondent Universe

There are two major components of the targeted NAMCS universe. The first component consists of non-federally employed physicians (excluding those in the specialties of anesthesiology, radiology, and pathology) practicing in the United States who were classified by the American Medical Association (AMA) and the American Osteopathic Association (AOA) as being in "office-based, patient care" and those classified by AMA as being "hospital employed" (as a proxy for hospital owned practices). There were approximately 623,629 physicians in the sampling frame for this first component of the 2018 NAMCS and with 632,206 physicians in 2019. The second component consists of physicians (both MDs and DOs) and advanced practice providers (i.e., nurse practitioners, physician assistants, and nurse mid-wives) practicing at community health centers (CHCs).

Unlike physicians in the office-based NAMCS, physicians and advanced practice providers working at CHCs are not selected at the first stage because a complete sampling frame of these providers is unavailable. We include three different types of CHCs in the sample: (1) CHCs that receive grant funds from the federal government through Section 330 of the Public Health Service Act; (2) look-alike CHCs who meet all the requirements to receive 330 grant funding, but do not actually receive a grant; and (3) Urban Indian Federally Qualified Health Centers. The list of federally funded CHCs (330 grant) and look-alike CHCs is provided by the Health Resources and Services Administration (HRSA).

Office-based Physicians

In each NAMCS survey year, there is a fresh core sample of 3,000 traditional office-based physicians that NCHS commits to fund at a minimum. Additionally, each year a number of office-based physicians may be added to the core sample, if funds become available. Supplementary funds were not available for 2019, therefore an expansion sample will not be fielded. Thus, for 2019-2021, the proposed annualized core sample size for office-based physicians is 3,000. Estimates can be made separately for the four Census regions, nine Census divisions, and the United States as a whole.

A new method for drawing additional physicians into the survey based on meaningful use (MU) was approved for the 2016-2018 NAMCS survey years. This method involves: (1) identifying physicians who registered their intent to participate in NAMCS in order to attest to fulfilling the MU public health reporting objective, (2) matching them with the most current AMA and AOA physician lists used for sampling, and (3) selecting an MU sample from this matched list that is mutually exclusive from the traditional NAMCS sample. As of January 2018, there were over 159,000 individuals registered in the National Health Care Surveys Registry (note this includes physicians and other care providers such as physician assistants, and nurse practitioners). All parties who are part of the National Health Care Surveys Registry have (by registering) agreed to submit electronic health record (EHR) data when asked, and in return will receive credit towards meeting the public health reporting objectives of the Medicare Quality Payment Program – specifically the Merit-based Incentive Payment System (MIPS) – final rule and the Centers for Medicaid and Medicare Services EHR incentives program final rule on modified Stage 2 and Stage 3 (https://www.cms.gov/Medicare/Quality-Payment-Program/Quality-Payment-Program.html).

As a result of this matching, the sampling frame for each of the 2020 and 2021 cycles will have two groups: one consisting of physicians who have not registered for the National Health Care Surveys Registry, and the other group of physicians who have registered. A sample of 3,000 physicians will be drawn from the group of non-registrants, and a sample of 3,000 physicians will also be drawn from the group of registrants. For the 3,000 sampled physicians who are not registered in the National Health Care Surveys Registry, visit data will be collected via abstraction from medical records, identical to how NAMCS visit data have been traditionally collected. For the 3,000 sampled physicians who are registered, NAMCS visit data will be collected through submission of EHRs by the physician or the physician's organization. An outside contractor will handle data collection from these physicians, and we will continue to evaluate the success of obtaining physician participation using this methodology.

Each of these samples is a stratified list sample of physicians, with strata defined by (1) MU registration status (is, or is not, registered) for years 2020 and 2021, only, (2) the four Census regions, and (3) the 15 MD physician specialty/DO groups used to define sampling strata in years prior to 2012. From each of these sampling strata, systematic random sampling is used to select physicians from a list in which the physicians are sorted (in order of priority) by: Census division, MSA status (i.e., in MSA vs. not-in MSA, where MSA is Metropolitan Statistical Areas defined by the OMB), and practice type (i.e., primary care, surgical, medical).

The total office-based physician sample for each year is divided into 52 representative groups which are randomly assigned to the 52 weeks of the year. The groups are formed by

systematically assigning physicians to groups from a list in which the sample physicians are arrayed according to the order in which they were selected. During the assigned week for each sample physician, a number of visits are selected for data collection. For those traditional physicians who have been sampled from the non-registrant group, a systematic random sample of approximately 30 patient visits is selected from chronologic lists of the visits made to the physician during that week. For those MU physicians who have been sampled from the registrant group, all visits made to the physician during that week are selected. In both instances, data collection within a physician's practice begins on Monday morning of the assigned reporting week and continues through the following Sunday (substitution of a reporting week is not permitted). This approach provides for continuous data collection throughout the year to account for seasonal variation in disease and patient visit patterns.

