

# **Integration of the National Hospital Discharge Survey and the National Hospital Ambulatory Medical Care Survey into the National Hospital Care Survey**

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## **Introduction**

The National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention (CDC) gathers statistics on the use, access, quality, and cost of health care provided in the United States. However, the growing number and range of settings in which health care is delivered presents operational challenges. Historically, NCHS has conducted three national surveys annually across six ambulatory and hospital-based settings: physician offices, inpatient wards, emergency departments (EDs), outpatient departments (OPDs), hospital ambulatory surgery locations (ASLs), and freestanding ambulatory surgery centers (ASCs). NCHS is launching a new survey, the National Hospital Care Survey (NHCS), which integrates the National Hospital Discharge Survey (NHDS) and the National Hospital Ambulatory Medical Care Survey (NHAMCS). Since 1965, the NHDS provided critical information on the utilization of the nation's non-Federal short-stay hospitals and on the nature and treatment of illness among the hospitalized population. Since 1992, NHAMCS has provided data on the nation's use of hospital emergency and outpatient departments, and since 2009 and 2010, on hospital based and free-standing ambulatory surgery centers. These data have been extensively used for monitoring changes and analyzing the types of care provided in the nation's hospitals.

The NHCS will have two components, an inpatient component and an ambulatory component; and will be phased in over several years. In 2011, recruitment of a new national probability sample of 500 hospitals for the NHCS began. During the first two years of the survey, hospitals will be asked to provide Uniform Bill (UB)-04 administrative claims data for all inpatients, as well as hospital level data through a facility questionnaire. Beginning in 2013, the sampled hospitals will be asked to provide data on the utilization of health care provided in their EDs, OPDs, and hospital-based ASLs. A new sample of freestanding ASCs also will be recruited and inducted, thus integrating the NHDS and NHAMCS plus free-standing ASCs into the newly named NHCS.

Also beginning in 2013, the NHCS will incorporate the Drug Abuse Warning Network (DAWN). DAWN began in the early 1970s and monitors drug-related ED visits and drug-related deaths investigated by medical examiners and coroners. Information is collected for all types of drugs, including illegal drugs, inhalants, alcohol and abuse of prescription and over-the-counter medications and dietary supplements. The Substance Abuse and Mental Health Services Administration (SAMHSA), which has conducted DAWN since 1992, has collaborated with NCHS to have this information collected as part of the ambulatory component of the NHCS.

NHCS will replace NHDS and NHAMCS but will continue to provide nationally representative data on utilization of hospital care and health-care statistics on inpatient care as well as care delivered in EDs, OPDs, and ASCs. However, the new survey has some strategic advantages. NHCS will collect protected health information to allow linkage across hospital settings and to other data sources such as the National Death Index and Medicare data. In addition, NHCS will gather UB-04 data electronically and as hospitals adopt electronic health records, NCHS will be poised to link these data to UB-04 data. By collecting UB-04 data for all inpatients, it will be possible to conduct special studies that focus on specific research and policy relevant questions.

This paper describes the process and challenges of integrating two surveys with similar frames but different objectives.

## **Background**

The National Health Survey Act of 1956 initiated a period of intensive survey development in the United States to meet the multiple needs for health statistics in the public and private sectors. In 1960, the National Center for Health Statistics (NCHS) was formed. Since that time NCHS has implemented, refined, and maintained surveys as necessary to meet the legislative mandate for providing health statistics. NCHS has structured its health care provider surveys into a family of surveys called the National Health Care Surveys. The current surveys which comprise the National Health Care Surveys are the National Hospital Discharge Survey, National Ambulatory Medical Care Survey, National Hospital Ambulatory Medical Care Survey, National Nursing Home Survey, National Home and Hospice Care Survey, and the National Survey of Residential Care Facilities. This family of surveys generates data that permit analyses of the relationship between the use of health services and characteristics of providers and patients at both national and regional levels. The National Health Care Surveys are authorized under Section 306(b) of the Public Health Service Act (42 USC 242k).

