HCUP PROJECT DESCRIPTION

2012

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I. Introduction

As health care costs escalate in the United States and quality of care concerns become more pronounced, the need for accurate and timely health care data has increased dramatically. Policymakers, administrators, and the research community require comprehensive and precise data resources in order to evaluate cost, quality, and access to care. The Agency for Healthcare Research and Quality (AHRQ) sponsors one such resource, the Healthcare Cost and Utilization Project (HCUP, pronounced "H-Cup").

HCUP develops and maintains a family of health care databases, related software tools, support services, and products whose information resources are grounded in a vital Federal-State-Industry partnership. HCUP databases integrate the data collected by State governments, hospital associations, private data organizations, and the Federal government to create a national health care information resource of hospital inpatient, ambulatory surgery, and emergency department data. HCUP features the largest collection of longitudinal hospital care data in the U.S., containing a wealth of all-payer, encounter-level information beginning in 1988.

The multi-State databases contain discharge-level information in a uniform format while actively protecting patient privacy. HCUP databases facilitate cutting-edge research on a broad range of health policy and health services issues, including:

- Cost and quality of health services
- Medical practice patterns
- Access to health care
- Hospital costs and utilization, including utilization by special populations
- Diffusion of medical technology
- Effects of market forces on hospitals
- Treatment outcomes at the national, regional, State, and local market levels.

Because of their large size and scope, HCUP databases enable unique analyses. HCUP databases include information on specific medical conditions and procedures, including rare events; they are useful in tracking utilization for population subgroups, such as minorities, children, women, and the uninsured; and they can be employed to analyze health care issues at national, regional, State, and community levels within the U.S. To augment the HCUP databases, AHRQ has developed publicly-available software tools and Web-based products that can be applied by users with varying levels of research experience.

II. Goals and Research Benefits

The goals for HCUP are to:

1. Create and enhance a powerful source of national, State, and all-payer health care data.

2. Produce a broad set of software tools and products to facilitate the use of HCUP and other administrative data.

3. Enrich a collaborative partnership with statewide data organizations aimed at increasing the quality and use of health care data.

4. Conduct and translate research to inform decisionmaking and improve health care delivery.

The collaboration of Federal, State, and Industry Partners creates a mutually beneficial opportunity for sharing data and building a national resource. HCUP research benefits extend to a diversity of institutions and individuals:

Policymakers: HCUP data enable policymakers to develop effective and informed recommendations on crucial health care policy issues such as cost, utilization, quality, and access to health care.

Hospital Industry: HCUP provides hospital associations, hospitals, and provider alliances with access to national health care databases. Hospital industry members are able to make national comparisons of efficiency, cost, value, and quality of service.

Health Data Organizations: Participants in HCUP gain the opportunity to contribute to the health care knowledge base at a national level. This, in turn, highlights the value of State-level data. Health data organizations – our "HCUP Partners" – provide data to the project. Through partnership in HCUP, Partners can compare their health care statistics to other States and to regional and national indicators. HCUP Partners with new or expanded data collection programs may utilize HCUP technical support and can benefit from the experience of other organizations already collecting these data.

Researchers: The comprehensive data available in HCUP databases enable researchers to conduct health services research in many different areas, including, but not limited to, quality of care, medical practice patterns, and treatment outcomes.

III. HCUP Databases

HCUP has created a family of longitudinal databases for data years 1988 through 2010, and will be adding 2011 data as participating data organizations complete and release their annual data. This section briefly describes the HCUP databases.

A. Intramural Databases

Intramural databases are available only to authorized AHRQ staff, their contractors, and on-site guest workers.[1] These files are not available to researchers outside of AHRQ; they are only utilized for AHRQ research efforts and reports. Examples of two such reports are the National Healthcare Quality Report (NHQR) and the National Healthcare Disparities Report (NHDR). These are Congressionally mandated reports to which multiple Federal agencies contribute health services statistics.

The intramural databases contain the universe of the inpatient or outpatient discharge abstracts received from participating States, translated into a uniform format to facilitate multi-State

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[1] "Guest workers" is a term used by AHRQ to describe academic scientists, Federal employees, or graduate/Ph.D. level students who have been authorized to use Agency facilities to further their research or training. For specific approved projects, guest workers are sometimes given access to HCUP intramural data under direct supervision and guidance of a member of the HCUP team, provided that the data files are used only on AHRQ premises.

comparisons and analyses. These State-level databases contain a core set of clinical and non-clinical information on all patients, regardless of payer, including persons covered by Medicare, Medicaid, private insurance, and the uninsured. In addition to the core set of uniform data elements common to each HCUP database, some States include additional data elements of interest to researchers (e.g., patient's race or principal language spoken).

HCUP develops and maintains the following intramural databases:

1. <u>Intramural State Inpatient Databases (SID)</u> – The Intramural SID contain all inpatient discharges from a census of hospitals from 46 States. These data represent 97 percent of all annual discharges in the U.S. Researchers and policymakers use the Intramural SID to investigate questions unique to one State; to compare data from two or more States; to conduct market area variation analyses; and to identify State-specific trends in inpatient care utilization, access, charges, quality, and outcomes. Additional information is available on the HCUP User Support Website (HCUP-US) at http://www.hcup-us.ahrq.gov/sidoverview.jsp.

2. <u>Intramural State Ambulatory Surgery Databases (SASD)</u> – The Intramural SASD contain surgeries in which patients are admitted and discharged on the same day from hospital-based and, in some States, free-standing ambulatory surgery sites. Researchers and policymakers use the Intramural SASD to compare ambulatory surgery patterns; to conduct market area research or small area variation analyses; and to identify State-specific trends in ambulatory surgery utilization, access, charges, quality, and outcomes. Additional information is available at http://www.hcup-us.ahrq.gov/sasdoverview.jsp.