Justification for Increased NAMCS Sample Size for 2020 and 2021

As mentioned previously in Supporting Statement A, NAMCS, along with NCHS' other provider surveys, is in the process of transitioning from record abstraction to obtaining data from electronic health records (EHRs) transmitted from providers. There are clear benefits to making this transition including the ability to collect more and higher quality information. Collecting data from physicians through EHRs will allow NCHS to sample a larger number physicians compared to the traditional method of sending a field representative on-site to a physician's office to collect data. Collecting NAMCS data via EHRs would also allow for gaining a larger number of visits per physician, as opposed to abstracting only a limited sample of visits, which should increase the precision of NAMCS estimates. In addition, NAMCS would be relying on physicians, who have registered with the NCHS National Health Care Surveys Public Health Reporting Registry, to provide EHR visit data when requested and their participation in NAMCS would assist them in meeting the Centers for Medicare and Medicaid Services Electronic Health Record Incentive Programs requirements.

This change in the sample is designed to address three related objectives. First, the procedures proposed for the 2020 and 2021 NAMCS would mark the beginning of the full transition to EHR data collection. Moving forward, and assuming the evaluation of this transition stage is successful, the plan is to phase out abstraction except for those physicians who do not use EHRs.

Second, as in any situation where a new mode of data collection would be used, it is important to have a bridge period to evaluate EHRs as the source of data for NAMCS. Methodological investigations would focus on: (1) missingness in EHR vs. abstracted data; (2) potential biases in the unweighted variable counts due to mode effects; (3) assessing bias through replicating weighted, national estimates found in products currently disseminated using NAMCS abstracted data; and (4) identifying any potential differences in key variables that are important to NAMCS survey design and data weighting, subsequently allowing us to create more precise and better calibrated survey weights. These types of analyses can only be done if the sample includes abstracted and EHR cases. An equal number of each type of cases will facilitate the analyses which will provide critical and immediate information that could be used in planning for the next steps in the transition to EHR data collection.

Third, the larger sample will allow for more stable and precise estimates to be generated for those indicators where abstracted data and data from EHRs are shown to be comparable in the methodological analysis. One manner in which NCHS has traditionally measured precision is by calculating the relative standard error (RSE) of an estimate; where any estimate with a RSE>30.0% is flagged as unreliable. In Tables 1-3, which are presented below, previously-published data from the 2015 NAMCS are used to make crude projections for the 2020 NAMCS. These projections were calculated in two different manners: assuming a sample of 3,000 abstracted physicians and assuming a sample of 6,000 physicians (half abstracted, half MU physicians). Table 1 provides RSE estimates for total visits and shows that all of the visit estimates listed become reliable when the sample is increased from 3,000 to 6,000 physicians. Tables 2 and 3 provide RSE estimates for visits made by female patients and male patients, respectively; and show that in many instances where an estimate is unreliable (i.e., RSE>30.0%) with a 3,000 physician sample, by increasing the sample to 6,000, the precision gained would allow for a number of yearly estimates to be presented that would otherwise be considered unreliable. Thus, including the MU physician sample would immediately be useful by allowing us to present estimates on certain health care-related topics without combining numerous years of NAMCS. This is particularly relevant when making estimates for subpopulations such as those defined by age or by diagnosis or procedures or medications received.

Table 1. Relative Standard Errors (RSE) for Estimates of Selected Characteristics of Office Visits: Projected Crude Estimates for 2020 NAMCS[1]

Visit Characteristic	2015 Visits Number of visits in thousands (standard error in thousands)	Visit RSE[2]	Projected 2020 RSEs (3,000 physicians) Visit RSE[2,3]	Projected 2020 RSEs (6,000 physicians) Visit RSE[2]	Difference between projected RSEs: 3,000 vs. 6,000 physicians Visit RSE[2]
All Visits	990,808 (49,038)	4.95	9.25	6.54	-2.71
Visits with…					
Reason for Visit: Stomach and abdominal pain, cramps and spasms	15,0263 (2,796)	18.61	**34.77**	24.59	-10.18
Reason for Visit: Medication, other and unspecified kinds	35,232 (7,003)	19.88	**37.14**	26.26	-10.88
Professional identity: Doctor of osteopathy	57,180 (12,491)	21.85	**40.82**	28.87	-11.96
Metropolitan status: non-MSA	69,761 (13,263)	19.01	**35.53**	25.12	-10.41
Ownership: Other health care corporation	64,351 (12,881)	20.02	**37.40**	26.45	-10.96
Practice size: 11+ physicians	107,749 (22,768)	21.13	**39.49**	27.92	-11.57
Examinations and screenings: Depression screening	43,525 (7,964)	18.30	**34.19**	24.18	-10.01
Examinations and screenings: Foot	50,962 (10,601)	20.80	**38.87**	27.49	-11.39
Health education and counseling: Diabetes education	19,481 (3,729)	19.14	**35.77**	25.29	-10.48

[1]Based on 2015 NAMCS estimates (and their standard errors) and 2018 NAMCS rates eligibility and PRF submission.
[2]RSE is relative standard error, and is used as a measure of reliability and expressed as a percentage of the estimate; it is calculated as SE/estimate.