The new NHCS integrates NHDS and NHAMCS. NHDS, conducted continuously since 1965, is the Nation's principal source of data on inpatient utilization of general, short-stay, non-institutional, non-Federal hospitals, and is the principal source of nationally representative estimates on the characteristics of discharges, lengths of stay, diagnoses, surgical and non-surgical procedures, and patterns of care in hospitals in various regions of the country. NHAMCS has been conducted annually since 1992 and is designed to collect data on the utilization and provision of ambulatory care services in hospital emergency and outpatient department and hospital and free-standing ambulatory surgery centers. Findings are based on a national sample of visits to these departments based on non-institutional, non-Federal, general, and short-stay hospitals.

NHDS and NHAMCS data are used by government, professional, scientific, academic and commercial institutions as well as private citizens. The wide variety of uses for these data is best exemplified by the diversity of its users. These include Congress, Federal agencies, such as the Centers for Medicare & Medicaid Services (CMS) the Food and Drug Administration (FDA), Health Resources and Services Administration (HRSA), the National Institutes of Health (NIH), SAMHSA; various Centers within CDC, the Department of Defense (DOD), and the Department of Veterans' Affairs (VA); international organizations, such as the Organization for Economic Cooperation and Development; universities, medical schools and schools of public health; professional organizations, such as the American College of Surgeons and the American Heart Association; state and local governments; hospitals; individual practitioners, pharmaceutical and medical supply manufacturers; market research groups; insurance companies, health maintenance organizations, researchers and health policy makers.

Of particular importance, NHDS and NHAMCS data are used by the Department of Health and Human Services (DHHS) in the development and monitoring of goals for the Year 2000, 2010 and 2020 Health Objectives for the nation as well as the National Reports on Quality and Disparities. In 2012, the Department of Health and Human Services' Office of the Assistant Secretary for Preparedness and Response (ASPR) is funding NHAMCS to collect data from additional hospital Emergency Departments to better monitor their role and the type of care that they provide as health care reform in the United States is implemented. In addition, NHDS and NHAMCS data provide annual updates for numerous tables in the Congressionally-mandated NCHS report, *Health, United States*.

Data from NHDS and NHAMCS provide significant input to the operations of many programs within the CDC. Within the National Center for Preparedness, Detection, and Control of Infectious Diseases (NCPDCID), NHDS data provide national estimates of hospital utilization for discharges of patients with human immunodeficiency virus (HIV). Staff of the National Center for Injury Prevention and Control use NHDS data as a measure of hospitalizations due to injury. NHDS data are used in a variety of research activities in the National Center for Chronic Disease Prevention and Health Promotion. From 2006 to 2010, the National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP) asked NCHS to collect information on cervical cancer screening, specifically collected data on genital human papilloma virus (HPV) and the use of the HPV vaccine, through a supplement to NHAMCS. NHDS and NHAMCS data also frequently appear in CDC's *Morbidity and Mortality Weekly Report (MMWR)*.

## **NHCS Objectives**

NHCS has several objectives. NHCS will continue to provide nationally representative utilization statistics for hospital discharges and ambulatory medical care and for ambulatory surgery. NHCS will use a new independent

national probability sample of hospitals and free-standing ASCs to ensure that the sample continues to be nationally representative. Non-identifiable micro-data public use files of inpatient discharges and ED, OPD, and ASC visits will also continue to be released in a timely fashion so that the data can be used by health policy researchers, the public and the policy community.

An overarching objective of the NHCS is to move toward electronic data collection for both the inpatient and ambulatory components of the survey, utilizing electronic health records (EHRs). Since EHRs are not widely adopted, interim sources of electronic data need to be explored and utilized. As a first step, NHCS will gather Uniform Bill (UB)-04 administrative claims data electronically and as hospitals adopt EHRs, NHCS will be poised to link these data to the UB-04 data.

