Measuring Racial And Ethnic Disparities in Health Using Data from the National Health Interview Survey

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OBJECTIVES

• Overview of NHIS
  • Examples of NHIS data
  • Summary of issues

• Measuring race and ethnicity under new OMB standards
  • Examples of NHIS data under new standards
  • Summary of issues

• Future directions for the NHIS
Overview of the National Health Interview Survey

- Annual survey conducted by the Census Bureau for the National Center for Health Statistics (NCHS)
- Nationally representative sample of the non-institutionalized civilian population
- Multi-stage probability sample with stratified, cluster design
- Approximately 40,000 households with 1,000,000 persons each year
Overview, cont’d

• Sample design revised every 10 years following the Decennial Census (1995-2004, 2005-2014)
• Most recent sample design oversamples Black and Hispanic households in high density areas
• Household-based interview administered face-to-face via CAPI
• Full Spanish translation of NHIS available beginning in 1998 (prior limited use)
• Questionnaire redesign in 1997
Basic NHIS Module Topic Areas

- Activity Limitations
- Injuries
- Conditions
- Health Behaviors
- Access to Health Care
- Utilization
- Health Insurance
- Demographics
- Income & Assets
- Family Composition
Topical Modules

- Analogous to Supplements from “old” NHIS
- Added flexibility: can address new or specific topics as public health issues arise
- Examples: Prevention, 1998 (Year 2000 Objectives); Prevention, 2001 (baseline for 2010 Objectives), Cancer, 2000
Non-health NHIS measures

- **Household composition** - family size, family relationships
- **Demographics** - age, marital status, ethnicity (Hispanic origin), race (3 AIAN groups, 6 Asian groups, 4 NHOPI groups, single and multiple race, primary race)
- **Socioeconomic status** – sources of income (family and individual), source of public assistance income, highest level of education attained, occupation
- **Geography** – urban/rural residence, Census region of residence, state of residence, residence in an MSA
Non-health NHIS measures, cont’d

- **Acculturation (proxy measures)** – length of time in the U.S., year came to the U.S., number of years in the U.S., language of interview (Spanish, English, other)

- **Nativity** – state/country of birth, citizenship

- **Contextual** – percent black/Hispanic/Asian, percent with 9th grade education or better, median income (census tract level)
Examples of NHIS data used to assess disparities among racial/ethnic groups
Asthma measures for children age 17 and under: U.S., 1997

- Ever had asthma
- Had asthma attack in past 12 mo.

SOURCE: 1997 NHIS, Summary Health Statistics

SOURCE: 1997 NHIS, Summary Health Statistics
Respondent assessed health status for Asian/Pacific Islander and NH White population groups: U.S., 1992-1994

SOURCE: Kuo, Porter, NCHS 1998

SOURCE: Hajat, Lucas, Kington, 2000
Concentration of black population in the census tract by race, nativity status: U.S., 1992-1995

Other uses of NHIS data to examine racial/ethnic disparities in health

- **Linked file analyses:**
  - **Linked NHIS-NDI** – relationship between health behaviors/preventive health measures and mortality;
  - **Linked NHIS-NSFG** – effects of marital history on health status

- **Multivariate analyses**
  - Do family structure and characteristics predict child health status?
  - Are socioeconomic and demographic factors associated with differential health status among US and foreign born Black and white persons?
Issues related to using NHIS data to assess racial/ethnic disparities in health

- Single year of data for largest groups only – Hispanic, NH White, NH, Black, NH Other (includes API, AIAN)
- Smaller subpopulation group analyses require 2 or more years of data (sample size, precision of estimates)
- Confidentiality requirements restrict the amount of information available on public use data files – some detailed/disaggregated data must be obtained through the RDC
Issues related to using NHIS data, cont’d

• Limited oversampling of smaller racial/ethnic populations
• Cultural competency, non-Spanish languages spoken in the home, language proficiency, and acculturation – limited/no data
• Limited translation of the survey - Spanish only, others ad lib
Measurement of race and ethnicity

- *Central to the issue of assessing racial and ethnic disparities:*
  - measure health outcomes for new population groups
  - maintain trends in data to monitor changes in health outcomes over time
  - assess whether observed population changes are the result of changes in classification of groups or actual behavior changes/successful program interventions
What are the new OMB standards for federal race and ethnicity data collection

• Revised categories:
  • White, Black/African American, American Indian or Alaska Native (AIAN), Native Hawaiian or Other Pacific Islander (NHOPI) [new], Asian [new]
  • Hispanic origin (Hispanic/Latino)
    • Ask prior to and separately from race
What are the most important effects of the new standards?