Table 2. Relative Standard Errors (RSE) for Estimates of Selected Characteristics of Office Visits: Projected Crude Estimates for 2020 NAMCS[1]

Visit Characteristic	Number of visits in thousands (standard error in thousands)	Visit RSE[2]	Projected 2020 RSEs (3,000 physicians) Visit RSE[2,3]	Projected 2020 RSEs (6,000 physicians) Visit RSE[2,3]	Difference between projected RSEs: 3,000 vs. 6,000 physicians Visit RSE[2]
			2015 Visits		
All Female Visits	585,795 (30,238)	5.16	9.65	6.82	-2.83
Female Visits with…					
Reason for Visit: Stomach and abdominal pain, cramps and spasms	10,926 (2,340)	21.42	**40.02**	28.30	-11.72
Reason for Visit: Medication, other and unspecified kinds	17,110 (3,243)	18.95	**35.41**	25.04	-10.37
Professional identity: Doctor of osteopathy	33,778 (7,285)	21.57	**40.30**	28.50	-11.80
Metropolitan status: non-MSA	40,711 (8,318)	20.43	**38.18**	27.00	-11.18
Ownership: Other health care corporation	39,547 (8,691)	21.98	**41.06**	29.04	-12.03
Practice size: 11+ physicians	61,580 (15,412)	25.03	**46.77**	**33.07**	-13.70
Examinations and screenings: Depression screening	27,347 (4,407)	16.11	**30.11**	21.29	-8.82
Examinations and screenings: Foot	30,0904 (6,388)	21.23	**39.67**	28.05	-11.62
Health education and counseling: Diabetes education	11,004 (2,565)	23.31	**43.56**	**30.81**	-12.76

[1]Based on 2015 NAMCS estimates (and their standard errors) and 2018 NAMCS rates eligibility and PRF submission.
[2]RSE is relative standard error, and is used as a measure of reliability and expressed as a percentage of the estimate; it is calculated as SE/estimate.
[3]A RSE in bold font indicates that the corresponding estimate would traditionally be noted as unreliable by NCHS (i.e., RSE>30.0%).
 SOURCE: NCHS, National Ambulatory Medical Care Survey (NAMCS), 2015.

Table 3. Relative Standard Errors (RSE) for Estimates of Selected Characteristics of Office Visits: Projected Crude Estimates for 2020 NAMCS[1]

Visit Characteristic	2015 Visits Number of visits in thousands (standard error in thousands)	Visit RSE[2]	Projected 2020 RSEs (3,000 physicians) Visit RSE[2,3]	Projected 2020 RSEs (6,000 physicians) Visit RSE[2,3]	Difference between projected RSEs: 3,000 vs. 6,000 physicians Visit RSE[2]
All Male Visits	405,013 (23,023)	5.68	10.62	7.51	-3.11
Male Visits with…					
Reason for Visit: Stomach and abdominal pain, cramps and spasms	4,101 (948)	23.11	**43.19**	**30.54**	-12.65
Reason for Visit: Medication, other and unspecified kinds	18,122 (4,202)	23.19	**43.33**	**30.64**	-12.69
Professional identity: Doctor of osteopathy	23,402 (5,910)	25.26	**47.20**	**33.37**	-13.82
Metropolitan status: non-MSA	29,050 (5,665)	19.50	**36.44**	25.77	-10.67
Ownership: Other health care corporation	24,804 (5,084)	20.50	**38.30**	27.08	-11.22
Practice size: 11+ physicians	46,170 (7,862)	17.03	**31.82**	22.50	-9.32
Examinations and screenings: Depression screening	16,178 (4,269)	26.39	**49.31**	**34.87**	-14.44
Examinations and screenings: Foot	20,872 (4,815)	23.07	**43.11**	**30.48**	-12.63
Health education and counseling: Diabetes education	8,477 (1,760)	20.77	**38.81**	27.44	-11.37

[1]Based on 2015 NAMCS estimates (and their standard errors) and 2018 NAMCS rates eligibility and PRF submission.
[2]RSE is relative standard error, and is used as a measure of reliability and expressed as a percentage of the estimate; it is calculated as SE/estimate.
[3]A RSE in bold font indicates that the corresponding estimate would traditionally be noted as unreliable by NCHS (i.e., RSE>30.0%).
SOURCE: NCHS, National Ambulatory Medical Care Survey (NAMCS), 2015.