As separate surveys, NHAMCS had the capability to permit special studies but NHDS did not. NHCS will also provide a flexible platform which will permit collection of special data for both inpatient and ambulatory components as needs arise for policy and research demands. For example with the collection of UB-04 information for all hospital discharges, discharge sampling will be possible stratifying by diagnosis or discharge status, which will allow the survey to oversample specific diagnoses to perform special studies.

Finally, NHCS will collect protected health information (PHI) to allow linkage of patient data across hospital settings and to other data sources such as the National Death Index (NDI) and the Medicare and Medicaid claims databases. With the collection of PHI, NHCS will be able “follow” patients during an episode of care by linking records within the same hospital. An individual can be traced from their initial visit to the ED, to admission to the hospital, discharge from the hospital and finally for any treatment in the OPD. Linkage to the NDI will allow researchers to conduct a wide range of outcome studies (e.g., 30 day mortality from discharge from a hospital) designed to investigate the association of a vast number of health factors to mortality.

## **Sample Design**

The target universe of NHCS is inpatient discharges and in-person visits made to EDs, OPDs, ASCs of non-institutional, non-Federal hospitals in the 50 states and the District of Columbia that have six or more staffed beds and freestanding ASCs. Average length of stay is not used as an exclusion criterion as was done in the NHDS, thus expanding the frame beyond short-stay hospitals. No geographic primary sampling units (PSUs) are used in this design, and there are no certainty hospitals defined a priori. The sampling frame is from Verispan, L.L.C., specifically their 2010 spring release “Healthcare Market Index” and their “Hospital Market Profiling Solution, Second Quarter, 2010.” These products were formerly known as the SMG Hospital Database.

A stratified list sample of 1,000 hospitals was selected first and, then, that sample was split into two samples: a base sample of 500 hospitals and a reserve sample of 500 hospitals. The base and reserve samples are each divided into 16 nationally representative panels which can be used to facilitate supplementing or subsampling the hospital sample for research or funding reasons. The base sample was fielded in 2011. The reserve sample will be held until needed.

The primary goal of NHCS is to collect data on discharges to hospital inpatients and on visits to EDs, OPDs, and hospital-based and freestanding ASCs. The hospital sample is designed to meet various objectives of the new survey. In addition, there is the desire to continue tracking trends in utilization of hospitals in the old (1988 design) NHDS universe. To address these objectives, sampling strata are defined by hospital type of service (general acute, children’s general acute, psychiatric, and other long term care). Among the general acute hospitals, sampling strata are further defined by four bed sizes (<50, 50-199, 200-499, and 500+ beds) and four area types (central city in MSA of 1 million plus, fringe part in MSA of 1 million plus, MSA of less than 1million, and non MSA). Within sampling strata, systematic random sampling was used on lists in which hospitals were randomly ordered within cells defined by status for the old NHDS universe (in, versus not in, that universe), ED visit volume categories (<20,000; 20,000-48,999, and 50,000+ visits annually), and ownership type (proprietary, government, and other nonprofit).

The general acute care stratum includes general acute care and critical access hospitals, as well as surgical, cancer, heart, maternity, orthopedic and other specialty hospitals that typically provide acute care services for adults. Hospitals classified as part of the other long-term care service type stratum include rehabilitation, long-term acute care hospitals, and inpatient facilities for drug and alcohol treatment. Children’s psychiatric hospitals are classified

in the psychiatric stratum, and children's long-term acute care hospitals are classified in the other long term care stratum.

Ambulatory surgery centers that are not affiliated with a hospital are considered to be freestanding (FS) ASCs. The FS-ASCs will be treated as a separate stratum. The universe of freestanding ASCs includes ones that are regulated by states or certified by the Centers for Medicare and Medicaid Services (CMS) for Medicare participation. The sampling frame for the 2013 freestanding ambulatory surgery centers will consist of facilities listed in the 2012 Verispan Freestanding Ambulatory Surgery Center Database and Medicare-certified facilities listed in the CMS Provider-of-Services (POS) file. A list sample will be selected from this frame.

