Supporting Statement B for Request for Clearance:

NATIONAL HOSPITAL AMBULATORY MEDICAL CARE SURVEY

OMB No. 0920-0278
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B. Collections of Information Employing Statistical Methods

1. Respondent Universe and Sampling Methods

The National Hospital Ambulatory Medical Care Survey (NHAMCS) target universe is non-Federal, noninstitutional hospitals in the 50 U.S. states and the District of Columbia which have 6 or more beds staffed for inpatient use. These hospitals must be either general or children's general and have an average length of stay for all patients of less than 30 days. The hospital universe frame and sample were most recently updated for the 2020 NHAMCS using hospital data from IQVIA (formed through the merger of IMS Health and Quintiles), the American Hospital Association, and the American Hospital Database.

The NHAMCS uses a multi-stage sample with a first stage sample comprising 112 geographic primary sampling units (PSUs). From those PSUs, a stratified sample of approximately 600 hospitals is selected with strata defined by whether there was an outpatient (OPD) and/or an emergency department (ED) listed in the sampling frame. The sampled hospitals are randomly divided into 16 subsets of approximately equal size. These subsets are assigned on a rotating basis to four-week reporting periods across survey years for as long as the hospitals remain eligible for participation in the survey. Of the 600 hospitals selected, and within any given NHAMCS data collection year, approximately 410 hospitals are found to have EDs. This sample is sufficient to produce reliable national estimates of ED visits.

a. Hospitals

Non-Federal, short-stay, and hospitals specializing in general and medical, maternity, children's general or long-term acute care in the sample PSUs are eligible for inclusion in the NHAMCS sample. Institutional hospitals or hospitals with fewer than 6 beds for inpatient use are excluded. Hospitals with neither an ED nor an OPD according to the frame information are treated as a separate stratum and a sample of them is selected. All hospitals with EDs and/or OPDs in non-certainty sample PSUs which had five or fewer such hospitals in 1991 are selected with certainty. In each of the remaining non-certainty sample PSUs, hospitals are selected with probability proportional to size (measured by combined volume of ED and OPD visits reported in the sampling frame) using systematic random sampling and a sampling rate that selected 5 hospitals in 1991. For ED and/or OPD hospitals located in certainty areas, hospitals are selected using systematic random sampling from lists in which hospitals are stratified by region and within region, arrayed by ownership type and size.

The resulting sample of approximately 600 hospitals is randomly divided into 16 groups (about 38 hospitals per group). Only 13 consecutive groups are utilized in a given data collection year. The next set of 13 consecutive groups is used in the subsequent year, and so on. This approach reduces participation burden and prevents most hospitals in the sample from being surveyed every year. One hospital group is assigned to each four-week reporting period during 2021, 2022, and 2023, meaning that each hospital will be asked to participate approximately every 15 months. Based on the results of the 2017 NHAMCS, the projected unweighted and weighted response rates for EDs in 2021 are 62.5% and 62.8%, respectively.

b. Emergency Service Areas

Within each selected hospital with an ED, all ESAs that are open 24/7 are inducted into the survey. Emergency Service Areas (ESAs) are defined as the smallest administrative unit of an ED where separate

patient statistics are kept. During the visit by a field representative to induct a hospital into NHAMCS, a list of ESAs is obtained. All ESAs that are open 24-hours, located either on- or off-site, and that are owned by the hospital are asked to participate. ESAs contracted by the hospital under the "hospital as landlord" arrangement are also asked to participate in the study.

c. ED Visits

Within the ESAs, patient visits are systematically sampled from the four-week reporting period assigned to hospitals. A visit is defined as a direct, personal exchange between an ambulatory patient and a physician, or a staff member acting under a physician's direction, for the purpose of seeking care and rendering health services. Visits solely for administrative purposes, such as payment of a bill, and visits in which no medical care is provided, such as visits to deliver a specimen, are considered ineligible for selection.

From each ED, a sample of approximately 100 visits is drawn. Sampling rates are determined from the number of visits seen during the reporting period and the desired number of sample records. This basic procedure is adapted to the record keeping systems of each hospitals, using the ESAs' visit logs to create a sampling frame from which sampled visits are drawn.