Community Health Centers (CHCs)

The CHC component of the NAMCS uses a three-stage design in which the first stage is a stratified list sample of CHC service delivery sites, with sampling strata defined by Census region and CHC type (is, or is not, an Urban Indian Health Service CHC). From each sampling stratum, systematic random sampling is used to select service sites from a list in which the service sites are arrayed by MSA status, Census division, and CHC. The total annual sample of CHC sites for each year is divided into 52 subsamples which, in turn, are randomly assigned to the 52 weeks of the year for reporting in the survey. At each sampled service delivery site, a systematic random sample of up to three providers (i.e., MDs, DOs, and/or advanced practice providers) will be selected from those scheduled to work at the CHC site during the site's assigned sample week. The three providers will be selected with probability proportional to the

numbers of visits the providers are expected to see at the sampled site during the reporting week. If fewer than three providers will see patients during the assigned week, then all providers seeing patients at that site in that week are included in the sample. As done with office-based physicians, a systematic random sample of approximately 30 patient visits to each sampled provider will be selected from chronologic lists of visits seen by the provider at the sampled site during the assigned week. Visits define the third stage of sampling. There is a proposed annual sample of 104 CHC service delivery sites for each of 2019-2021. Up to three providers will be selected from each site, and for ease of calculations, this package assumes all 3 will be selected for participation. This adds 312 providers to the annual NAMCS sample. Similar to the office-based NAMCS, the CHC sample will produce visit estimates for four Census regions, nine Census divisions, and the whole United States. Note that NAMCS data collection for each CHC in 2019-2021 will be completed through abstraction, and no CHC data will be collected via EHR.

Annualized NAMCS Sample Counts for 2019-2021	
Traditional office-based physicians (data collection via abstraction)	3,000
EHR office-based physicians (data collection via EHR)	2,000
CHC service delivery sites	104
CHC providers = CHC sites * 3 CHC providers	312

2. Procedures for the Collection of Information

<u>Traditional Office-based Physicians and CHC Providers</u>

Training

For data abstraction, primary training in data collection procedures is conducted at different times with three types of staff. First, U.S. Census Bureau headquarters staff are responsible for training the regional office (RO) staff. Second, RO staff have the primary responsibility for training the third type of staff, field representatives (FRs), and for supervising physician/provider data collection activities. FR training covers the following topics: inducting the physician/provider, confidentiality, Health Insurance Portability and Accountability Act (HIPAA), and medical record abstraction. FRs induct the physicians/providers and work with their staffs on generating a list of visits for the appropriate randomly assigned reporting week. FRs then use this list to generate a sample of visits, and then complete the patient record forms (PRFs) from the sample visits via abstraction. In preparation for each survey year, U.S. Census Bureau staff provide refresher training to FRs and RO staff on changes related to the forms, items, and procedures.

Throughout the year, conference calls are held among Ambulatory and Hospital Care Statistics Branch (AHCSB) staff, U.S. Census Bureau headquarters staff, Census field division staff, and NAMCS supervisory staff from all of the ROs to discuss issues relevant to the ongoing NAMCS data collection.

Newly hired FRs are trained on the specifics of the NAMCS survey and introduced to the automation procedures. As a follow-up in annual training, all FRs (including the newly hired

FRs) from the 6 ROs across the country are given refresher training that highlights issues related to: (1) administering the computer-based induction instruments in the field, including efforts to increase respondent participation; (2) abstracting data in the automated PRF instrument; (3) managing NAMCS electronic cases; and (4) addressing FR questions and concerns. Occasional national conferences, which are held when there is sufficient funding, represent a unique opportunity for FRs to exchange ideas and methods on how to work on a survey that presents unique challenges not faced by other U.S. Census Bureau FRs.

Initial Contact

For physicians and CHC providers who will be asked to participate via data abstraction, initial contact is made at varying times prior to the beginning of the NAMCS-assigned reporting week for the sampled physician/CHC service delivery site. Four weeks prior to the CHC service site's assigned data collection week, notification is sent to the site's executive/medical director that his/her particular site has been randomly selected to participate in NAMCS. In addition, CHC physicians/providers also receive an introductory letter, patterned after the letter sent to office-based physicians before their assigned reporting period. Finally, traditional office-based physicians who have been selected to participate in the survey receive an introductory letter approximately 2 weeks before their 1-week reporting periods are to begin. All three types of letters are similar, signed by the Director of the National Center for Health Statistics (NCHS), and explain the basics of the survey. Specifically, the letters: (1) highlight the voluntary nature of participation; (2) describe the planned contact with a representative from the U.S. Census Bureau who will act as NCHS data collection agent; and (3) provide additional instructions and support. See **Attachment K1** for copies of all three types of letters that were utilized in 2018. The first letter in the attachment is intended for office-based physicians, the second is for CHC providers, and the third letter is given to CHC executive/medical directors. **Attachment K2** is included in this OMB submission and contains copies of the 2019 same three types of letters described above. The only difference between the 2018 and 2019 letters is that we (1) added a few words throughout the text for enhanced clarity, (2) removed a reference to the Federal Cybersecurity Act, and (3) added the most recently approved confidentiality language. Since the language associated with the Federal Cybersecurity Act was deleted from the letters, the associated FAQ page (that was included with each advance letter in 2018) has also been discontinued for 2019 (**Attachment R**). The letter sent to sampled NAMCS participants contains endorsing letters from specialty medical colleges and/or associations corresponding to the physician's particular specialty. In addition, we include a motivational insert (**Attachment L**) with the introductory letter. This short brochure contains reasons for participation, and questions and answers on confidentiality issues including the HIPAA Privacy Rule.

