Compiling The Evidence: The National Healthcare Disparities Reports

These important reports contribute to the infrastructure needed to track progress toward eliminating disparities.

by Ernest Moy, Elizabeth Dayton, and Carolyn M. Clancy

Abstract: Disparities in health care have been described extensively in the literature. The next step in resolving this national problem is to develop the necessary infrastructure for monitoring and tracking disparities. The congressionally mandated National Healthcare Disparities Report begins to build this infrastructure. The 2003 report addressed many of the methodological challenges inherent in measuring disparities. The recently released 2004 report continues the process by summarizing the status of U.S. health care disparities and beginning to track changes over time. Both reports emphasize the need to integrate activities to reduce disparities and to improve the quality of health care.

For several decades, intense policy interest in clinical practice variation has inspired efforts to identify inappropriate variation: differences in care delivery that are not attributable to clinical differences in disease or patient preferences. Practice variations associated with race, ethnicity, socioeconomic status, geography, and other factors not attributable to clinical manifestations are prevalent, and they reflect suboptimal return on our investment in health care. Additionally, disparities in access to care may lead to inefficient and costly patterns of care and contribute to long-standing disparities in health status and outcomes.

To gather information about disparities in health and health care, Congress directed the Agency for Healthcare Research and Quality (AHRQ) to produce an annual report to track “prevailing disparities in health care delivery as they relate to racial factors and socioeconomic factors.” The first National Healthcare Disparities Report (NHDR), released in 2003, is a comprehensive national overview of disparities in access to and quality of health care among racial, ethnic, and socioeconomic groups. The recently released 2004 report adds another critical goal: tracking the nation’s progress toward elimination of disparities.

The NHDR and its companion report, the National Healthcare Quality Report...
(NHQR), are designed to provide policymakers with snapshots of disparities and quality in the United States and assessments of change over time. Providers and payers also may apply some of the tools used to create these reports to their own data, to assess their performance relative to national benchmarks.

This paper reviews evidence about disparities in health care covered in the 2004 NHDR. Our goals are to describe challenges inherent in understanding which factors are most important for explaining disparities, present selected findings from the report, and discuss the advantages of addressing disparities in health care as an integral component of health care quality improvement.

Challenges To Understanding Disparities

■ Defining “disparities.” To develop the NHDR, we had to address methodological limitations related to measurement and data. A key issue was defining “disparities,” since existing definitions vary widely. Healthy People 2010 offers this explanation: “In pursuit of the overarching goal of eliminating health disparities, all differences among populations in measures of health and healthcare are considered evidence of disparities.”4 In the Institute of Medicine (IOM) report Unequal Treatment, “disparities” are differences that remain after accounting for patients’ needs and preferences and the availability of health care.5 Still others associate health care disparities with adverse health outcomes, personal responsibility, or provider prejudice.

Because existing federal data needed to monitor and track disparities at the national level typically do not capture patients’ needs or preferences for care, we used a broad definition of “disparities” in the NHDR. Consistent with Healthy People 2010, any differences among populations are considered disparities.

■ Measurement issues. Based on IOM guidance, identical quality measures are used in the NHDR and NHQR. Most of these measures are relatively nondiscretionary. Three-quarters of the NHDR measures relate to effectiveness, typically with well-defined target populations based on need and clearly preferred treatment options based on rigorous scientific evidence. For example, recommendations for childhood vaccination apply to almost all children and are based on the deliberations of the Advisory Committee on Immunization Practices of the U.S. Centers for Disease Control and Prevention (CDC).6 Hence, lack of explicit information about patient need should have little impact on NHDR estimates.

In contrast, lack of information about patients’ preferences may affect estimates if different racial, ethnic, and socioeconomic groups tend to have different preferences. However, as noted in Unequal Treatment, until the perfect study controlling for all potential confounding factors is performed, it is reasonable to examine the consistency of disparities across existing studies.7 At a minimum, sizable differences associated with one or more patient characteristics raise important questions about subgroups at highest risk of poor-quality care.

Another measurement issue was how to handle the confounding effects of race, ethnicity, and socioeconomic status (SES).8 People included in racial and ethnic
minority subgroups tend to have lower incomes and less education than whites; hence, racial and ethnic disparities often are highly correlated with SES disparities. To distinguish between the two types of disparities, the NHDR includes stratified and multivariate analyses when possible.

