# The Use of Census Data for Health Workforce Analysis

**Presentation to the
Health Workforce Meeting of the
Annual Research Meeting of AcademyHealth**

**San Diego, CA
June 5, 2004**

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# *The Center for Health Workforce Studies at the University at Albany*

- Conducts studies of the supply, demand, use and education of the health workforce

- Committed to collecting and analyzing data to understand workforce dynamics and trends

- Goal to inform public policies, the health and education sectors and the public

- One of six regional centers with a cooperative agreement with HRSA/Bureau of Health Professions

# Topics of Discussion

- Census basics

- What is PUMS?

- What kinds of health workforce research can be done with PUMS?

- PUMS geography

# Census Basics

- The U.S. Census of the population is conducted every ten years (decennial)

- Most households receive a brief Census form ("the short form") asking for very basic demographic information.

- 1 in 6 households receives "the long form", which asks for detailed information about the household and all its members.

# What is PUMS?

- PUMS = Public Use Microdata Sample
- "Long form" Census data
- Available for 5% of the U.S. population
- One record for every individual, containing all information for that individual

# Why is PUMS an important source of health workforce data?

- **Possibly the largest source of information about Americans working in health occupations or industries**
  - Over 615,000 people working in health professions/occupations
  - Over 1.6 million people working in health industries

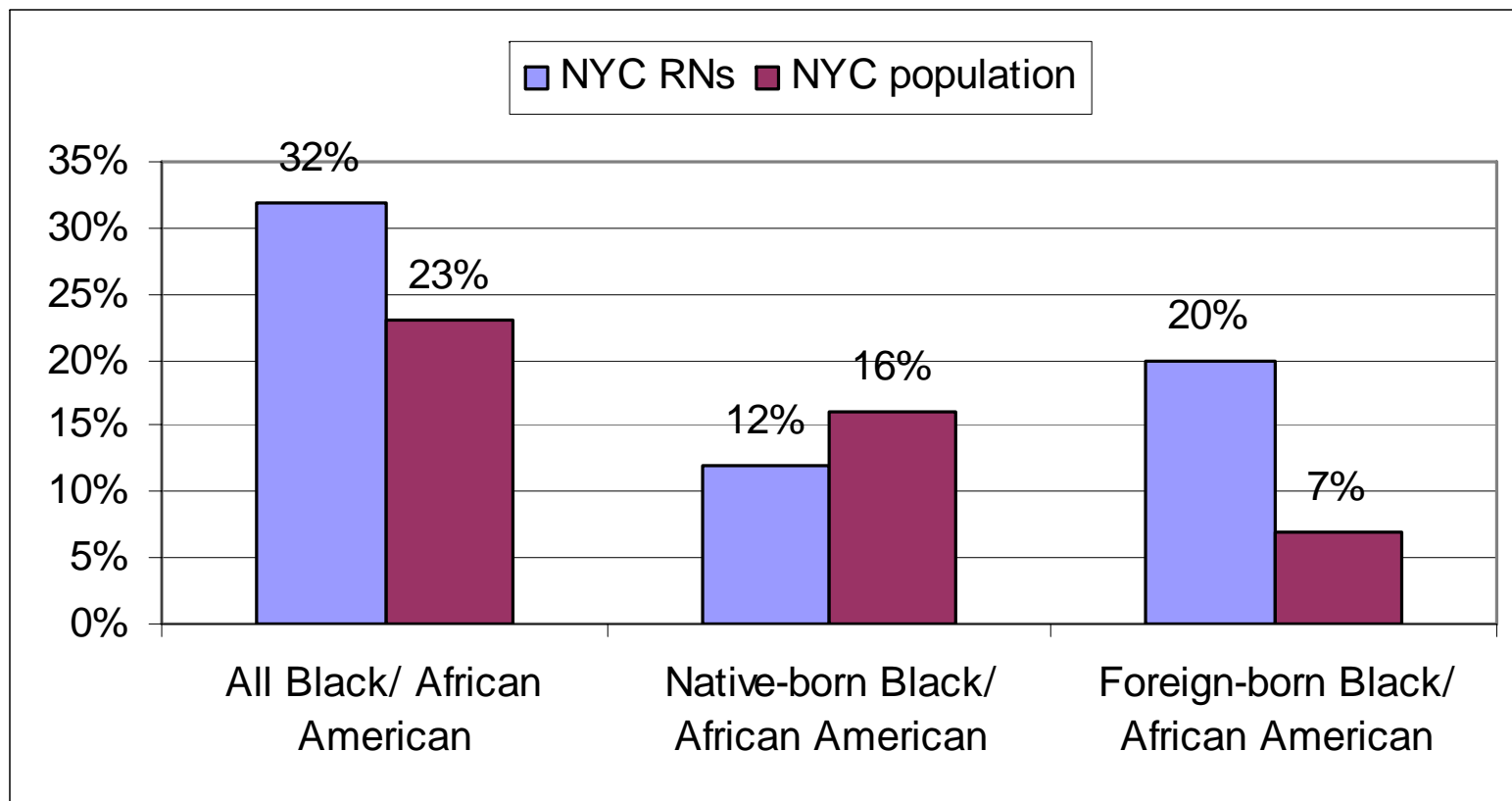# What kinds of health workforce research can be done with PUMS?

