GAPS IN DATA FOR AMERICAN INDIANS AND ALASKA NATIVES IN THE NATIONAL HEALTHCARE DISPARITIES REPORT

Ernest Moy, M.D., M.P.H., Colleen Ryan Smith, M.P.H., Patrik Johansson, M.D., M.P.H., and Roxanne Andrews, Ph.D.

The aim of this study was to identify and quantify gaps in health care data for American Indians and Alaska Natives. Findings indicate that only 42% of measures of health care quality and access tracked in the National Healthcare Disparities Report could be used to assess disparities among American Indians and Alaska Natives. Patient safety data was especially limited. Data from American Indians and Alaska Natives need to be improved to allow better targeting of interventions to reduce health care disparities and monitoring the success of these activities.

The National Healthcare Disparities Report (NHDR) is an annual report to Congress on racial, ethnic, and socioeconomic disparities in America (Siegel, Moy, & Burstin, 2004). Goals include identifying important disparities in health care quality and access at the national level and tracking disparities over time. Conditions targeted include cancer, diabetes, end stage renal disease, heart disease, respiratory disease, mental health, and substance abuse. Such information is critical for designing and targeting interventions to improve health care and reduce disparities and monitoring the success of these activities.

Because of the small numbers of American Indians and Alaska Natives included in many federal data collections, at the start of this activity we were concerned that almost no data would be available to examine health care disparities affecting these groups at the national level. Excluding American Indians and Alaska Natives from the report was considered and was rejected as unacceptable. We believed that it would be better to show gaps in information rather than exclude populations from the report.
To our surprise, we found that some national health care information is available on American Indians and Alaska Natives. Consistent with much research (Centers for Disease Control and Prevention, 2003; Denny, Holtzman, & Cobb, 2003; Indian Health Service, 2003a; Liao, Tucker, & Giles, 2003; Roubideaux, 2002; Urban Indian Health Institute, 2004), many disparities in health care affecting these groups were identified and reported in the NHDR (Agency for Healthcare Research and Quality, 2003).

However, data gaps were significant and precluded a comprehensive assessment of disparities faced by American Indians and Alaska Natives. Moreover, gaps in data for American Indians and Alaska Natives were larger than gaps for most other racial and ethnic groups. For example, of measures of quality of health care in the 2004 NHDR that could be tracked over time, data were available for blacks on all measures, for Hispanics on 95% of measures, for Asians on 63% of measures, and for American Indians and Alaska Natives on 55% of measures (Agency for Healthcare Research and Quality, 2004). Of measures of access to health care in the 2004 NHDR that could be tracked, data were available for blacks and Hispanics on all measures, for Asians on 84% of measures, and for American Indians and Alaska Natives on 52% of measures. Hence, compared with other groups, our ability to assess disparities faced by American Indians and Alaska Natives was severely limited.

To begin to fill gaps in data about health care disparities faced by American Indians and Alaska Natives, a better understanding of the reasons for these gaps is needed. Problems with data collection, reliability of estimates, or power to detect disparities may lend themselves to different interventions. In this paper, we use data gathered for the 2004 NHDR to identify and quantify gaps in data for American Indians and Alaska Natives and describe efforts and opportunities to close some of these gaps.

Methods

NHDR Measures

The measures examined in this paper come from the 2004 NHDR. The measures tracked in the NHDR were selected through an extensive process. The Agency for Healthcare Research and Quality (AHRQ), which houses the NHDR, issued a call for measures to Federal agencies. The Institute of Medicine (IOM) issued a complementary call for measures to the private sector. More than 600 measures were submitted for

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consideration in response to these calls. An Interagency Work Group, with representatives for across the Department of Health and Human Services, then evaluated these measures based on specific criteria:

- Importance—What is the impact on health associated with the health problem assessed by the measure? Are policymakers and consumers concerned about this area of health care quality? Can the health care system meaningfully address this aspect or problem?
- Scientific soundness—Does the measure actually reflect what it is intended to measure? Does the measure provide stable results across various populations and circumstances? Is there scientific evidence available to support the measure?
- Feasibility—Is the measure in use? Can information needed for the measure be collected in the scale and time frame required? How much will it cost to collect the data needed for the measure? Can the measure be used to compare different population groups?

Effort was also made to maximize consistency with existing consensus-based measure sets and to include both process measures that assess what happens to patients during their care and outcome measures that track what ultimately happens as a result of that care. A proposed measure set was published in the Federal Register for public comment and amended accordingly. Each year, the measure set is further refined in response to comments received from Federal partners, private stakeholders, and the public. The full 2004 NHDR quality measure set is listed in Appendix A and the full 2004 NHDR access measure set is listed in Appendix B.

Domains of Quality and Access

The domains of quality examined in the NHDR are based on a conceptual framework developed for AHRQ by the IOM (Institute of Medicine, 2001). In the NHDR, disparities in health care quality are examined across four domains:

- Effectiveness—Providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit;
- Safety—Avoiding injuries to patients from the care that is intended to help them;
• Timeliness—Reducing waits and sometimes harmful delays for both those who receive and those who give care; and
• Patient centered—Providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.

The domains of access examined in the NHDR are based on guidance received from the Interagency Work Group and from the IOM (Institute of Medicine, 2002). Disparities in health care access are examined across another four domains:
  • Entry barriers—Measures of the presence or absence of specific resources that enable entry into the health care system, such as having health insurance or a usual source of care;
  • Structural barriers—Measures of the presence or absence of specific resources that enable receipt of care within the health care system, such as having a provider with hours on nights or weekends or who can be contacted by telephone easily;
  • Patient satisfaction—Measures of patients’ perceptions of how well their providers interact with them; and
  • Health care utilization—Measures of the ultimate outcome of good access to care; i.e., the successful receipt of needed services.

In total, nineteen national databases were used to assess disparities across these domains of health care quality and access in the 2004 NHDR (Table 1). These databases include every major data source capable of providing nationally representative estimates of disparities in health care and that are conducted on a regular basis.