## **Sampling Methods**

### Discharges

Hospitals are asked to electronically transmit UB-04 administrative inpatient claims data for all their discharges for each quarter of the data collection year. In the event that a hospital prefers to schedule data transmission more or less frequently than four times per year, a mutually agreeable time frame will be negotiated.

NCHS plans to analyze all discharges received from the UB-04 files and make these data available as widely as possible. However, it may be necessary to sample discharges for the public use files because of the sheer size of the data file and computer limitations or if releasing all the UB-04 data from any hospital poses a risk of disclosing the hospital's identity. If sampling is needed, NCHS will select a probability sample of discharges from the UB-04 data files transmitted by each hospital. Systematic random sampling will be used with strata defined by patient type [observation cases (length of stay is zero), normal newborns, all others]. Before sampling, the records in each stratum will be randomly ordered within cells defined by (a) first two digits of the patient's primary diagnosis, (b) age groupings (<1 year, 1-14 years, 15-44 years, 45-64 years, 65-74 years, 75-84 years, 85 years and over, age unknown), (c) sex, (d) discharge month, and (e) discharge day of week.

### Outpatient Departments, Emergency Departments and Ambulatory Surgery Locations in Hospitals

Within each hospital, the sample is stratified by departments, with a separate sample being selected from the OPD, the ED, and the hospital-based ASL if the department exists in the hospital. All of the departments that exist in a sampled hospital will be inducted into the survey.

For each OPD, a sample of clinics is selected if more than five in-scope clinics exist. Clinics are in-scope if ambulatory medical care is provided under the supervision of a physician and under the auspices of the hospital. Clinics providing only ancillary services, such as diagnostic X-rays or radiation therapy, are out-of-scope. Services provided in dental or dental surgery clinics, pharmacies, or other settings in which physician services are not typically provided are also out-of-scope. In addition, freestanding medical clinics or physician groups that are physically located within a hospital but not affiliated with the hospital (i.e., the hospital basically serves as landlord) are out-of-scope but are included in the National Ambulatory Medical Care Survey (NAMCS). Emergency services contracted by the hospital under the "hospital as landlord" arrangement, however, are eligible for the ED component of the study.

EDs are included if they are staffed 24 hours a day. Off-site EDs that are open fewer than 24 hours are included if staffed by the hospital ED. Visits to physicians who have offices in the hospital are not included in NHCS, since they are eligible for the National Ambulatory Medical Care Survey. Within the hospital's ED, a list of all emergency service areas (ESAs) is obtained during the hospital induction interview. ESAs are defined as the smallest administrative unit of an ED where separate patient statistics are kept. It may be located on hospital grounds or operated off site by the hospital. The ED is treated as a separate stratum and all ESAs within a sample hospital will be included.

A list of a hospital's ambulatory surgery locations (ASLs) both within the hospital and satellite locations is obtained during the hospital induction interview. In-scope locations include all dedicated ambulatory surgery rooms, cystoscopy and endoscopy units, cardiac catheterization labs, laser procedure, and pain block rooms. Out-of-scope locations include those dedicated exclusively to dentistry, podiatry, abortions, births, family planning, and small

procedures (sometimes referred to as “lump and bump” rooms). All ASLs in the hospital will be included in the sample. Hospital ASLs are treated as a separate stratum.

### Freestanding ASCs

A sample of approximately 250 FS-ASCs will be selected. FS-ASCs dedicated exclusively to dentistry, podiatry, abortions, births, and family planning are out-of-scope. A list of ASC locations within the facility and satellite locations will be obtained during the ASC induction each time the FS-ASC is included in the sample. FS-ASCs will be inducted through a facility induction form that is similar to the hospital induction form. All locations (including satellite) locations of the FS-ASC will be included in the sample.

### Ambulatory visits

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 out-of-scope.