- Create demographic profiles for occupations and industries

- Examine employment characteristics within occupation/industry

- Learn about the challenges and barriers health workers face

- Examine the geographical distribution of health workers

# Create demographic profiles for occupations and industries

- Age
- Sex
- Race/ethnicity
- Detailed national background
- Citizenship and place of birth

# Example: Black/African American RNs in New York City



Legend: NYC RNs, NYC population

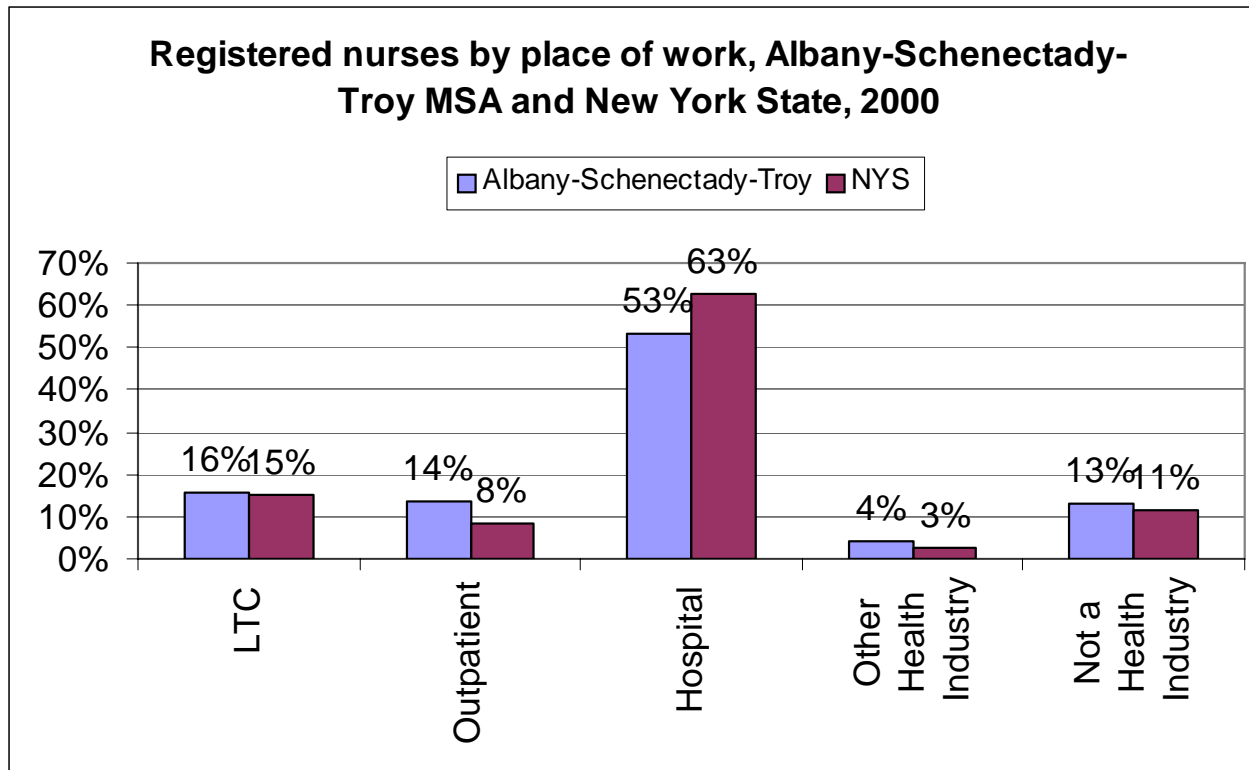| Category | NYC RNs | NYC population |
|---|---|---|
| All Black/African American | 32% | 23% |
| Native-born Black/African American | 12% | 16% |
| Foreign-born Black/African American | 20% | 7% |