Analysis

In this paper, data gathered for the 2004 NHDR are analyzed to quantify the ability of national data to assess disparities among American Indians and Alaska Natives. Measures rather than data sources are used as the unit of analysis because our goal is to assess the capacity of extant data to provide information about disparities in health care quality and access faced by American Indians and Alaska Natives. Many measures used in the NHDR are restricted to individuals of specific ages or who have specific conditions. Often, data sources that are able to provide reliable estimates for the total American Indian and Alaska Native population
are unable to provide reliable estimates for the subgroups needed to assess quality and access.

Table 1
Databases Used to Assess Disparities in Quality of and Access to Health Care in the 2004 National Healthcare Disparities Report

<table>
<thead>
<tr>
<th>Surveys collected from samples of civilian, noninstitutionalized populations</th>
</tr>
</thead>
<tbody>
<tr>
<td>• AHRQ, Medical Expenditure Panel Survey (MEPS), 1999-2001</td>
</tr>
<tr>
<td>• CDC-NCHS, National Health Interview Survey (NHIS), 1999-2001</td>
</tr>
<tr>
<td>• CDC-NCHS/National Immunization Program, National Immunization Survey (NIS), 2000-2002</td>
</tr>
<tr>
<td>• SAMHSA, National Survey on Drug Use and Health (NSDUH), 2001-2002</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data collected from samples of health care facilities and providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>• CDC-NCHS, National Ambulatory Medical Care Survey (NAMCS), 1999-2001</td>
</tr>
<tr>
<td>• CDC-NCHS, National Hospital Ambulatory Medical Care Survey-Outpatient Department (NHAMCS-OPD), 1999-2001</td>
</tr>
<tr>
<td>• CDC-NCHS, National Hospital Ambulatory Medical Care Survey-Emergency Department (NHAMCS-ED), 1999-2001</td>
</tr>
<tr>
<td>• CDC-NCHS, National Hospital Discharge Survey (NHDS), 1998-2001</td>
</tr>
<tr>
<td>• CMS, End Stage Renal Disease Clinical Performance Measures Project (ESRD CPMP), 2001-2002</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data extracted from data systems of health care organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>• AHRQ, Healthcare Cost and Utilization Project State Inpatient Databases disparities analysis file (HCUP), 2001</td>
</tr>
<tr>
<td>• CMS, Medicare Patient Safety Monitoring System (MPSMS), 2002</td>
</tr>
<tr>
<td>• CMS, Nursing Home Minimum Data Set (MDS), 2002</td>
</tr>
<tr>
<td>• CMS, Quality Indicators program (CMS QIO), 2000-2001</td>
</tr>
<tr>
<td>• HIV Research Network data (HIVRN), 2001</td>
</tr>
<tr>
<td>• NIH, United States Renal Data System (USRDS), 1998-2001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data from surveillance and vital statistics systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>• CDC-National Center for HIV, STD, and TB Prevention, TB Surveillance System (CDC TBSS), 2000</td>
</tr>
<tr>
<td>• CDC-NCHS, National Vital Statistics System (NVSS), 2000-2001</td>
</tr>
<tr>
<td>• NIH, Surveillance, Epidemiology, and End Results (SEER) program, 1992-2001</td>
</tr>
</tbody>
</table>

This file is designed to provide national estimates of disparities in the AHRQ Quality Indicators using weighted records from a sample of hospitals from the following 22 States: AZ, CA, CO, CT, FL, GA, HI, KS, MD, MA, MI, MO, NJ, NY, PA, RI, SC, TN, TX, VA, VT, and WI.

Each measure included in the 2004 NHDR was assessed for one of three different data issues that could preclude use for assessing disparities faced by American Indians and Alaska Natives. Measures were classified as having:
GAPS IN DATA IN THE NHDR

- Collection issues, if data on American Indians and Alaska Natives were not collected;
- Estimation issues, if data were collected but estimates were unreliable because of small numbers of American Indians and Alaska Natives (< 30) or large relative standard errors (>30%);
- Power issues, if estimates were possible but relative differences compared with whites of 10% were not statistically significant with a two-tailed alpha of 0.05; and
- No problems, if none of these issues were present.

Results are presented by domain and by type of data.

Findings

Overall, of the 149 measures of quality of health care tracked in the 2004 NHDR, 42% could be used to assess disparities among American Indians and Alaska Natives (Table 2). Disparities could not be adequately assessed for 21% of measures due to collection issues, 22% due to estimation issues, and 14% due to power issues. Of the 60 measures of access to health care, 42% could be used to assess disparities among American Indians and Alaska Natives. Disparities could not be adequately assessed for 8% of measures due to collection issues, 30% due to estimation issues, and 20% due to power issues.

Gaps by Domain

The ability to assess disparities among American Indians and Alaska Natives differed across domains of quality and access. About half of measures of effectiveness, patient-centeredness, entry barriers, structural barriers, and patient satisfaction could be used to assess disparities among American Indians and Alaska Natives. However, none of the measures of patient safety and only two-thirds of measures of timeliness and health care utilization could be used. Collection issues prevented use of two-thirds of patient safety measures. Estimation issues prevented use of over a quarter of measures of patient safety, timeliness, entry barriers, and health care utilization. Power issues prevented use of over a quarter of measures of timeliness, patient-centeredness, structural barriers, and patient satisfaction.
Table 2

Measures in the 2004 NHDR With Collection, Estimation, or Power Issues by Quality and Access Domains and by Data Type