Multivariate analyses adjust for age, sex, race, ethnicity, household income, education, insurance, and residence location as appropriate. Stratified analyses identify groups by race, ethnicity, and SES that often experience the largest quality problems. For example, many racial and ethnic disparities in initiation of prenatal care in the first trimester persist even after stratification by education (Exhibit 1). Only college-educated white women achieved the Healthy People 2010 goal of 90 percent. Black, Native Hawaiian and other Pacific Islander (NHOPI), and American Indian and Alaska Native (AI/AN) women who did not graduate from high school had the lowest rates of early prenatal care and could gain the most from targeted interventions.

Numerous examples of multivariate and stratified analyses are included in the NHDR. This approach does not identify the mechanisms by which race, ethnicity, and SES interact to affect health care. A better understanding of these interrelated factors would aid in the development of more effective programs for reducing disparities and improving health care quality.

Data issues. We also encountered many data issues that had to be addressed in producing the NHDR. Specific racial, ethnic, and socioeconomic groups often are not identifiable in national surveys. Federal agencies had until 2003 to be compliant with new federal guidelines for the collection of race and ethnicity data that created the “NHOPI” category and allowed respondents to choose more than one race.9 Be-

---

EXHIBIT 1
Mothers With Prenatal Care In The First Trimester, By Race And Ethnicity, Stratified By Education, 2001

<table>
<thead>
<tr>
<th>Percent</th>
<th>Race</th>
<th>Ethnicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>White</td>
<td>NHOPI</td>
</tr>
<tr>
<td>80</td>
<td>Black</td>
<td>AI/AN</td>
</tr>
<tr>
<td>60</td>
<td>Asian</td>
<td>Hispanic</td>
</tr>
<tr>
<td>40</td>
<td>Less than high school</td>
<td>Non-Hispanic white</td>
</tr>
<tr>
<td>20</td>
<td>High school graduate</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Any college</td>
<td></td>
</tr>
</tbody>
</table>


**NOTES:** NHOPI is Native Hawaiian/other Pacific Islander. AI/AN is American Indian/Alaska Native. The reference population is women with live births.
cause NHDR data were collected before 2003, estimates for multiple-race and NHOPI people were not possible for most measures.

Even when data are collected on specific groups, the data are not always comparable. Statewide data organizations often report race and ethnicity as a single field in their hospitalization data. People are identified as white or Hispanic but not both, which differs from federal standards. In addition, a patient’s race and ethnicity may be assigned by a hospital worker instead of being collected through self-identification. In the absence of federal standards for collection of socioeconomic data, different data sources often collect different income and education variables, again complicating comparisons.

When collected in a comparable fashion, data for specific racial and ethnic groups often are insufficient to generate reliable estimates because of small samples. These effects are magnified in attempts to assess disparities within groups, such as women and children. Across the 150 measures of quality tracked, reliable estimates for blacks and Hispanics were possible for more than 90 percent of measures. Reliable estimates for Asians and Pacific Islanders were possible for about three-quarters of measures; for AI/ANs, for about half of measures. However, reliable estimates were possible for less than one-fifth of measures for NHOPI and multiple-race people. Even fewer data are collected on racial and ethnic subgroups (for example, by national origin).

Noncontinuous data collection and data gaps make it difficult to track disparities over time. For most measures, the NHDR is able to analyze developments for only two or three years, a period too brief to reveal many changes. However, some changes are evident. Receipt of all recommended vaccinations by children ages 19–35 months is tracked from 2000 to 2002 (Exhibits 2 and 3). In all three years, the proportion of children receiving all recommended vaccines was lower among blacks than whites; Hispanics than non-Hispanic whites; and poor, near-poor, and middle-income than high-income children. Vaccination improved among Asian, Hispanic, and high-income children between 2000 and 2002.

Despite these challenges, data collection is improving as health care disparities gain attention. For example, in 2002 a primary NHDR data source, the Medical Expenditure Panel Survey (MEPS), added large oversamples of Asians and low-income people, as well as new survey questions about language and cultural competence. Further, the revolution in health information technologies will allow faster, more efficient, more secure, and more economical collection of needed data.