During the initial interview with the CHC site director, a U.S. Census Bureau FR completes a computer-assisted interviewing instrument, a NAMCS-201. This NAMCS-201, the CHC Service Delivery Site Induction Interview, represents the CHC induction interview (**Attachment E1**). Items in the automated NAMCS-201 instrument allow for the collection of general CHC contact information, along with the type of center, sources of revenue, workforce, EHR capabilities, and payments. The major purpose of the computer-based NAMCS-201 is to list all eligible providers at the sampled location, including those who will not be subjected to sampling because they are not scheduled to see patients during the CHC site's sample week. This list of

providers will include only those who work at the sampled service delivery site. School-based CHC locations are not eligible, as institutional and occupational settings are not within the scope of NAMCS. When the list of providers has been supplied, the FR will select up to three providers to be sampled. This selection will be proportional to their expected visit volume in the sample week. The FR will then obtain the telephone numbers of the selected providers so they can be contacted and inducted.

Physician/Provider Induction

The introductory letter (**Attachment K2**) to the office-based physician is followed by a telephone call from a Census Bureau FR to schedule an appointment so that the physician can be inducted into NAMCS by personal interview (**Attachment C1**). Each CHC physician/provider is also inducted with a letter followed by appointment scheduling and personal interview (**Attachment C4**). During the induction visit, the interviewer also instructs the physician/CHC provider and staff on the sampling procedures, which vary according to how many visits the physician/CHC provider expects to see during the sample week. Sampling only a fraction of the visits is intended to reduce the burden to busy physicians/CHC providers. Detailed definitions and instructions for selected PRF items are provided as help screens in the electronic instrument.

Data Collection

For non-registered sampled physicians, a computer-assisted NAMCS-1 interviewing instrument is completed for each sampled physician and CHC provider during the induction visit (**Attachments C1** and **C4**). As mentioned above, the questions in the first-half of the NAMCS-1 are used to guide the FRs through the induction process and verify the physician/provider's eligibility. The second half of the questions are dedicated to obtaining information concerning selected practice characteristics. For 2019, we modified selected existing questions for clarification and to keep up-to-date with current medical practice and terminology**.** In addition, to reduce burden on physicians/CHC providers, survey questions on STI/HIV prevention, culturally and linguistically appropriate services, and alcohol screening and brief intervention were discontinued. Furthermore, the survey questions asked regarding EHR use and capabilities were also reduced in number. Finally, we also increased the number of offices from where sampled physicians can indicate they work during their pre-determined reporting week (from 5 offices to 10 offices) (**Attachments C1** and **E1**).

The majority of data collection occurs with the completion of PRFs (**Attachment F1**). The physician/CHC provider records each patient visiting them in sequence during the reporting week. This record of patient visits may be completed whichever manner works best for the physician. Visit sampling rates, based on the "start with" and "take every" number (generated by the automated NAMCS-1 survey instrument), are assigned to physicians/CHC providers according to the number of visits they expect to see during their reporting week, such that approximately 30 of the visits made to the physician/CHC provider during his/her reporting week will be selected for PRF completion. A random start is provided for each physician/CHC provider after which every n^{th} patient is sampled throughout the 1-week reporting period.

A PRF is completed for each sampled patient visit and is abstracted by U.S. Census Bureau FRs. The NAMCS PRF collects data on patient characteristics, such as age, sex, race, and ethnicity, and visit characteristics, such as date of visit, expected source of payment, reason for visit in patient's own words, physician diagnoses, laboratory or other medical procedures received or ordered, and medications provided or prescribed. Starting in the 2016 NAMCS survey cycle, a select sub-sample of physicians may transmit patient medical record data directly through their EHR system.

Monitoring Data Collection and Quality Control

U.S. Census Bureau Headquarters staff, Demographic Surveys Division, Housing Surveys Branch, is responsible for overseeing the data collection for NAMCS that occurs via abstraction (i.e., traditional office-based physicians and CHCs). Census Bureau headquarters and field division staff are responsible for the supervision of staff in ROs, who in turn supervise the FRs.

Computerization of the PRF allows for automated edits to be built into the instrument, so that keying errors are automatically detected as the FR is entering the data. Once a case is completed, the survey data are encrypted and sent to a secure Census Bureau database through a secure internet connection. The data are then sent to our keying and coding contractor who will conduct medical coding on the verbatim text fields including (1) for reason for visit in the patient's own words, (2) physician diagnoses, and (3) laboratory or other medical procedures received or ordered. Keying and data entry activities are currently performed by a contractor, while drug coding is conducted in-house at NCHS. All medical and drug coding, as well as all data entry operations, are subject to quality control procedures—specifically, a 10% quality control sample of survey records are independently keyed and coded. Computer edits for code ranges and inconsistencies are also performed.

As in any survey, results are subject to both sampling and non-sampling errors. Non-sampling errors include reporting and processing errors, as well as biases due to nonresponse and incomplete response. To eliminate ambiguities and encourage uniform reporting, attention has been given to the phrasing of items, terms, and definitions. New questions are carefully reviewed before being added to NAMCS. After questions are fielded, periodic focus groups are created to elicit comments and to correct potential sources of confusion. Throughout the year, we frequently consult with subject matter experts and question sponsors and these discussions greatly influence the potential modifications and additions to the 2019-2021 NAMCS. For example, CDC injury epidemiologists advised on cause of injury, and the Office of the Assistant Secretary for Planning and Evaluation advised on physician workforce survey questions.