- Changes in tabulation and presentation of data
  shifts in people reported in particular categories
- Changes in trend data
  monitoring new groups creates breaks in data
- Changes in the interpretation of data for racial/ethnic groups
  need to understand the effect of reporting and interpreting data for groups whose composition may be changing over time
Distribution of racial groups in the NHIS, 1997-1999

SOURCE: CDC/NCHS: National Health Interview Survey; weighted estimates.
Age distribution of single race groups, 1998 NHIS

SOURCE: CDC/NCHS, 1998 NHIS (weighted data)
Age distribution of multiple race groups, 1998 NHIS

SOURCE: CDC/NCHS, 1998 NHIS (weighted data)
Private health insurance coverage for single and multiple race groups, 1998 NHIS

<table>
<thead>
<tr>
<th>Race:</th>
<th>1997 Standards</th>
<th>1977 Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>SE</td>
</tr>
<tr>
<td><strong>White only</strong></td>
<td>76.1</td>
<td>.33</td>
</tr>
<tr>
<td><strong>Black only</strong></td>
<td>54.2</td>
<td>.95</td>
</tr>
<tr>
<td><strong>AIAN only</strong></td>
<td>44.1</td>
<td>4.63</td>
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<tr>
<td><strong>API only</strong></td>
<td>70.5</td>
<td>1.56</td>
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<tr>
<td><strong>Multiple race total</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black/White</td>
<td>57.5</td>
<td>5.28</td>
</tr>
<tr>
<td>AIAN/White</td>
<td>53.8</td>
<td>4.16</td>
</tr>
<tr>
<td>API/White</td>
<td>74.7</td>
<td>4.86</td>
</tr>
</tbody>
</table>

**SOURCE:** CDC/NCHS; 1998 National Health Interview Survey, weighted estimates
## Percent distribution of primary race group selected by largest multiple race groups

<table>
<thead>
<tr>
<th></th>
<th>AIAN/White</th>
<th>API/White</th>
<th>Black/White</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>81.6</td>
<td>74.6</td>
<td>39.1</td>
</tr>
<tr>
<td>Black</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>AIAN</td>
<td>16.5</td>
<td>19.6</td>
<td>------</td>
</tr>
<tr>
<td>API</td>
<td>------</td>
<td>------</td>
<td>48.7</td>
</tr>
<tr>
<td>Multiple race</td>
<td>1.8</td>
<td>5.7</td>
<td>12.7</td>
</tr>
</tbody>
</table>

SOURCE: CDC/NCHS, 1997 and 1998 National Health Interview Survey (weighted, age-adjusted)
Issues related to measurement of race/ethnicity in the NHIS

• Maintaining trends in health data by race:
  • will require the use of some bridging method (NHIS question may work best for now because of self-allocation)
  • as multiple race groups get larger, bridging methods will be less useful – mo may require starting new trends
Issues related to measurement of race, cont’d

• *Interpretation of data under the new standards:*
  • measuring new population groups - NHOPi and the multiple race groups - whose characteristics and patterns of illness and disease appear to be distinct and must be studied further
  • racial/ethnic identity - fluid, not fixed - changes our concept of race; substantive meaning of primary race
  • relationship between race and health in epidemiologic analyses increasingly more complex
Other uses of NHIS data to examine race/ethnicity reporting

- **Linked file analyses:**
  - Consistency of race reporting in the linked NHIS-NSFG
  - Use of NHIS data to develop a bridging method for vital statistics data

- **Multivariate analyses**
  - Demographic and health profile of multiple race persons in the U.S. – NHIS data 1997-2000
Future directions for the NHIS

• Examining over sampling of Asian population subgroups
• Consideration of targeted sampling to study smaller groups like AIAN, NHOPI for whom health data is needed
• Cognitive work to examine commitment to a racial identity (primary race vs. multiple race); experiences with discrimination in seeking/receiving health care
Web site information

- National Health Interview Survey information:
  http://www.cdc.gov/nchs/nhis.htm

- Office of Management and Budget Guidelines for the Collection of Data on Race and Ethnicity:
  http://www.whitehouse.gov/OMB/inforeg