As a result of DAWN being incorporated into the ambulatory component, methodological work is ongoing to determine the number of sampled ED visits needed to produce reliable estimates of drug related visits. Using the current NHAMCS sampling methodology for collecting ED visit data, i.e., 4-week reporting period and abstracting records for 100 visits, it was determined that only 2 of 100 sample visits would be drug-related. This sampling plan is expected to produce insufficient drug-related cases to meet SAMHSA’s standards (15% Relative Standard Error (RSE)) for national estimates. Other ways to increase the sample of drug-related ED visits are being explored and several will be tested in the ambulatory component pretest scheduled to begin in early summer 2012.

### **Collection of Protected Health Information**

With the exception of the medical record number which was used for sampling, NHDS and NHAMCS did not collect protected health information (PHI). The NHCS will collect PHI for all components. The list of PHI patient items includes the following: name, birth date, address, zip code, dates of admission and discharge (for the inpatient component), date of visit (for the ambulatory components), procedure dates, social security number (where available), medical record number (where available), patient control number, and Medicare health insurance benefit/claim number. The PHI items for physicians include attending NPI (National Provider Identifier) number, and operating NPI number. PHI will allow linkage to the National Death Index, providing better information on outcomes of hospitalization. Another benefit of PHI is that it will allow for determination of whether a patient had returned to that hospital after discharge or by looking back in the UB-04 claims; NCHS will be able to determine whether the patients had been in the hospital prior to the admission date of the sample discharge. Collection of PHI will also allow for linkage among survey components (inpatient discharges, ED, OPD, and ASC).

### **Confidentiality**

Hospital participation in NHCS is voluntary. All information collected in the survey is used only for research and statistical purposes. The hospital contact person will be told that NHCS is collected under the authority of Section 306 of the Public Health Service Act including the Privacy Act of 1974 (5 USC 552a), Section 308(d) of the Public Health Service Act (42 USC 242m), and the Confidential Information Protection and Statistical Efficiency Act (CIPSEA, PL 107-347) of 2002, and that information which would permit identification of any individual or establishment will be collected with a guarantee that it will be held in strict confidence, will be used only for purposes stated in this study, and will not be disclosed or released to others. The contractor will not identify any hospitals or participating personnel to anyone outside the research project and NCHS personnel working on this project. Potentially identifiable data are available for linkage to other data sources through the NCHS Research Data Center (RDC). Researchers using the RDC will need to follow the established protocol of the RDC and sign an agreement of confidentiality.

Since NHCS will collect PHI, hospitals may participate while strictly adhering to the requirements of Federal privacy legislation, including the Health Information Portability and Accountability Act (HIPAA). HIPAA’s

Privacy Rule permits disclosure of PHI without patient authorization for 1) public health purposes and 2) research that has been approved by an Institutional Review Board (IRB). Both of these conditions apply to the NHCS. Since confidential information (name, address, dates of admission, discharge, and procedures, birth date, medical record number, Medicare health insurance benefit/claim number, social security number, and ZIP Code) defined as “private medical information” by the HIPAA Privacy Rule, will be collected from medical records, NCHS has obtained: 1) a waiver of patient authorization for release of medical record information as required by the HIPAA Privacy Rule (45 CFR164.512 (i)), 2) a waiver of informed consent from patients under 45CFR46.116 (d) , and 3) waiver of informed consent from physicians under 45CFR46.116 (d) from the NCHS Ethics Review Board.

For all components of the NHCS, no potentially identifiable data will be released in any form to the public. Reports produced by NCHS about the data or using the data will not identify an individual hospital or an individual discharge. Public use files will contain no information that can identify any individual or hospital. All data releases are reviewed by the NCHS Disclosure Review Board to avoid data breaches, such as release of detailed geographic information that may allow someone to identify hospitals or individuals in the general population.

### **Developmental Research Conducted**

Key developmental research was conducted to test the electronic data collection for the inpatient component of NHCS. From October 2010 through June 2011, a pilot study was conducted to develop and test procedures used to collect electronic UB-04 data in 837 format from hospitals, sample discharges according to ICD-9-CM codes from a hospital UB-04 data file, and transmit that data to a secure NCHS server accurately and securely. The pilot study was successful in several aspects. Hospitals could transmit their electronic UB-04 data files to the CDC Secure Data Network (SDN) and NCHS staff could download the files to the NCHS secure server. NCHS staff were able to process the 837 files. PHI was safeguarded by the CDC’s SDN.