<table>
<thead>
<tr>
<th></th>
<th>Total Measures</th>
<th>Measures with Collection Issues</th>
<th>Measures with Estimation Issues</th>
<th>Measures with Power Issues</th>
<th>Measures with No Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>(%)</td>
<td>N</td>
<td>(%)</td>
<td>N</td>
</tr>
<tr>
<td>Quality Domains</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effectiveness</td>
<td>108</td>
<td>13 (12%)</td>
<td>22 (20%)</td>
<td>15 (14%)</td>
<td>58 (52%)</td>
</tr>
<tr>
<td>Patient Safety</td>
<td>28</td>
<td>19 (68%)</td>
<td>8 (29%)</td>
<td>1 (4%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Timeliness</td>
<td>9</td>
<td>0 (0%)</td>
<td>3 (33%)</td>
<td>3 (33%)</td>
<td>3 (33%)</td>
</tr>
<tr>
<td>Patient-Centeredness</td>
<td>4</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>2 (50%)</td>
<td>2 (50%)</td>
</tr>
<tr>
<td>All Quality Domains</td>
<td>149</td>
<td>32 (21%)</td>
<td>33 (22%)</td>
<td>21 (14%)</td>
<td>63 (42%)</td>
</tr>
<tr>
<td>Access Domains</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entry Barriers</td>
<td>18</td>
<td>0 (0%)</td>
<td>5 (28%)</td>
<td>4 (22%)</td>
<td>9 (50%)</td>
</tr>
<tr>
<td>Structural Barriers</td>
<td>6</td>
<td>0 (0%)</td>
<td>1 (17%)</td>
<td>2 (33%)</td>
<td>3 (50%)</td>
</tr>
<tr>
<td>Patient Satisfaction</td>
<td>7</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>3 (43%)</td>
<td>4 (57%)</td>
</tr>
<tr>
<td>Health care Utilization</td>
<td>29</td>
<td>5 (17%)</td>
<td>12 (41%)</td>
<td>3 (10%)</td>
<td>9 (31%)</td>
</tr>
<tr>
<td>All Access Domains</td>
<td>60</td>
<td>5 (8%)</td>
<td>18 (30%)</td>
<td>12 (20%)</td>
<td>25 (42%)</td>
</tr>
<tr>
<td>Data Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Person Survey</td>
<td>78</td>
<td>0 (0%)</td>
<td>31 (40%)</td>
<td>14 (18%)</td>
<td>33 (42%)</td>
</tr>
<tr>
<td>Hospital Discharge</td>
<td>46</td>
<td>37 (80%)</td>
<td>7 (15%)</td>
<td>2 (4%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Long-term Care</td>
<td>22</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>1 (5%)</td>
<td>21 (95%)</td>
</tr>
<tr>
<td>Quality Improvement</td>
<td>21</td>
<td>0 (0%)</td>
<td>8 (38%)</td>
<td>9 (43%)</td>
<td>4 (19%)</td>
</tr>
<tr>
<td>Population Data</td>
<td>20</td>
<td>0 (0%)</td>
<td>1 (5%)</td>
<td>0 (0%)</td>
<td>19 (95%)</td>
</tr>
</tbody>
</table>

Quality Domains: Effectiveness measures care that is based on scientific evidence and generally specific to patients with particular conditions (e.g., cancer). Patient safety measures care that avoids injuries to patients. Timeliness measures care that reduces waits and harmful delays. Patient-centeredness measures care that is respectful of and responsive to individual patient preferences, needs, and values.


Data Types: Person surveys include the Medical Expenditures Panel Survey, National Health Interview Survey, National Immunization Survey, Medicare Current Beneficiary Survey, and National Survey on Drug Use and Health. Hospital discharges include the Healthcare Cost and Utilization Project State Inpatient Databases and National Hospital Discharge Survey. Long-term care data include the Nursing Home Minimum Data Set and Home Health Agency Outcome and Assessment Information Set. Quality improvement data include the Medicare Quality Improvement Organization Program and Medicare Patient Safety Monitoring System. Population data include the National Vital Statistics System and various disease registries.

Notes: The assessment by data type does not include 22 measures which come from a variety of other data sources that are not listed.
Gaps by Data Type

Data in the 2004 NHDR came from many different sources: population-based surveys, hospital discharge data, long-term care data, quality improvement data, and population data from vital statistics systems and disease registries. The ability to assess disparities among American Indians and Alaska Natives differed across different types of data. About 40% of measures from person surveys could be used to assess disparities among American Indians and Alaska Natives; estimation issues were the major barriers to using these data. No measures from hospital discharge data could be used; collection issues were the major barriers. About 95% of long-term care and population measures could be used to assess disparities among American Indians and Alaska Natives. However, only about 20% of measures from quality improvement data could be used; estimation and power issues were the major barriers.

Discussion

In this paper, we identify significant gaps in the ability of extant data to assess health care disparities faced by American Indians and Alaska Natives. Overall, only 42% of measures tracked in the 2004 NHDR had American Indian and Alaska Native estimates that did not have significant issues related to collection, estimation, or power. Large gaps involved all domains of quality and access tracked in the NHDR; a thorough assessment of disparities faced by American Indians and Alaska Natives was not possible for any of these areas.

Data issues varied widely by data type. Population data based on vital statistics and disease registries were largely complete. Long-term care data also could be used to assess disparities among American Indians and Alaska Natives in most instances. Collection of data from Medicare and Medicaid certified nursing homes and home health agencies has been required by the Centers for Medicare & Medicaid Services since the 1990s.

In contrast, no estimates for American Indians and Alaska Natives were possible for measures based on hospital discharge data. This was largely attributable to the fact that many states do not identify American Indians and Alaska Natives in their hospital data. To begin to fill this gap and improve understanding of health care received by American Indians and Alaska Natives, AHRQ and the Indian Health Service (IHS) are collaborating on a project. This project brings together information from the IHS National Patient Information Reporting System (NPIRS) and the
AHRQ Healthcare Cost and Utilization Project (HCUP). Data from NPIRS about discharges from IHS and tribal hospitals (Indian Health Service, 2003b) allow estimates for American Indians and Alaska Natives living in IHS service areas, approximately 56% of the total U.S. American Indian and Alaska Native population (Indian Health Service, 2005). A number of States in HCUP that do collect information about American Indians and Alaska Natives have been identified. Work is currently underway to assess whether data from IHS hospitals and from community hospitals in HCUP with information on American Indians and Alaska Natives can be integrated and weighted to provide national American Indians and Alaska Natives estimates. If feasible, this work would begin to fill the gaps in hospital discharge data for American Indians and Alaska Natives and to allow assessment of disparities in patient safety, which relies heavily upon hospital data.