**Findings From The 2004 Disparities Report**

- **Addressing the challenges.** To address challenges posed by inconsistent definitions, measurement problems, and variations in data standards, the general methodological approach of the NHDR is to examine many measures from a variety of national data sources, standardize data and comparisons whenever possible, and apply uniform and rigorous thresholds for identifying differences. Based on the consis-
tency of disparities across measures, the 2003 NHDR concluded that inequalities persist at the national level.

Building upon the 2003 report, efforts to summarize disparities and track changes over time are refined in the 2004 report. To begin to quantify disparities systematically, a subset of measures for which comparable data are available for 2000 and 2001 are highlighted. This subset consists of thirty-eight measures of health care effectiveness (Exhibit 4). For each measure, racial, ethnic, and socio-economic groups are compared with an appropriate reference group.11

EXHIBIT 2
Children Ages 19–35 Months Who Received All Recommended Vaccines, By Race And Ethnicity, 2000–2002

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>80</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>Black</td>
<td>80</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>Asian</td>
<td>80</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>AI/AN</td>
<td>80</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>More than 1</td>
<td>80</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>Non-Hispanic</td>
<td>80</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>Hispanic</td>
<td>80</td>
<td>60</td>
<td>40</td>
</tr>
</tbody>
</table>

**SOURCE:** National Immunization Survey, 2000–2002
**NOTES:** AI/AN is American Indian/Alaska Native. The reference population is children ages 19–35 months in the civilian, noninstitutionalized population. Recommended vaccines for this age group include four doses of DTaP vaccine, three doses of polio vaccine, one dose of MMR vaccine, 3 doses of *H. influenzae* type B vaccine, and three doses of hepatitis B vaccine.

EXHIBIT 3
Children Ages 19–35 Months Who Received All Recommended Vaccines, By Family Income Level, 2000–2002

<table>
<thead>
<tr>
<th>Income Level</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>80</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>Middle</td>
<td>80</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>Near-poor</td>
<td>80</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>Poor</td>
<td>80</td>
<td>60</td>
<td>40</td>
</tr>
</tbody>
</table>

**SOURCE:** National Immunization Survey, 2000–2002
**NOTES:** AI/AN is American Indian/Alaska Native. The reference population is children ages 19–35 months in the civilian, noninstitutionalized population. Recommended vaccines for this age group include four doses of DTaP vaccine, three doses of polio vaccine, one dose of MMR vaccine, 3 doses of *H. influenzae* type B vaccine, and three doses of hepatitis B vaccine.
Disparities are pervasive. The principal finding of the 2004 NHDR is that disparities in quality are pervasive at the national level. Minorities and the poor more often receive lower-quality care across an array of measures (Exhibit 5). Blacks receive poorer quality of care for about two-thirds and AI/ANs, for about one-third of
quality measures, compared with whites. For about half of the quality measures, Hispanics receive lower quality of care than non-Hispanic whites. The poor receive lower quality of care compared with high-income people for about 60 percent of the measures. In contrast, Asians/Pacific Islanders receive better quality of care compared with whites for about one-third of quality measures.

**Improvement is possible.** The 2004 NHDR also found that improvement is possible. For example, the report documents the absence of racial, ethnic, and socioeconomic disparities among people who receive care in community health centers. However, change is slow. Although many measures of quality improved between 2000 and 2001, improvement often included many racial, ethnic, and socioeconomic groups in parallel; disparities generally persisted despite overall improvements. Among blacks, Hispanics, and the poor, most disparities observed in 2000 persisted in 2001 (Exhibit 6). Among blacks, Asians/Pacific Islanders, and AI/ANs, the number of disparities increased from 2000 to 2001.

Findings from the NHDR can be used to increase general awareness about disparities and inspire action. The report offers analyses that policymakers and providers can use to target reforms, track results, and identify best practices. Findings also provide national benchmarks against which government agencies, communities, and providers can compare their health care data and progress.

However, national findings may mask large variations in disparities nationwide. Disparities that are significant nationally may not exist in some communities but may be substantial in others. Apparent inertia in reducing disparities at the na-
tional level likely reflects sizable improvement in some communities and worsening disparities in others. Further, while some interventions may be effective nationally, others should be tailored to specific populations in specific communities. Change occurs locally, and population subgroups vary geographically. Hence, community analyses are important for developing efficient strategies for reducing disparities. For example, because most black patients are seen by a relatively small fraction of providers, interventions focused on these providers could have a particularly strong impact on disparities for blacks. Communities and providers can use the NHDR measures and methods to identify their most serious disparities, target interventions, and track their progress against national standards.