In early summer 2012, a pretest will be conducted for the ambulatory component from a convenience sample of 32 hospitals already participating in the inpatient component of NHCS. The pretest will test the feasibility of the following: integrating ambulatory data collection with NHCS’s currently approved inpatient data collection; integrating DAWN data collection into NHCS, including new questions related to drug-related ED visits, sampling procedures (e.g., collecting UB-04 data for ED visits to identify all drug-related cases by ICD-9-CM code,), and record abstraction methods (e.g., remote reporting) to obtain reliable estimates of drug-related ED visits; increasing the reporting period for patient visit data; ability of hospitals to provide electronic billing records (UB-04) for sampling purposes and of NCHS to identify the department (i.e., ED, OPD, Ambulatory Surgery); relationship between UB-04 data and patient sign-in sheets (i.e., how closely do the two sources of patient visits match); new questions related to colorectal cancer screening at ambulatory surgery visits; and the ability of lookup tables (i.e., reason for visit, cause of injury, diagnosis, procedures, and medications) to capture ED, OPD, and ambulatory surgery visit data accurately.

### **Data collection**

For the 2011 and 2012 inpatient components, participating hospitals were asked to electronically submit their UB-04 inpatient claims. Initially, participating hospitals were transmitting their electronic file with UB-04 data quarterly on all discharges to the CDC SDN. However, now that a contractor has been selected to assist with data collection, all inpatient data will be transmitted to the contractor’s secure server once their systems are certified and accredited by CDC. These data will then be compiled, processed and sent to NCHS via CDC SDN. For additional special studies that use medical record abstraction to collect clinical data, discharges will be selected from the hospitals by ICD-9-CM codes appearing on the UB-04, and medical records abstractors will abstract data from the selected records onto encrypted, password protected laptop-based PC data collection tools.

The preferred format for the UB-04 files is the X12 837 format. Either 837i (institutional) or 837r (data reporting) files are acceptable in version 4010 or 5010. In January 2012, version 5010 will be required by CMS so this version will also become the only acceptable version for NHCS for the 2012 data collection.

In 2013, in addition to providing all inpatient claims, hospitals will be asked to provide information on a sample of visits to their ED, OPDs, and ASLs. A sample of visits to freestanding ASCs will also be collected. Data collection strategies for the ambulatory component are still being planned. Explorations are underway to examine if the UB-04

data claims can be used for the ambulatory component as well. For the clinical and medication information not contained in the UB-04, these data will be collected by medical record abstraction into a laptop-based PC data collection tool by contractor staff. Another option being explored is remote reporting for hospitals with these capabilities.

Facility level information will also be collected each year. For the 2011 and 2012 inpatient data collections, hospital level characteristics will be related to discharge level data within the hospital. New data elements, such as the percent of payments to the hospital from Medicaid, will allow the study of the relationship between hospital characteristics and care provided at the discharge level. In 2013, there will be a combined facility questionnaire, addressing both inpatient and ambulatory issues.

### **Challenges to integration**

The integration of NHDS and NHAMCS has posed several challenges. In terms of statistical issues, the NHCS hospital sample is designed for various objectives (e.g., produce estimates for inpatients, and visits to EDs, OPDs, and ASCs). Additionally, not all 500 sampled hospitals are eligible for all NHCS components. Some of the sampled hospitals are specialty hospitals and do not have EDs, OPDs or ASLs. Consequently, the number of in-scope hospitals will be different for the inpatient component and various ambulatory sub-components.