In addition, person-based surveys and quality improvement data need to be expanded. Options include increasing the numbers of American Indians and Alaska Natives represented in existing national data collections or initiating data collections that focus on American Indians and Alaska Natives, such as the 1987 Survey of American Indians and Alaska Natives (Johnson & Taylor, 1991). Reducing misclassification of American Indians’ and Alaska Natives’ race in vital statistics (Indian Health Service, 1996) and health care data (Escarce & McGuire, 2003; Korenbrot, Ehlers, & Crouch, 2003; Kozak, 1995) is also important. AHRQ is working with state governments and hospital associations to improve quality and uniformity of race/ethnicity reporting in statewide hospital data systems. IHS is also working with State vital statistics agencies to improve the reporting of American Indian and Alaska Natives on state death certificates (Groves et al., 2004).

The ability to track health care is critical for designing and targeting interventions to improve health care and reduce disparities and monitoring the success of these activities. National health care data too often fail to collect information from American Indians and Alaska Natives that is adequate for generating reliable estimates and assessing disparities experienced by these groups. Without improved data, gaps in the ability to assess disparities in health care among American Indians and Alaska Natives will remain, health care problems may go undetected, and opportunities for reducing disparities may be missed. It is important to reiterate that limited data is not justification for excluding American Indians and Alaska Natives from research on health care disparities.
Indians and Alaska Natives from national assessments of disparities like the NHDR. Data available for American Indians and Alaska Natives should be presented to identify disparities in need of redress and information gaps in need of remedy.

Ernest Moy, M.D., M.P.H.
Agency for Healthcare Research and Quality
540 Gaither Road
Rockville, MD 20850
Phone: (301) 427-1329
Fax: (301) 427-1341
E-mail: emoy@ahrq.gov