Missing values for a few items on the survey are imputed by randomly assigning a value from a PRF with similar characteristics. These imputations are based on physician identity, physician specialty, geographic region, and the 7-digit ICD-10-CM code for primary diagnosis. In 2015 (the latest data available), imputations were performed for the following variables: birth year (<0.1%), sex (0.6%), ethnicity (25.8%), race (25.8%), patient seen before in practice (1.3%), number of visits patient made to that physician/provider in the last 12 months (11.2% of visits by established patients), and time spent with physician (30.9%). Missing race and ethnicity has been a continued concern in prior data collection years, so FRs were instructed to make an extra effort

to retrieve missing race and ethnicity data. These efforts have paid off. In 2013, raw traditional and CHC data combined showed 23% of records were missing race and 23% of records were missing ethnicity. In 2014, 21% of records were missing race and 16% of records were missing ethnicity.

As mentioned in section A, quality control will be implemented through the proposed reinterview study. This study will be used to identify interview falsification. If falsification is identified, we will investigate with the U.S. Census Bureau possible reasons for the falsification. Results may be used to design supplemental training to improve abstraction quality, or may lead to proposed modification of instructions or data collection forms. Also, while reabstraction of data for the 2018 sample will not be used to evaluate individual FRs, it will be used to track the level of abstraction/reabstraction agreement in Census ROs, and may identify a need for supplemental training.

NAMCS data submission via EHR is done so directly, and therefore eliminates error that could be introduced by having an individual such as a FR manually abstract data. Eliminating this source of error is an advantage over data collection via abstraction. As data collection via EHRs is done directly, with no abstraction, they are considered official records. These data will be collected "as is," and processed without any editing made to the data themselves.

Estimation Procedures

National, Census regional, and Census division visit estimates will be produced based on two fundamental sources of data: (1) private non-federal office-based physicians, and (2) providers at CHCs designated as 330 grant-supported federally funded qualified health centers, federally qualified look-alikes, and Urban Indian Federally Qualified Health Centers. The estimation procedure has four basic components: (1) inflation by reciprocals of the selection probabilities, (2) adjustments for nonresponse, (3) calibration ratio adjustment, and (4) weight smoothing. Starting in 2003, the non-response adjustment factor utilized information provided by refusal physicians about the number of patient visits they see during a typical week in their practice and the number of weeks they work during the year. In addition, starting in 2004, the estimation process was modified to take into account season of reporting weeks.

Similar to the 2016 survey year, the sample size has the statistical power needed to generate estimates for four Census regions and nine Census divisions. NAMCS data can also be used to make national estimates of office-based physicians and associated medical practices. These estimates are unbiased and based on a complex sampling design with multistage estimation. Physician weights are used to estimate national numbers and characteristics of office-based physicians (e.g., sex, age, and specialty) and their practices (e.g., numbers of physicians in the practice, single-specialty compared with multispecialty practices, and types and numbers of patient encounters in last full week of practice). The NAMCS physician sampling weight can also be modified to produce a national medical practice estimator (e.g., practice size, breadth of specialization, and selected diagnostic and therapeutic services available onsite). Data from the NAMCS samples are weighted by the inverse of selection probabilities with non-response adjustments done at least within Census region and, when feasible within physician specialty

groups and/or MSA status. Calibration adjustment factors are used to adjust estimated physician total counts to known physician total counts appropriate for each sample.

The 2015 NAMCS office-based sample ended with an unweighted response rate of 35.4% for PRFs (i.e., a physician gave one or more PRFs/eligible responder), and a weighted response rate of 36.5%. For the NAMCS-1 form, the unweighted and weighted response rates (NAMCS-1 responder/eligible responder) were 44.0% and 46.0%, respectively. Efforts to raise response rates are ongoing. For non-registered physicians in the National Health Care Surveys, with each introductory letter (**Attachment K2**) we include a motivational brochure (**Attachment L**) that addresses physicians' concerns about participation. The insert covers confidentiality issues, including requirements pertaining to the Health Insurance Portability and Accountability Act (HIPAA) Privacy Rule. We enclose the introductory letter and brochure in a windowed, multi-colored envelope in order to increased visibility and exposure to office gatekeepers who, in many cases, sort and prioritize the mail for a physician.

We provide each FR with the most current data so they can encourage participation in the surveys. We also provide other promotional material that give physicians examples of how the survey is used and how important it is for research. At centralized FR training conferences, FRs have an opportunity to learn from each other on how to convert physicians that initially refuse to participate. Because the physician and office staff are already very busy with patients and their associated paperwork, some may view such a survey as additional, volunteer work that they do not have the time or desire to complete. In addition, because of the many Medicaid and Medicare regulations from the government, numerous physicians may view this survey as a further intrusion into their private practice. Our efforts are many times overshadowed by private industry, which may pay the physician and office staff for their time.