# Examine employment characteristics within occupation/industry

- Class of worker (e.g. public, private, self-employed)
- Hours worked/weeks worked
- Temporary absence from work/Layoff status
- Educational attainment
- Salary

# Example: MSA Profile for Albany-Schenectady-Troy MSA

|  | Albany-Schenectady-Troy MSA | New York State | NY MSA rank |  |
|---|---|---|---|---|
| Registered Nurses | 9,451 | 161,448 | 5/12 |  |
| Per 100,000 population | 1187.9 | 854.7 | 1/12 |  |
| Percent Female | 91.80% | 92.80% | 11/12 |  |
| Median Age | 43 | 43 | -- |  |
| Median Earnings | $34,000 | $43,000 | 9/12 |  |
| Median Hours Worked Per Week | 40 | 40 | -- |  |
| Percent with Bachelor's Degree or Higher | 46.50% | 54.90% | 6/12 |  |
| Percent with Master's Degree or Higher | 18.70% | 17.20% | 2/12 |  |
|  |  |  |  |  |

# Example: MSA Profile for Albany-Schenectady-Troy MSA

**Registered nurses by place of work, Albany-Schenectady-Troy MSA and New York State, 2000**



Legend: ■ Albany-Schenectady-Troy  ■ NYS

| Place of work | Albany-Schenectady-Troy | NYS |
|---|---|---|
| LTC | 16% | 15% |
| Outpatient | 14% | 8% |
| Hospital | 53% | 63% |
| Other Health Industry | 4% | 3% |
| Not a Health Industry | 13% | 11% |

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# Learn about the challenges and barriers health workers face

- Language spoken in the home
- English proficiency
- Marital status/Number of dependents
- Poverty status
- Disability status
- Means of travel to work

# Example:
# Direct-care Paraprofessionals, U.S.

- A number of characteristics may contribute to low levels of retention among nursing, psychiatric, and home health aides
  - 19% speak a language other than English in the home
  - 9% rely on public transportation to reach their jobs
  - 13% have family incomes below the Federal poverty line
  - 25% have family incomes less than one-and-a-half times the Federal poverty line

# Examine the geographical distribution of health workers

- PUMS contains information at the level of state, metropolitan statistical area (MSA), and PUMA/super-PUMA