References


## Appendix A
### 2004 NHDR Quality of Health Care Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Effectiveness: Cancer</strong></td>
<td></td>
</tr>
<tr>
<td>Rate of breast cancers diagnosed at late stage</td>
<td>SEER</td>
</tr>
<tr>
<td>Rate of cervical cancers diagnosed at late stage</td>
<td>SEER</td>
</tr>
<tr>
<td>Rate of colorectal cancers diagnosed at late stage</td>
<td>SEER</td>
</tr>
<tr>
<td>Cancer deaths per 100,000 population per year for all cancers</td>
<td>NVSS</td>
</tr>
<tr>
<td>Cancer deaths per 100,000 male population per year for prostate cancer</td>
<td>NVSS</td>
</tr>
<tr>
<td>Cancer deaths per 100,000 female population per year for breast cancer</td>
<td>NVSS</td>
</tr>
<tr>
<td>Cancer deaths per 100,000 population per year for lung cancer</td>
<td>NVSS</td>
</tr>
<tr>
<td>Cancer deaths per 100,000 population per year for colorectal cancer</td>
<td>NVSS</td>
</tr>
<tr>
<td><strong>Effectiveness: Diabetes</strong></td>
<td></td>
</tr>
<tr>
<td>Adults with diabetes who had a hemoglobin A1c measurement at least once in past year</td>
<td>MEPS</td>
</tr>
<tr>
<td>Adults with diabetes who had a lipid profile in past two years</td>
<td>MEPS</td>
</tr>
<tr>
<td>Adults with diabetes who had a retinal eye examination in past year</td>
<td>MEPS</td>
</tr>
<tr>
<td>Adults with diabetes who had a foot examination in past year</td>
<td>MEPS</td>
</tr>
<tr>
<td>Adults with diabetes who had an influenza immunization in past year</td>
<td>MEPS</td>
</tr>
<tr>
<td>Hospital admissions for uncontrolled diabetes per 100,000 population</td>
<td>HCUP</td>
</tr>
<tr>
<td>Hospital admissions for short term complications of diabetes per 100,000 population</td>
<td>HCUP</td>
</tr>
<tr>
<td>Hospital admissions for long term complications of diabetes per 100,000 population</td>
<td>HCUP</td>
</tr>
<tr>
<td>Hospital admissions for lower extremity amputations in patients with diabetes per 1,000 population</td>
<td>NHDS</td>
</tr>
<tr>
<td><strong>Effectiveness: End Stage Renal Disease</strong></td>
<td></td>
</tr>
<tr>
<td>Hemodialysis patients with urea reduction ratio 65% or higher</td>
<td>ESRD CPMP</td>
</tr>
<tr>
<td>Hemodialysis patients with hemoglobin 11 or higher</td>
<td>ESRD CPMP</td>
</tr>
<tr>
<td>Hemodialysis patients with arteriovenous fistula as primary mode of vascular access</td>
<td>ESRD CPMP</td>
</tr>
<tr>
<td>Dialysis patients registered on the waiting list for transplantation</td>
<td>USRDS</td>
</tr>
<tr>
<td>Patients with treated chronic kidney failure who receive a transplant within 3 years of date of renal failure</td>
<td>USRDS</td>
</tr>
<tr>
<td><strong>Effectiveness: Heart Disease</strong></td>
<td></td>
</tr>
<tr>
<td>Current smokers age 18 and over receiving advice to quit smoking</td>
<td>MEPS</td>
</tr>
<tr>
<td>AMI patients administered aspirin within 24 hours of admission</td>
<td>CMS QIO</td>
</tr>
<tr>
<td>AMI patients with aspirin prescribed at discharge</td>
<td>CMS QIO</td>
</tr>
<tr>
<td>AMI patients administered beta-blocker within 24 hours of admission</td>
<td>CMS QIO</td>
</tr>
<tr>
<td>AMI patients with beta blocker prescribed at discharge</td>
<td>CMS QIO</td>
</tr>
</tbody>
</table>
## Appendix A
2004 NHDR Quality of Health Care Measures (continued)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Effectiveness: Heart Disease (continued)</strong></td>
<td></td>
</tr>
<tr>
<td>AMI patients with left ventricular systolic dysfunction prescribed ACE inhibitor at discharge</td>
<td>CMS QIO</td>
</tr>
<tr>
<td>AMI patients given smoking cessation counseling while hospitalized</td>
<td>CMS QIO</td>
</tr>
<tr>
<td>Heart failure patients with evaluation of left ventricular ejection fraction</td>
<td>CMS QIO</td>
</tr>
<tr>
<td>Heart failure patients with left ventricular systolic dysfunction prescribed ACE inhibitor at discharge</td>
<td>CMS QIO</td>
</tr>
<tr>
<td>Hospital admissions for congestive heart failure per 100,000 population</td>
<td>NHDS</td>
</tr>
<tr>
<td>Deaths per 1,000 adult admissions with acute myocardial infarction</td>
<td>HCUP</td>
</tr>
<tr>
<td>Deaths per 1,000 adult admissions with congestive heart failure</td>
<td>HCUP</td>
</tr>
<tr>
<td>Deaths per 1,000 adult admissions with coronary artery bypass surgery, age 40 and older</td>
<td>HCUP</td>
</tr>
<tr>
<td>Deaths per 1,000 adult admissions with percutaneous transluminal coronary angioplasty, age 40 and older</td>
<td>HCUP</td>
</tr>
<tr>
<td>Deaths per 1,000 admissions with abdominal aortic aneurysm repair</td>
<td>HCUP</td>
</tr>
<tr>
<td>Deaths per 1,000 pediatric heart surgery admissions, under age 18</td>
<td>HCUP</td>
</tr>
<tr>
<td><strong>Effectiveness: HIV and AIDS</strong></td>
<td></td>
</tr>
<tr>
<td>New AIDS cases per 100,000 population 13 and over</td>
<td>CDC HIV/ AIDS SR</td>
</tr>
<tr>
<td>HIV-infection deaths per 100,000 population</td>
<td>NVSS</td>
</tr>
<tr>
<td><strong>Effectiveness: Maternal and Child Health</strong></td>
<td></td>
</tr>
<tr>
<td>Pregnant women receiving prenatal care in first trimester</td>
<td>NVSS</td>
</tr>
<tr>
<td>Live born infants with low birth weight (&lt;2500 grams)</td>
<td>NVSS</td>
</tr>
<tr>
<td>Live born infants with very low birth weight (&lt;1500 grams)</td>
<td>NVSS</td>
</tr>
<tr>
<td>Infant mortality per 1000 live births, all</td>
<td>NVSS</td>
</tr>
<tr>
<td>Infant mortality per 1000 live births, birth weight &lt;1500 grams</td>
<td>NVSS</td>
</tr>
<tr>
<td>Infant mortality per 1000 live births, birth weight 1500-2499 grams</td>
<td>NVSS</td>
</tr>
<tr>
<td>Infant mortality per 1000 live births, birth weight &gt;2499 grams</td>
<td>NVSS</td>
</tr>
<tr>
<td>Maternal deaths per 100,000 live births</td>
<td>NVSS</td>
</tr>
<tr>
<td>Children age 19-35 months who received all recommended vaccines</td>
<td>NIS</td>
</tr>
<tr>
<td>Children age 19-35 months who received 4 doses of diphtheria-pertussis-tetanus vaccine</td>
<td>NIS</td>
</tr>
<tr>
<td>Children age 19-35 months who received 3 doses of polio vaccine</td>
<td>NIS</td>
</tr>
<tr>
<td>Children age 19-35 months who received 1 dose of measles-mumps-rubella vaccine</td>
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</tr>
<tr>
<td>Children age 19-35 months who received 3 doses of Haemophilus influenzae type B vaccine</td>
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<tr>
<td>Children age 19-35 months who received 3 doses of hepatitis B vaccine</td>
<td>NIS</td>
</tr>
<tr>
<td>Children age 19-35 months who received 1 dose of varicella vaccine</td>
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</table>
### Appendix A
#### 2004 NHDR Quality of Health Care Measures (continued)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Source</th>
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<tbody>
<tr>
<td><strong>Effectiveness: Maternal and Child Health (continued)</strong></td>
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<tr>
<td>Adolescents age 13-15 who received 3 or more doses of hepatitis B vaccine</td>
<td>NHIS</td>
</tr>
<tr>
<td>Adolescents age 13-15 who received 2 or more doses of measles-mumps-rubella vaccine</td>
<td>NHIS</td>
</tr>
<tr>
<td>Adolescents age 13-15 who received 1 or more doses of tetanus-diphtheria booster</td>