Each year we publish weighted response rates by a variety of physician characteristics available from the sampling frame and the physicians themselves. Additional information concerning the anticipated 2019-2021 nonresponse is described in section B3.

Sampling Errors

The standard error is primarily a measure of the sampling variability that occurs by chance because only a sample rather than an entire universe is surveyed. Estimates of the sampling variability were calculated using Taylor series approximations in SUDAAN, which take into account the complex sample design of NAMCS. A description of the software and its approach has been published elsewhere.[1]

3. Meaningful Use (MU) Office-based Physicians

In multiple places throughout this OMB package we use the term Meaningful Use (MU) to describe a physician's/provider's ability to meet public health reporting objectives of the Medicare Quality Payment Program final rule and the Centers for Medicaid and Medicare

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[1] Research Triangle Institute. SUDAAN User's Manual, Release 9.0.1. Research Triangle Park, NC: Research Triangle Institute, 2005.

Services (CMS) EHR Incentives Programs final rule on modified Stage 2 and Stage 3. As mentioned in the beginning of Supporting Statement A, the same CMS concept is now referred to as the Promoting Interoperability (PI) Program, but is referenced as MU for this package. Justification for including and increasing the MU physician component for the 2020-2021 NAMCS samples is presented above in section B1.

For data collection via EHR submission, a series of training materials have been developed for each registered physician to use in an effort to assist in guiding him/her in the submission process. These materials include information and answers on registering for the National Health Care Surveys Registry, requirements needed to be met when registering, and what happens when a physician has been sampled for participation in NAMCS. These materials are made available not only on the NAMCS website (https://www.cdc.gov/nchs/dhcs/meaningful_use.htm), but also delivered electronically when a physician has registered, and is sampled for participation.

For sampled physicians who registered with the National Health Care Surveys Registry, the selected outside NCHS contractor will initiate contact with the Registry organizational contact associated with the physician electronically with a form letter. A small number of EHR physicians may be their own organizational contact. The letter informs the organizational contact that provider(s) from their organization have been sampled for participation in NAMCS and asks the contact to communicate with NCHS about how electronic data submission will be arranged. In addition, the letter reminds or informs the organization of the registered provider's willingness to submit electronic data for NAMCS when requested in order to meet the public health reporting objectives of the Medicare Quality Payment Program final rule and the Centers for Medicaid and Medicare Services EHR Incentives Programs final rule on modified Stage 2 and Stage 3. To remain in good standing, the registrant is required to have their organizational contact respond to this letter within 60 calendar days. We anticipate minor burden for MU physicians during the 2020-2021 survey period, as described in section 12 of Supporting Statement A.

Physician/Facility Information

The first formal NAMCS data collection requirement for each sampled EHR physician is to complete a Physician Facility Information (PFI) form (**Attachment N**). The questions on the PFI form represent a compressed version of the NAMCS induction questions that are completed by traditional office-based NAMCS physicians. The organizational contacts are asked to complete this PFI form (on behalf of each sampled physician), and submit them within seven days.   Once the PFI form is returned, it is reviewed to verify the physician's eligibility. Eligible physicians are invited to begin the process of testing and validation of their EHR systems.

Data Collection

Once the results of testing and validation show that specific transmission and compatibility guidelines were met, the physician or his organization is then invited to the production phase of NAMCS EHR data collection. Similar to traditional NAMCS, electronic visit data are submitted by the organizational contact or physician themselves (although we anticipate a very small

number of actual MU physicians performing any NAMCS work) for each sampled provider based on an assigned 7-day reporting period. EHR visit data are expected to be delivered to the contractor within 30 days of receiving an invitation to production. Similar to the NAMCS PRF, the EHR visit data submitted contains data on patient characteristics, such as age, sex, race, and ethnicity, and visit characteristics, such as date of visit, expected source of payment, physician diagnoses, laboratory or other medical procedures received or ordered, and medications provided or prescribed.

4. Methods to Maximize Response Rates and Deal with Nonresponse

NAMCS uses multiple methods for maximizing physician response. The medical community, including the American Medical Association and the American Osteopathic Association, is informed and consulted about the study. Nineteen major medical societies have endorsed NAMCS and have provided letters of support for use in enlisting sampled physicians during the 2016-2018 survey years (**Attachment M**). These letters are typically updated every year, as our contacts change annually. Survey procedures and forms are designed to minimize the time required of physicians to participate. Physicians selected in the non-community health center (CHC) NAMCS sample are excluded from possible selection again for the following two years (regardless of whether they have signed-up for the Registry or not). In addition, the FRs are given detailed training in survey procedures with special modules on gaining physician cooperation. Field representative (FR) "nurturing" sessions are conducted periodically, as survey funds permit. Another way nonresponse can be addressed is during FR training sessions. As mentioned earlier in section B2, newly hired FRs are trained in the regional offices (ROs) on the specifics of NAMCS and automation procedures. When funds permit, centralized FR training is also held. In centralized trainings, all FRs (including the newly hired FRs) from the ROs across the country have the opportunity to participate in a national NAMCS/NHAMCS conference highlighting issues related to: (1) administering the computer-based induction instruments in the field, including efforts to increase respondent participation; (2) abstracting data in the automated PRF instrument; (3) managing NAMCS electronic cases; and (4) addressing FR questions and concerns. The national conference represents a unique opportunity for FRs to exchange ideas and methods on how to work on a survey that presents unique challenges not faced by other Census FRs. When the funds available do not cover the cost of a centralized FR training, we have instead held a centralized training for newly-hired FRs, which highlights the same issues noted above.