- PUMS contains information on both place of residence *and* place of work

- PUMS also identifies place of residence in 1995

# PUMS Geography

- PUMAs are geographical areas of at least 100,000 population

- Super-PUMAs are geographical areas of at least 400,000 population

# Example:
# New York State Super-PUMAs
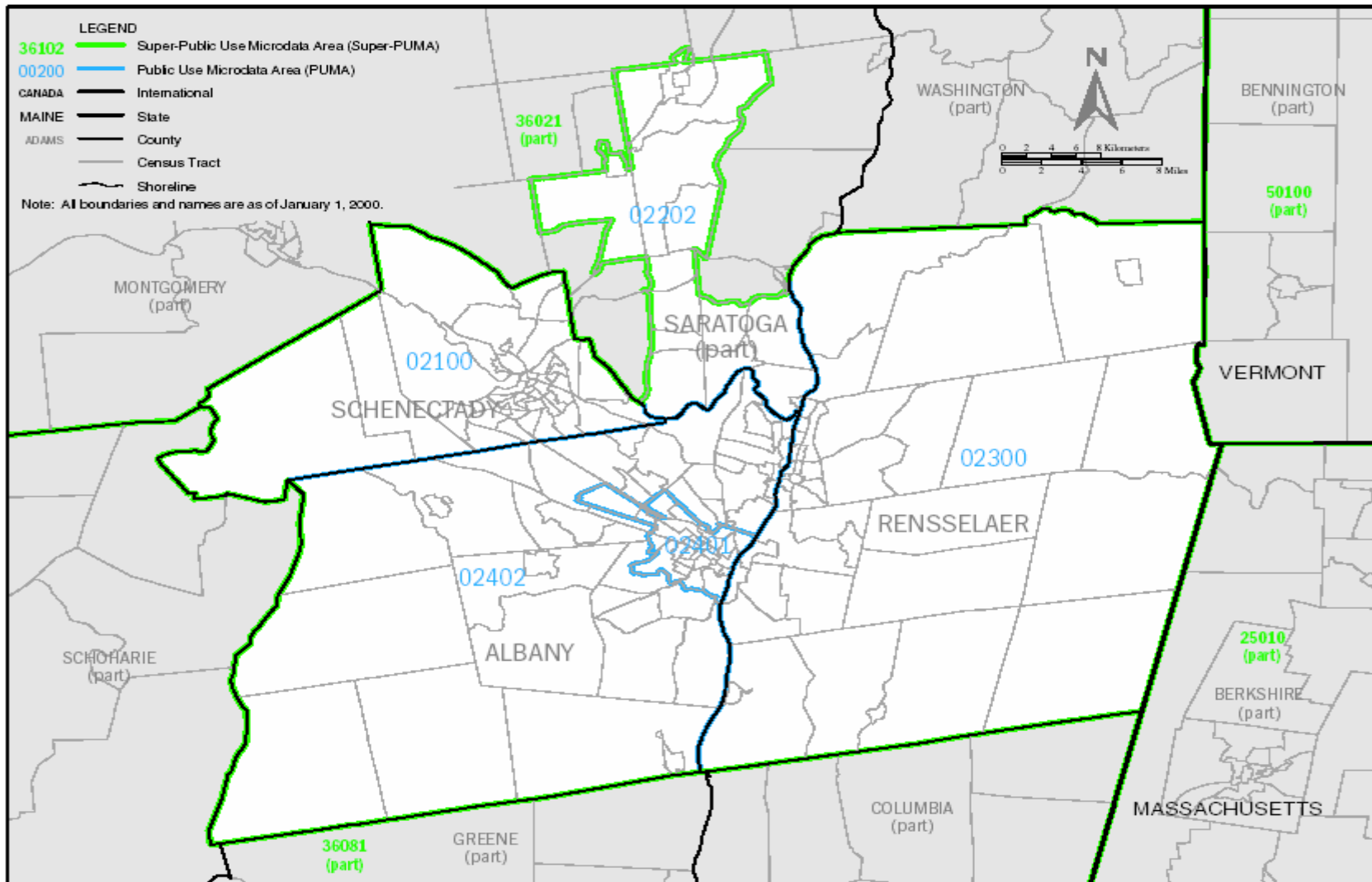
# PUMS Geography

- Correspondence of PUMAs to other commonly-used geographies
  - Do not cross state boundaries.
  - PUMA boundaries do not cross the boundaries of super-PUMAS

# PUMS Geography

- **When possible, PUMAs/super-PUMAs do not cross the boundaries of:**
    - metropolitan areas (MSAs)
    - central cities of metropolitan areas
    - census tract

- **PUMAs may cross county boundaries, but are:**
    - often consistent with the boundaries of a single county
    - often aggregations of multiple whole counties