The Quality And Disparities Chasms

One key insight gained from planning and producing the NHDR and NHQR is that quality and disparities are not isolated phenomena. Instead, they are integrally related concepts that benefit from coordinated interventions. In its report Crossing the Quality Chasm, the IOM recognized six dimensions of high-quality health care: effectiveness, safety, timeliness, patient-centeredness, efficiency, and equity. Although most of these dimensions have been the subject of study and intervention, equity has received little attention by the quality improvement (QI) community. QI efforts often do not explicitly identify elimination of disparities as an essential component. This apparent oversight misses an important opportunity because many potential synergies exist between activities to reduce disparities and improve quality.

- **Focusing on disparities to improve quality.** The disparities perspective may provide useful information to hone QI activities. Examining disparities may help identify the largest quality deficiencies and foster development of focused interventions for these problems. Although the gap between high-quality and actual care has
been described as a chasm, the size of this chasm varies between groups. For the
general population, there is a gap between ideal care and care received, but there is
also a gap between advantaged and disadvantaged populations. These gaps com-
 pound forming the chasm between the actual care received by disadvantaged
groups, including minorities and people of lower SES, and ideal high-quality health
care. Targeting interventions for these disadvantaged groups may be a more efficient
strategy to improve quality.

Analyses of disparities also may be useful in identifying achievable quality
goals. Although different facilities may vary in their ability to maximize quality of
care, it should be possible for all groups within a facility to do as well as the
best-performing group. Additionally, facilities or communities with few dispari-
ties can provide valuable insight into factors that reduce disparities and interven-
tions that have proved effective and warrant expansion.

Further, it may be necessary to take disparities into consideration to interpret
public reporting fairly. Public reports of quality may be misinterpreted if they lack
information about the demographic profile of the populations they serve. The in-
creasing unreliability of further stratifying public reports does not mitigate this
challenge, but it should prompt debate about what level of aggregation (for exam-
ple, facility, county, state, or region) is most meaningful.

- Building on quality improvement to reduce disparities. The existing QI in-
frastucture is well developed and can be adapted to address disparities: (1) Numer-
ous organizations exist to promote and advance quality improvement. (2) Priority
conditions for quality improvement and measures to track quality have been identi-
fied through consensus.16 (3) Quality report cards and other tools for public report-
ing have been produced and disseminated to consumers, providers, and purchas-
ers.17 (4) A strategic plan for a national quality measurement and reporting system
has been developed.18 Most of these QI activities are applicable or adaptable for ad-
dressing disparities. For example, most priority conditions for quality improvement,
quality-of-care measures, and tools for public reporting are relevant to multiple
groups.19

Many organizations have appreciated the synergies between disparities and
quality. For example, the Health Resources and Services Administration (HRSA)
created Health Disparity Collaboratives to eliminate disparities in health centers.
The success of this program is evident in the absence of significant disparities and
the sustained improvements in quality of care delivered by participating centers.20

The Centers for Medicare and Medicaid Services (CMS) began the End-Stage
Renal Disease Clinical Performance Measures Project to track and improve the
quality of dialysis services provided under Medicare. This led to both improve-
ments in dialysis care and reductions in disparities related to race and sex.21
Starting in 2005, the CMS will require Quality Improvement Organizations
(QIOs) to begin work on reducing disparities in chronic illness care in physicians’
offices.
Extending pioneering work done by Aetna on the collection of data on race and ethnicity, ten of the leading U.S. health plans have joined with AHRQ and the Robert Wood Johnson Foundation (RWJF) to form the National Health Plan Learning Collaborative to Reduce Disparities and Improve Quality. Similarly, the Health Research and Educational Trust (HRET) partnered with six premier hospitals and the Commonwealth Fund to examine disparities and design and implement effective interventions through the new project, Eliminating Disparities through Community and Hospital Efforts. In another effort, the Center for Health Care Strategies formed the Best Clinical and Administrative Practices Group, comprising twelve Medicaid managed care teams working with consumers, providers, and state purchasers to assess and address disparities.