<td>NHIS</td>
</tr>
<tr>
<td>Adolescents age 13-15 who received 1 or more doses of varicella vaccine</td>
<td>NHIS</td>
</tr>
<tr>
<td>Hospital admissions for pediatric gastroenteritis per 100,000 population</td>
<td>HCUP</td>
</tr>
<tr>
<td>Children age 0-17 who had their height and weight measured by a doctor or other health provider</td>
<td>MEPS</td>
</tr>
<tr>
<td>Children age 2-17 with advice about physical activity</td>
<td>MEPS</td>
</tr>
<tr>
<td>Children age 2-17 with advice about eating healthy</td>
<td>MEPS</td>
</tr>
<tr>
<td>Children age 3-6 with a vision check</td>
<td>MEPS</td>
</tr>
<tr>
<td>Children age 0-17 with advice to parent or guardian about smoking in the house</td>
<td>MEPS</td>
</tr>
<tr>
<td>Children 0-40 lbs with advice to parent or guardian about using child car safety seats</td>
<td>MEPS</td>
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<tr>
<td>Children 40-80 lbs with advice to parent or guardian about using booster seats</td>
<td>MEPS</td>
</tr>
<tr>
<td>Children over 80 lbs with advice to parent or guardian about using lap and shoulder belts</td>
<td>MEPS</td>
</tr>
<tr>
<td>Children age 2-17 with advice about using helmets</td>
<td>MEPS</td>
</tr>
<tr>
<td>Children age 2-17 with a dental visit</td>
<td>MEPS</td>
</tr>
<tr>
<td><strong>Effectiveness: Mental Health</strong></td>
<td></td>
</tr>
<tr>
<td>Suicide deaths per 100,000 population</td>
<td>NVSS</td>
</tr>
<tr>
<td><strong>Effectiveness: Respiratory Diseases</strong></td>
<td></td>
</tr>
<tr>
<td>High risk adults age 18-64 who received influenza vaccine in past year</td>
<td>NHIS</td>
</tr>
<tr>
<td>Non-institutionalized adults age 65 and over who received influenza vaccine in the past year</td>
<td>NHIS</td>
</tr>
<tr>
<td>Hospital admissions for influenza per 100,000 population 65 and over</td>
<td>HCUP</td>
</tr>
<tr>
<td>High risk adults age 18-64 who ever received pneumococcal vaccination</td>
<td>NHIS</td>
</tr>
<tr>
<td>Non-institutionalized adults age 65 and over who ever received pneumococcal vaccination</td>
<td>NHIS</td>
</tr>
<tr>
<td>Pneumonia patients who have blood cultures taken before antibiotics</td>
<td>CMS</td>
</tr>
<tr>
<td>Pneumonia patients who receive initial antibiotic dose within 4 hours of arrival</td>
<td>CMS</td>
</tr>
<tr>
<td>Pneumonia patients who receive initial antibiotic consistent with current recommendations</td>
<td>CMS</td>
</tr>
<tr>
<td>Pneumonia patients who receive influenza screening or vaccination</td>
<td>CMS</td>
</tr>
<tr>
<td>Pneumonia patients who receive pneumococcal screening or vaccination</td>
<td>CMS</td>
</tr>
<tr>
<td>Deaths per 1,000 adult admissions with pneumonia</td>
<td>HCUP</td>
</tr>
<tr>
<td>Antibiotics prescribed at visits with a diagnosis of common cold per 10,000 population</td>
<td>NAMCS NHAMCS</td>
</tr>
<tr>
<td>Hospital admissions for asthma per 100,000 population under age 18</td>
<td>NHDS</td>
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## Appendix A
### 2004 NHDR Quality of Health Care Measures (continued)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Source</th>
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<tbody>
<tr>
<td><strong>Effectiveness: Respiratory Diseases</strong> (continued)</td>
<td></td>
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<tr>
<td>Hospital admissions for asthma per 100,000 population age 18 and over</td>
<td>NHDS</td>
</tr>
<tr>
<td>Tuberculosis patients who complete a curative course of treatment within 12 months of initiation of treatment</td>
<td>TBSS</td>
</tr>
<tr>
<td><strong>Effectiveness: Nursing Home and Home Health Care</strong></td>
<td></td>
</tr>
<tr>
<td>Long stay nursing home residents who have moderate to severe pain</td>
<td>MDS</td>
</tr>
<tr>
<td>Long stay nursing home residents who were physically restrained</td>
<td>MDS</td>
</tr>
<tr>
<td>Long stay nursing home residents who spend most of their time in bed or in a chair</td>
<td>MDS</td>
</tr>
<tr>
<td>Long stay nursing home residents who had a urinary tract infection</td>
<td>MDS</td>
</tr>
<tr>
<td>Long stay nursing home residents who are more depressed or anxious</td>
<td>MDS</td>
</tr>
<tr>
<td>Low risk long stay nursing home residents who lose control of their bowels or bladder</td>
<td>MDS</td>
</tr>
<tr>
<td>Low risk long stay nursing home residents who had a catheter inserted and left in the bladder</td>
<td>MDS</td>
</tr>
<tr>
<td>Short stay nursing home residents with delirium</td>
<td>MDS</td>
</tr>
<tr>
<td>Short stay nursing home residents who have moderate to severe pain</td>
<td>MDS</td>
</tr>
<tr>
<td>Short stay nursing home residents who have pressure sores</td>
<td>MDS</td>
</tr>
<tr>
<td>Home health care patients who get better at getting dressed</td>
<td>OASIS</td>
</tr>
<tr>
<td>Home health care patients who get better at taking their medication correctly</td>
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<tr>
<td>Home health care patients who get better at bathing</td>
<td>OASIS</td>
</tr>
<tr>
<td>Home health care patients who don’t get worse at bathing</td>
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</tr>
<tr>
<td>Home health care patients who get better at getting in and out of bed</td>
<td>OASIS</td>
</tr>
<tr>
<td>Home health care patients who get better at walking or moving around</td>
<td>OASIS</td>
</tr>
<tr>
<td>Home health care patients who get better at going to and from the toilet</td>
<td>OASIS</td>
</tr>
<tr>
<td>Home health care patients who have less pain when moving around</td>
<td>OASIS</td>
</tr>
<tr>
<td>Home health care patients who have less shortness of breath</td>
<td>OASIS</td>
</tr>
<tr>
<td>Home health care patients who have less urinary incontinence</td>
<td>OASIS</td>
</tr>
<tr>
<td>Home health care patients who are confused less often</td>
<td>OASIS</td>
</tr>
<tr>
<td>Home health care patients who had to be admitted to the hospital</td>
<td>OASIS</td>
</tr>
<tr>
<td>Selected infections due to medical care per 1000 discharges</td>
<td>HCP</td>
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<tr>
<td>Postoperative sepsisemia per 1000 elective surgical discharges of 4+ days</td>
<td>HCP</td>
</tr>
<tr>
<td>Medicare beneficiaries with central venous catheter-associated infection at insertion site</td>
<td>MPSMS</td>
</tr>
<tr>
<td>Medicare beneficiaries with central venous catheter-associated blood stream infection</td>
<td>MPSMS</td>
</tr>
<tr>
<td>Medicare beneficiaries with postoperative pneumonia</td>
<td>MPSMS</td>
</tr>
<tr>
<td>Medicare beneficiaries with postoperative urinary tract infection</td>
<td>MPSMS</td>
</tr>
<tr>
<td>Medicare beneficiaries with ventilator-associated pneumonia</td>
<td>MPSMS</td>
</tr>
<tr>
<td>Medicare beneficiaries with hospital-acquired blood stream infection</td>
<td>MPSMS</td>
</tr>
<tr>
<td>Postoperative hemorrhage or hematoma with surgical drainage or evacuation per 1000 surgical discharges</td>
<td>HCP</td>
</tr>
<tr>
<td>Postoperative pulmonary embolus or deep vein thrombosis per 1000 surgical discharges</td>
<td>HCP</td>
</tr>
<tr>
<td>Postoperative respiratory failure per 1000 elective surgical discharges</td>
<td>HCP</td>
</tr>
</tbody>
</table>
### Appendix A