As mentioned in a previous section, NCHS has designed a mailing insert to help persuade the physician, gatekeeper, or CHC provider to participate. It also has answers to questions that physicians may have on why they should participate, describes how the Privacy Rule permits data collection for NAMCS, and provides a link (https://www.cdc.gov/nchs/ahcd/namcs_participant.htm) to our participant website. This website makes available further material that physicians can use to verify, under the requirements of the Privacy Rule that they are indeed allowed to disclose to NCHS/CDC the information requested as part of this survey. This includes the authority under which NCHS is collecting this information and that the information being collected is the minimum necessary.

The FRs provide the sampled physician with materials that show the importance of NAMCS, including the most recent survey report (for a sample of the most recent NAMCS *NCHS Data Brief*, see https://www.cdc.gov/nchs/products/databriefs/db311.htm).

The survey uses procedures to verify the status of the out-of-scope physicians to ensure they were not just refusal cases who were erroneously labeled as out-of-scope. All six ROs review 50% of their out-of-scope cases to confirm that these cases are correctly coded by FRs. If a case was mistakenly classified, and time permits, the RO will assign another FR to process the case and abstract PRFs.

This survey requires a commitment from the physicians and their staffs, along with CHC directors and sampled providers. Any of these groups may refuse to participate for many different reasons. Through years of experience with NAMCS, techniques for converting refusals have been developed that are quite effective, flexible and responsive to individual concerns. Primarily using supervisory personnel, interviewers have successfully converted approximately 15% of initial refusals to successful participants. Conversion is successful by emphasizing the following ideas: professional responsibility to enhance knowledge of the utilization of ambulatory care in the United States, and the fact that no confidential information is collected on any patient, and only descriptive statistical reports are published.

Prior observation of nonresponse cases in NAMCS found that break off was most likely to occur at the stage of the telephone screener (43%) and that often the refusal is from the office staff rather than the physician. This is consistent with information that shows that a majority of nonresponding physicians do not remember being contacted about NAMCS. Each year in our annual statistical report, we describe weighted characteristics of NAMCS physician respondents and non-respondents on numerous variables including: age, gender, geographic region, metropolitan statistical area (MSA) status, type of doctor, specialty, specialty type, type of practice, and annual visit volume. In 2016, a nonresponse bias report about the 2012 NAMCS estimates was published as a *Vital Health Statistics* report (https://www.cdc.gov/nchs/data/series/sr_02/Sr02_171.pdf). The report examined influences on physician nonresponse based on (1) increasing the sample file to produce state estimates, and (2) the introduction of a new computerized survey instrument. Specifically, the research concluded that, "Implementation of the new data collection mode may have influenced lower physician completion of PRFs (for visit-level data) compared with 2010 and 2011. After adjustment for nonresponse by MSA status, Census division or targeted state, and physician specialty categories, no or minimal biases (less than 2.0 percentage points) were observed by these characteristics between physician estimates based on respondents for either of the two NAMCS response levels (induction interview and PRF completion).

Since January 2007, we have provided physicians and nurses the opportunity to earn continuing education credits by learning more about NAMCS through web-based educational modules presented on the CDC Public Health Training Network. The module, titled the "NAMCS: What Clinicians Need to Know" presents key NAMCS concepts, interspersed with quiz questions after each concept to reinforce learning. The goal of the web-based material is for physicians and nurses to increase their understanding of NAMCS methodology, and to improve their ability to read critically those articles in peer-related literature that use national estimates of office-based

practice parameters. Providing this NAMCS education module to physicians and nurses will not only give participants a chance to receive valuable continuing education credits, but also expand the level of NAMCS exposure to potential survey participants. This educational module was recently updated in 2017, and will continued to be offered throughout the 2019-2021 survey period.

For those sampled physicians who are registered with the National Health Care Surveys Registry, by voluntarily registering they have already agreed to participate when sampled. Thus, we expect an increased response rate for those physicians who have registered. However, we realize with this new method of NAMCS data collection there could be unknown challenges to participation. Therefore, when collecting data via EHRs, we will be examining these data for any nonresponse issues in an effort to not only identify them, but also determine if there are future approaches we could take to increase response among those sampled physicians who are included in the Registry.

5. Tests of Procedures or Methods to be Undertaken

No tests of procedures or methods are anticipated to be undertaken during the 2019-2021 study period.

6. Individuals Consulted on Statistical Aspects and Individuals Collecting and/or Analyzing Data

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