3. <u>Intramural State Emergency Department Databases (SEDD)</u> – The Intramural SEDD contain hospital-affiliated emergency department encounters. Researchers and policymakers can use the Intramural SEDD to conduct market area research or small area variation analyses; identify patterns of care for patients with various demographic and clinical characteristics; and examine State-specific trends in emergency department utilization, access, charges, and outcomes. Additional information is available at http://www.hcup-us.ahrq.gov/seddoverview.jsp.

B. Restricted Access Public Release Files

The HCUP data that are made available to the public are known as restricted access public release files. All restricted access public release files are derived from the intramural databases, with additional restrictions on content to meet the public release requirements of both AHRQ and each participating data organization. The restricted access public release databases include data elements approved by each participating data organization and exclude information that might directly or indirectly increase the risk for re-identification of a person.

All purchasers and users of HCUP data must complete the online HCUP Data Use Agreement (DUA) Training Course and sign an HCUP DUA before receiving the data. In addition, use of the HCUP SID, SASD, and SEDD requires the user to submit an application describing how the data will be used. This process enables AHRQ to assure that the researcher's planned use is consistent with HCUP policies and with the existing Memorandum of Agreement (MOA) signed with each contributing data organization.

The HCUP Central Distributor is maintained by AHRQ on behalf of participating HCUP Partner organizations, to distribute restricted access public release versions of HCUP data. The following databases are distributed through the HCUP Central Distributor to researchers outside of AHRQ who sign an HCUP DUA:

1. Nationwide Inpatient Sample (NIS) – The NIS is a unique and powerful database of hospital inpatient stays. The NIS consists of discharge records selected from the collection of HCUP Intramural SID data. Researchers and policymakers use the NIS to identify, track, and analyze national trends in health care utilization, access, charges, quality, and outcomes. Additional information is available at http://www.hcup-us.ahrq.gov/nisoverview.jsp.

2. Kids' Inpatient Databases (KID) – The KID is the only all-payer inpatient care database for children in the United States. Researchers and policymakers can use the KID to identify, track, and analyze national trends in health care utilization, access, charges, quality, and outcomes. The KID's large sample size enables analyses of both common and rare conditions such as congenital anomalies, uncommon treatments, and organ transplantation. Additional information is available at http://www.hcup-us.ahrq.gov/kidoverview.jsp.

3. Nationwide Emergency Department Sample (NEDS) – The NEDS contains emergency department encounters from across the nation for patients that are treated and released from the Emergency Department (ED) as well as patients admitted to the hospital through the ED. The NEDS was created to enable analyses of ED utilization patterns and support public health professionals, administrators, policymakers, and clinicians in their decisionmaking regarding this critical source of care. This database addresses a large gap in health care data – the lack of nationally representative encounter-based information on emergency care. Additional information is available at http://www.hcup-us.ahrq.gov/nedsoverview.jsp.

4. Central Distributor SID, SASD, and SEDD – Partners may also choose to make available restricted access public release versions of their SID, SASD, and SEDD files. These individual State databases include 100 percent of the records processed by AHRQ for those data organizations that release restricted access public release versions of their databases. Typically, these databases differ from the intramural files because some data elements have been restricted under Partner direction. For more information refer to http://www.hcup-us.ahrq.gov/tech_assist/centdist.jsp.

C. Using HCUP Data in Conjunction with Other Data Sources

For the purposes of research and aggregate statistical reporting, users are able to link the HCUP databases to external databases containing information about hospital and community characteristics. The type of linkage that is possible depends on the particular database.

Hospital characteristics such as bed size, ownership, utilization, finances, and staffing are available from the American Hospital Association (AHA) Annual Survey Database and the Medicare Cost Reports (MCR). Intramural HCUP databases can be linked to these hospital-based files. Restricted access public release HCUP databases can be linked to the AHA Survey and MCR only in States for which the data organization has explicitly approved the release of hospital identifiers.

Community information such as population counts, socio-demographic indicators, and measures of community health care resources are available from the U.S. Census and from the Area Resource File (ARF). Intramural HCUP databases can be linked to these external files only. Restricted access public release databases can be linked to these external files in States for which the data organization has explicitly approved the release of the necessary linkage elements.

IV. Confidentiality and Privacy Protection

AHRQ is authorized to obtain data for research purposes "to enhance the quality, appropriateness, and effectiveness of health services."[2] AHRQ is also charged with promoting the protection of individually identifiable patient information used in health services research and health care quality improvement. AHRQ staff members and contractors must sign an AHRQ Staff-Contractor Agreement to obtain access to any HCUP database. In addition, they must complete the online HCUP Privacy Training Tool that educates HCUP data users on security and confidentiality of data.

Any effort to determine the identity of any person contained in HCUP databases (including, but not limited to, patients, physicians, and other health care providers), or to use the information for any purpose other than for research, analysis, and aggregate statistical reporting violates the AHRQ confidentiality statute[3] and the conditions of the DUAs required of all persons who are given access to HCUP data. The identity of institutions included in the databases is protected from disclosure by the AHRQ confidentiality statute. This statute restricts the use of any information that permits identification of establishments for purposes other than those for which the information was originally supplied. It also incorporates the laws of the State providing the information and any other agreement between the data organization and AHRQ. Additional information is provided in the HCUP Data Security Plan, which is included as an attachment to each HCUP MOA.

V. HCUP Contacts

For additional information regarding HCUP, please contact either of the following individuals:

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[2] Amendment to Title IX of the Public Health Service Act, the Healthcare Research and Quality Act of 1999, PL 106129.
[3] Section 944(c) of the Public Health Service Act (42 U.S.C. 299c-3(c)).