#### 2004 NHDR Quality of Health Care Measures (continued)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Effectiveness: Nursing Home and Home Health Care</strong> (continued)</td>
<td></td>
</tr>
<tr>
<td>Postoperative physiologic/metabolic derangements per 1000 elective surgeries</td>
<td>HCUP</td>
</tr>
<tr>
<td>Complications of anesthesia per 1000 surgical discharges</td>
<td>HCUP</td>
</tr>
<tr>
<td>Decubitus ulcers per 1000 selected stays of 5 or more days</td>
<td>HCUP</td>
</tr>
<tr>
<td>Postoperative hip fractures per 1000 surgical discharges age 18 and over</td>
<td>HCUP</td>
</tr>
<tr>
<td>Medicare beneficiaries with postoperative pulmonary embolus or deep vein thrombosis</td>
<td>MPSMS</td>
</tr>
<tr>
<td>Medicare beneficiaries with central venous catheter-associated mechanical complication</td>
<td>MPSMS</td>
</tr>
<tr>
<td>Accidental laceration or puncture during procedure per 1000 discharges</td>
<td>HCUP</td>
</tr>
<tr>
<td>Iatrogenic pneumothorax per 1000 relevant discharges</td>
<td>HCUP</td>
</tr>
<tr>
<td>Reclosure of postoperative disruption of abdominal wall per 1000 abdominopelvic-surgery discharges</td>
<td>HCUP</td>
</tr>
<tr>
<td>Foreign body left in during procedure per 1000 discharges</td>
<td>HCUP</td>
</tr>
<tr>
<td>Birth trauma injury to neonate per 1000 selected live births</td>
<td>HCUP</td>
</tr>
<tr>
<td>Obstetric trauma per 1000 instrument-assisted deliveries</td>
<td>HCUP</td>
</tr>
<tr>
<td>Obstetric trauma per 1000 vaginal deliveries without instrument assistance</td>
<td>HCUP</td>
</tr>
<tr>
<td>Obstetric trauma per 1000 cesarean deliveries</td>
<td>HCUP</td>
</tr>
<tr>
<td>Deaths per 1000 admissions in low-mortality DRGs</td>
<td>HCUP</td>
</tr>
<tr>
<td>Deaths per 1,000 discharges with complications potentially resulting from care</td>
<td>HCUP</td>
</tr>
<tr>
<td>Persons with provider who does not usually ask about medications other doctors may give</td>
<td>MEPS</td>
</tr>
<tr>
<td><strong>Timeliness</strong></td>
<td></td>
</tr>
<tr>
<td>People who have a specific source of ongoing care</td>
<td>NHIS</td>
</tr>
<tr>
<td>People in fair or poor health who have a specific source of ongoing care</td>
<td>NHIS</td>
</tr>
<tr>
<td>People with a hospital, emergency room, or clinic as source of ongoing care</td>
<td>NHIS</td>
</tr>
<tr>
<td>Families that experience difficulties or delays in obtaining health care or do not receive needed care</td>
<td>MEPS</td>
</tr>
<tr>
<td>Families that experience difficulties or delays in obtaining health care due to financial or insurance reasons</td>
<td>MEPS</td>
</tr>
<tr>
<td>Adults who sometimes or never can get appointment for routine care as soon as wanted</td>
<td>MEPS</td>
</tr>
<tr>
<td>Adults who sometimes or never can get care for illness or injury as soon as wanted</td>
<td>MEPS</td>
</tr>
<tr>
<td>Pneumonia patients who receive initial antibiotic dose within 4 hours of arrival</td>
<td>CMS QIO</td>
</tr>
<tr>
<td>AMI patients administered aspirin within 24 hours of admission</td>
<td>CMS QIO</td>
</tr>
<tr>
<td><strong>Patient Centeredness</strong></td>
<td>MEPS</td>
</tr>
<tr>
<td>Adults whose providers sometimes or never listened carefully to them</td>
<td>MEPS</td>
</tr>
<tr>
<td>Adults whose providers sometimes or never explained things in a way they could understand</td>
<td>MEPS</td>
</tr>
<tr>
<td>Adults whose providers sometimes or never showed respect for what they had to say</td>
<td>MEPS</td>
</tr>
<tr>
<td>Adults whose providers sometimes or never spent enough time with them</td>
<td>MEPS</td>
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</table>
### Appendix B