The incorporation of DAWN has provided several obstacles particularly with respect to the sample size of ED visits. Historically, NHAMCS sampled about 100 ED visits. To be able to provide reliable estimates for DAWN drug-related incidents under the current NHAMCS sampling methodology, it was expected that the sample size for ED visits will need to be at least doubled or possibly tripled. Abstracting 200-300 records on-site may prove to be too burdensome for many hospitals. To this end, NCHS is exploring and pretesting several options including remote abstraction, accepting UB-04 outpatient claims data or EHR data for hospitals with that capability for the ambulatory component.

Recruitment has proved difficult on several fronts. Hospitals are busy places providing health care services to patients. The time period 2011-2013 is especially hectic for hospitals as they adopt EHR systems, plan for the conversion from ICD-9-CM to ICD-10-CM as well as plan for a new version of the UB-04 to be implemented in 2012. Adding participation in NHCS is just too much for some hospitals to bear right now. They are not refusing but are asking to be re-contacted in six to eight months.

Although hospitals are required to submit UB-04 claims to CMS in the 837i file format, submission of the UB-04 claims in 837i file format to NCHS has been challenging. First, many hospitals use clearinghouses to process and submit their claims to CMS and other providers. In many instances, the \$500 payment for each year of data collection is not enough to offset the cost that the clearinghouse charges for constructing a file for NHCS. Second, some hospitals who process their own UB-04 claims do not know how to output data from their systems for submission to NHCS. Finally, some hospitals that are able to output digital data in-house are not necessarily able to output in 837 format. Although not preferred, other file formats such XML, Excel, and ASCII formats have been accepted.

### **Benefits of the NHCS**

As with any new project there are challenges that must be overcome, however, the integration of the surveys provides many opportunities. The NHCS will continue to provide national statistics that NHDS and NHAMCS currently provide. Current NHDS and NHAMCS data items will continue to be collected, which will allow trend analyses to continue. NHCS will continue to be an extremely valuable public health resource by providing trended data on hospital use, including diagnoses and procedures of particular interest (e.g., Cesarean section rates, use of coronary stents).

However, the NHCS also will have some distinct advantages. First, more information at the hospital level will be collected. This information includes, but is not limited to, the hospital's infrastructure for health information technology and volume of care provided by the facility. Thus, analyses of the effect of facility characteristics on the quality of care provided can be conducted.

Second, data collected from UB-04s on inpatient discharges will be collected from all inpatient discharges, not just a sample. When NHAMCS is integrated into the survey and visits are sampled from EDs, OPDs and ASCs, care provided to patients admitted to the hospital through the ED can be examined. The collection of personal identifiers (protected health information) will allow NCHS to link episodes of care provided to the same patient in the ED and/or OPD and/or ASC and as an inpatient, as well as link sampled cases to the National Death Index and Medicare and Medicaid data, as available to measure post-discharge mortality and other health-related outcomes. Obtaining all UB-04 data from a hospital will also allow the sampling of hospital discharges with specific diagnoses and procedures for special studies that use medical record abstraction to collect more clinical data.

NHCS makes a radical departure from the current surveys by moving to a totally electronic system for collection of core data while providing a flexible platform to allow primary data collection for strategic samples of cases. In 2011 and 2012, the UB-04 claims files will be electronically transmitted for the inpatient component of the NHCS. As hospitals adopt EHRs, NCHS will be poised to accept electronic files from hospital medical records for all components of NHCS.

NCHS also plans to move toward greater collection of emergency department data by incorporating DAWN into the ambulatory component of NHCS. The advantages include logistic and information gains to DAWN as well as the operational efficiencies of a combined effort for NCHS and SAMHSA. This additional initiative will focus on data from ED visits related to nonmedical use of prescription and over-the-counter medications, illegal drug use, suicide attempts, accidental poisonings, and emergency mental illness visits.

## **Conclusion**

An essential component to improving health care in America is the availability of comprehensive, integrated information on patterns of health care utilization across various settings. CDC's NCHS has taken an important step to enhance the quality and scope of hospital and freestanding ambulatory surgery center statistics by launching the NHCS. This new survey will help paint a clearer picture of today's health care environment and address a broad range of policy and research issues that will be important to making health care and health policy decisions in the future.