- **Large counties may be divided into several PUMAs**

# Example:
# New York Capital Region

# Example: New York City Region
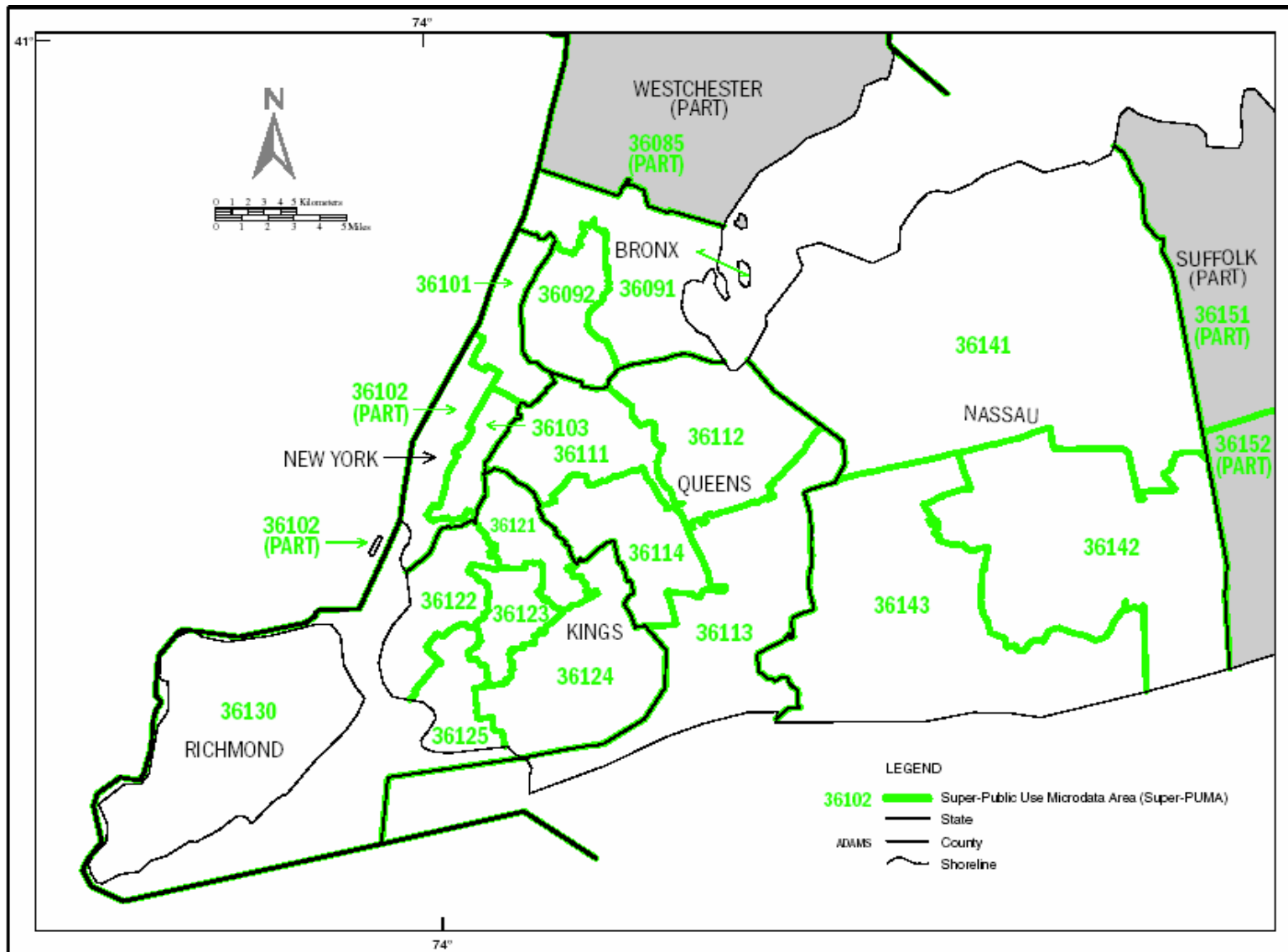
# Limitations of PUMS data

- **PUMS does not offer information on certain occupations**

- **PUMS data is only available on a decennial basis**

- **Because PUMS only represents 5% of the U.S., members of small groups in small geographic areas may be completely missed**

# Other sources of Census data

- **Current Population Survey (CPS)**
  - Conducted by Census Bureau for Bureau of Labor Statistics
  - Similar to PUMS in content
    - Primary advantage:
      - Conducted monthly
    - Primary limitations:
      - Smaller sample size
      - Little geographic detail

# Other sources of Census data

- **American Community Survey (ACS)**
  - Community-based survey done yearly
  - Expected to eventually be implemented in every U.S. county
  - Public-use microdata is now available for limited sites
  - Will eventually replace decennial PUMS

# Summary

- **PUMS is an important potential source of health workforce data**
  - Primary uses are:
    - The construction of occupational/industrial profiles
    - Geographic analyses

- **The more use is made of PUMS data, the more likely it will be that ACS and other Federal population studies will receive adequate attention and funding**

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