#### 2004 NHDR Access to Health Care Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting Into the Health Care System</td>
<td></td>
</tr>
<tr>
<td>People under 65 with health insurance</td>
<td>NHIS</td>
</tr>
<tr>
<td>People under 65 with any private health insurance</td>
<td>NHIS</td>
</tr>
<tr>
<td>People 65 and over with any private health insurance</td>
<td>NHIS</td>
</tr>
<tr>
<td>People uninsured all year</td>
<td>MEPS</td>
</tr>
<tr>
<td>People with any period of uninsurance during the year</td>
<td>MEPS</td>
</tr>
<tr>
<td>People with any period of public insurance during the year</td>
<td>MEPS</td>
</tr>
<tr>
<td>People who have a specific source of ongoing care</td>
<td>NHIS</td>
</tr>
<tr>
<td>People in fair or poor health who have a specific source of ongoing care</td>
<td>NHIS</td>
</tr>
<tr>
<td>People with a hospital, emergency room, or clinic as source of ongoing care</td>
<td>NHIS</td>
</tr>
<tr>
<td>People without a usual source of care who indicate a financial or insurance reason for not having a source of care</td>
<td>MEPS</td>
</tr>
<tr>
<td>People who have a usual primary care provider</td>
<td>MEPS</td>
</tr>
<tr>
<td>Families that experience difficulties or delays in obtaining health care or do not receive needed care</td>
<td>MEPS</td>
</tr>
<tr>
<td>Families that experience difficulties or delays in obtaining health care due to financial or insurance reasons</td>
<td>MEPS</td>
</tr>
<tr>
<td>Families that did not receive a doctor’s care or prescription medications because the family needed the money</td>
<td>MEPS</td>
</tr>
<tr>
<td>Families not very satisfied that they can get health care if they need it</td>
<td>MEPS</td>
</tr>
<tr>
<td>People who sometimes or never get appointments for routine care as soon as wanted</td>
<td>MEPS</td>
</tr>
<tr>
<td>People who sometimes or never get care for illness or injury as soon as wanted</td>
<td>MEPS</td>
</tr>
<tr>
<td>Getting Care Within the Health Care System</td>
<td></td>
</tr>
<tr>
<td>People with provider who has office hours nights or weekends</td>
<td>MEPS</td>
</tr>
<tr>
<td>People with difficulty getting appointments on short notice</td>
<td>MEPS</td>
</tr>
<tr>
<td>People with difficulty contacting provider over the telephone</td>
<td>MEPS</td>
</tr>
<tr>
<td>Adults without problems getting referral to a specialist in past year</td>
<td>MEPS</td>
</tr>
<tr>
<td>People not very satisfied with professional staff at provider’s office</td>
<td>MEPS</td>
</tr>
<tr>
<td>People who usually wait over 30 minutes before seeing provider</td>
<td>MEPS</td>
</tr>
<tr>
<td>Patient Perceptions of Care</td>
<td></td>
</tr>
<tr>
<td>People with provider who usually asks about medications and treatments other doctors may give</td>
<td>MEPS</td>
</tr>
<tr>
<td>Adults whose providers sometimes or never listened carefully to them</td>
<td>MEPS</td>
</tr>
<tr>
<td>Adults whose providers sometimes or never explained things in a way they could understand</td>
<td>MEPS</td>
</tr>
<tr>
<td>Adults whose providers sometimes or never showed respect for what they had to say</td>
<td>MEPS</td>
</tr>
<tr>
<td>People not satisfied with quality of care received from provider</td>
<td>MEPS</td>
</tr>
<tr>
<td>Adults whose providers sometimes or never spent enough time with them</td>
<td>MEPS</td>
</tr>
<tr>
<td>Adults who rate their health care in the past year &lt;7 on a scale from 0 to 10</td>
<td>MEPS</td>
</tr>
</tbody>
</table>
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#### 2004 NHDR Access to Health Care Measures (continued)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Source</th>
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</thead>
<tbody>
<tr>
<td>Health Care Utilization</td>
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<tr>
<td>People with an office or outpatient visit in the past year</td>
<td>MEPS</td>
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<tr>
<td>People with a prescription medication in the past year</td>
<td>MEPS</td>
</tr>
<tr>
<td>People with a dental visit in the past year</td>
<td>MEPS</td>
</tr>
<tr>
<td>People with an emergency room visit in the past year</td>
<td>MEPS</td>
</tr>
<tr>
<td>People with an inpatient discharge in the past year</td>
<td>MEPS</td>
</tr>
<tr>
<td>Outpatient visits per 100 population</td>
<td>NHAMCS-OPD</td>
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<tr>
<td>Emergency department visits per 100 population</td>
<td>NHAMCS-ED</td>
</tr>
<tr>
<td>Total hospitalizations per 100 population</td>
<td>NHDS</td>
</tr>
<tr>
<td>Medicare beneficiaries 65 and over with Medicare-covered home health care</td>
<td>MCBS</td>
</tr>
<tr>
<td>Medicare beneficiaries under 65 with Medicare-covered home health care</td>
<td>MCBS</td>
</tr>
<tr>
<td>Medicare beneficiaries 65 and over with nursing home care in the past year</td>
<td>MCBS</td>
</tr>
<tr>
<td>Medicare beneficiaries under 65 with nursing home care in the past year</td>
<td>MCBS</td>
</tr>
<tr>
<td>Admissions for hypertension per 100,000 population 18 and older</td>
<td>HCUP</td>
</tr>
<tr>
<td>Admissions for angina per 100,000 population 18 and older</td>
<td>HCUP</td>
</tr>
<tr>
<td>Admissions for chronic obstructive pulmonary disease per 100,000 population 18 and older</td>
<td>HCUP</td>
</tr>
<tr>
<td>Admissions for bacterial pneumonia per 100,000 population</td>
<td>HCUP</td>
</tr>
<tr>
<td>Admissions for perforated appendix per 1,000 admissions with appendicitis</td>
<td>HCUP</td>
</tr>
<tr>
<td>Adults who received mental health treatment or counseling in the past year</td>
<td>NSDUH</td>
</tr>
<tr>
<td>Adults who received outpatient mental health treatment or counseling</td>
<td>NSDUH</td>
</tr>
<tr>
<td>Adults who received prescription medications for mental health treatment</td>
<td>NSDUH</td>
</tr>
<tr>
<td>Adults who received inpatient mental health treatment or counseling</td>
<td>NSDUH</td>
</tr>
<tr>
<td>Adults with serious mental illness who received mental health treatment or counseling</td>
<td>NSDUH</td>
</tr>
<tr>
<td>People age 12 and older who received illicit drug or alcohol abuse treatment in the past year</td>
<td>NSDUH</td>
</tr>
<tr>
<td>People age 12 and older who needed treatment for illicit drug use and who received such treatment in the past year</td>
<td>NSDUH</td>
</tr>
<tr>
<td>Hospitalizations for HIV per 10,000 population</td>
<td>NHDS</td>
</tr>
<tr>
<td>HIV patients with 4 or more ambulatory visits in the past year</td>
<td>HIVRN</td>
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<tr>
<td>HIV patients with CD4 &lt;50 with 4 or more ambulatory visits in the past year</td>
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</tr>
<tr>
<td>HIV patients with an inpatient hospitalization in the past year</td>
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</tr>
<tr>
<td>HIV patients with CD4 &lt;50 with an inpatient hospitalization in the past year</td>
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</table>