Future work. Despite these successes at integrating quality improvement and reduction of disparities, much work remains. Existing quality measures need to be validated in different populations, and new measures are needed to address the unique health care needs of specific groups. Methods are needed for summarizing disparities across measures and groups. As recommended by the National Research Council, data on racial, ethnic, and SES disparities need improvement.22 Public reporting on quality should account for differences in patient populations. Information for different groups should be produced when feasible, although reliable estimates for many groups will not be possible at the provider or facility level.

Research by AHRQ’s Excellence Centers to Eliminate Ethnic/Racial Disparities (EXCEED) and the National Center on Minority Health and Health Disparities (NCMHD) can be used as a foundation. EXCEED programs analyze underlying causes for disparities in health care and implement strategies to reduce disparities. For example, the EXCEED program at the Medical University of South Carolina demonstrated that voluntary primary care audit and feedback can improve control of cardiovascular risk factors, but people with multiple cardiovascular risks, particularly women and blacks, may require specifically tailored treatment guidelines to achieve desired levels of control.23

The NCMHD leads the National Institutes of Health (NIH) research effort to reduce health disparities. Activities include the Endowment Program to strengthen the capacity of health disparities research, the Centers of Excellence Program to develop an infrastructure for disparities research at academic institutions, the Research Infrastructure in Minority Institutions Program to assist non–doctoral degree institutions in developing a research infrastructure, and the Loan Repayment Program to increase the number of health professionals conducting health disparities research.

Additionally, the NCMHD partners with other NIH institutes to identify and address risk factors for disparate health outcomes. For example, the NCMHD and National Eye Institute cofunded the Los Angeles Latino Eye Study. This study found that half of Latinos with diabetes age forty and older had diabetic retinopathy and that many were undiagnosed.24
More work is required to understand the root causes of disparities and how these relate to the root causes of quality problems.\textsuperscript{25} Causes common to both disparities and quality problems would likely be ideal targets for intervention. In addition, objective evaluations of interventions are needed to answer several fundamental questions: (1) How can synergies between disparities and quality improvement best be exploited? (2) When should QI interventions be applied broadly with the expectation that all groups will improve (a rising tide raises all boats), and when will tailored interventions be needed? (3) Recognizing that health care is sometimes segregated, should quality interventions target specific patient groups or specific provider groups with the most room for improvement? (4) Should quality interventions target affluent patients and providers who may be better able to sustain costs of higher-quality care with the expectation that improvements will diffuse to disadvantaged populations? (5) Is a combination of approaches more effective than a single strategy?

As knowledge about disparities in health care and the commitment to reducing them continue to grow, our ability to monitor and track improvements in disparities will become critical. Work begun in the 2003 NHDR to build the information infrastructure needed to track the nation’s progress toward eliminating disparities in health care is continued and expanded in the 2004 NHDR. Future editions will continue to build on advances in quality improvement and leverage the natural synergies that exist between efforts to improve quality and efforts to reduce disparities. Working together, using the NHDR as a guide, U.S. patients, providers, purchasers, and policymakers can make full access to high-quality health care a reality for all.

The views expressed in this paper are those of the authors and do not necessarily reflect the official position of the Agency for Healthcare Research and Quality or the U.S. Department of Health and Human Services.

NOTES
7. Smedley et al., eds., Unequal Treatment.

11. The following data sources were used for the NHDR summary measure: the Surveillance, Epidemiology, and End Results (SEER) program; the U.S. Renal Data System (USRDS); the Medical Expenditure Panel Survey (MEPS); the CDC AIDS Surveillance System; the National Vital Statistics System–Nativity (NVSS-N); the National Immunization Survey (NIS); the National Health Interview Survey (NHIS); and the National Hospital Discharge Survey (NHDS). Each racial, ethnic, or income group could receive care that is poorer than, about the same as, or better than the comparison group. Data on all measures were not available for all groups. Because these databases vary greatly in size and scope, two criteria were used to assess importance: statistical significance and the relative magnitude of differences. Only relative differences of at least 10 percent that are statistically significant at the 5 percent level are discussed. Without the magnitude criterion, many small differences from large databases would be labeled as significant.

12. The NHDR defines “poor” as those with household incomes below 100 percent of the federal poverty level and “high income” as those with household incomes 400 percent of poverty or higher. The federal poverty level for a family of four in 2003 was $18,400.