2. Procedures for the Collection of Information

a. Training

Training for NHAMCS data collection procedures is conducted at different times throughout the data collection period. U.S. Census Bureau Headquarters staff are responsible for training the Bureau's Regional Office staff and field representatives (FRs). FR training covers the following topics: inducting facilities, ensuring confidentiality by adhering to HIPAA, supervising patient visit sampling, retrieving missing data, and medical record abstraction. Census Bureau Headquarters staff are also responsible for writing the NHAMCS data collection FR field manuals, which detail: purposes of NHAMCS, interviewing techniques, a description of questionnaires and related forms, and procedures for inducting hospitals, conducting hospital visits, supervising patient visit sampling, and retrieving missing data.

b. Initial Contact

An introductory letter is sent from NCHS (**Attachment H**) to the chief executive officer of each sampled hospital 2 weeks prior to the end of the hospital reporting period. This letter describes the purpose of NHAMCS, authority for data collection, voluntary nature of participation, HIPAA requirements, and confidentiality procedures. Letters of endorsement are also included in the mailing of this letter (**Attachment I**).

c. Hospital Induction

U.S. Census Bureau FRs begin inducting a sampled hospital after the reporting period has passed. A telephone screener call is by the FR to the hospital to verify hospital eligibility for NHAMCS and to arrange for an appointment with the chief executive officer, directors of the ED, or whoever is designated as the hospital liaison. During the meeting, the FR explains the purpose of the survey, data collection

methods, and length of data collection. The FR also obtains general descriptive information about the organization of the ED, including specific information needed to induct ESAs.

d. Visits and Completion of Patient Record Forms

In order to decrease burden to facility staff and to facilitate the data collection procedures, FRs themselves collect visit data using computerized patient record forms (PRFs) (**Attachment D**). In addition to the available FR manuals, instructions on completing PRFs and definitions of terms are also provided to FRs in the computerized instrument through help screens. Visit information collected on NHAMCS PRFs include patient characteristics such as age, sex, race, and ethnicity, and visit characteristics such as date of visit, reason for visit, physician diagnoses, medication(s) provided or prescribed, injury information (if applicable), and expected source of payment.

e. Monitoring Data Collection and Quality Control

U.S. Census Bureau Headquarters staff, under the direction of their Survey Director for the National Ambulatory Medical Care Surveys, are responsible for overseeing NHAMCS data collection, which includes supervision of the Bureau's Regional Offices who in turn supervise the FRs.

An essential part of the four-week data collection effort is quality control that focuses on the completeness of the patient sampling frame, adherence to sampling procedures, and assurance that PRFs are completed for sampled visits. During fielding, the U.S. Census Bureau headquarters staff uses an electronic case management system to track and monitor completed and partially completed PRFs.

Once all visit data are collected from a hospital ED, the survey data for that hospital are encrypted and sent to a secure U.S. Census Bureau database through a secure internet connection, where they are de-identified and sent to NCHS. The free-text fields of the data are then sent to our medical coding contractor who will do medical and drug coding for each visit. All medical and drug coding, as well as all data entry operations, are subject to quality control procedures, where a 10% quality control sample of survey records are independently keyed and coded. Computer edits for code ranges and inconsistencies are also performed.

A final measure of quality control is that the U.S. Census Bureau also uses a re-interview study, where approximately 125 respondents to the NHAMCS are re-contacted by phone for a 15-minute interview to go over their experience during the induction interview.

f. Estimation Procedures and Sampling Errors

Using NHAMCS data, national estimates will be produced for visits to hospital EDs. The estimation procedure has three basic components: inflation by reciprocals of the selection probabilities, adjustments for nonresponse, and calibration ratio adjustment. For visits to EDs, the calibration adjustments are based on current ED visit counts recorded in the NHAMCS hospital frame file. Standard errors accompanying NHAMCS estimates are calculated using a first-order Taylor series approximation method as applied in SUDAAN variance software.

3. Methods to Maximize Response Rates and Deal with Nonresponse

NHAMCS uses multiple methods for maximizing hospital response. Endorsements are solicited and received from several prominent national organizations, including the American College of Emergency Physicians, American College of Osteopathic Emergency Physicians, Emergency Nurses Association, Society for Academic Emergency Medicine, and American Health Information Management Association. Endorsement letters are used to encourage participation of hospitals in NHAMCS. A webpage containing information relevant to potential participants is also available to hospitals, which provides additional information related to NHAMCS whenever needed, and includes details on survey selection and participation, confidentiality and privacy, the HIPAA Privacy Rule, data utilization, and contact information.

NHAMCS data collection procedures are designed to minimize response burden - a major concern and influence on response rates. Even though NHAMCS requires input from an array of individuals within each hospital, mainly those in managerial roles or health IT staff, only a small amount of time or effort is actually needed from each of them. That said, refusals to participate may occur at any one of the stages of induction or data collection. At the time of refusal, a refusal report is completed by the FR, and the U.S. Census Bureau is notified. Reasons for refusal vary considerably, necessitating refusal conversion procedures which are flexible and responsive to individual concerns. In such instances, participant-relevant survey features are stressed, indicating that data are needed by hospital and medical professions for a variety of purposes and do not exist elsewhere, all data about facilities, ambulatory units, and patients are kept confidential, and every effort is made to minimize the disruption of hospital routine. These features can often be persuasive in converting refusals.

4. Tests of Procedures or Methods to be Undertaken

No tests of procedures are anticipated. The survey questions and procedures have been used in prior surveys. The questionnaire has the same questions as the 2020 NHAMCS (OMB No. 0920-0278).

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

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