



# Statisticians at NCHS

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- Disclaimer: The findings and conclusions in this paper are those of the authors and do not necessarily represent the views of the National Center for Health Statistics, Centers for Disease Control and Prevention.

# National Center for Health Statistics

- NCHS has been part of the Centers for Disease Control and Prevention since 1987.
- NCHS is an Official Federal Health Statistics Agency and part of the Federal Statistical System
- Data products
  - Public use micro-data
  - Restricted use data through the Research Data Center (RDC)
  - Data briefs, short and longer reports, journal articles
  - Data visualizations and online data disseminations



# National Vital Statistics System



- State based system
  - Data received from 57 vital registration jurisdictions (50 states, DC, NYC, 5 territories)
  - Comparable data across the U.S.; data collection and some coding have differed over time and across locations
- Computerized data are available over decades; published reports available for data from 1890
- About 2.8 million deaths and 4 million births each year

# Population Health Surveys

## National Health Interview Survey

- Household interview survey – detailed demographic, health status, reported health conditions, behavioral risk factors, health insurance, access to care.
- Currently, approximately one adult and one child from 35,000 households from 1200 locations sampled each year.
- Sample design and survey instrument change over time; the current sample design was implemented in 2016 and the current instrument in 2019.



# Population Health Surveys

## National Health and Nutrition Examination Survey

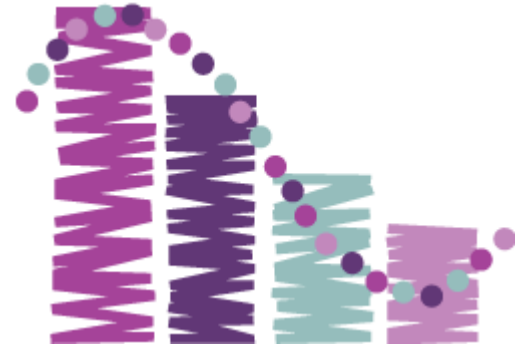
- Standardized physical examinations, laboratory tests, personal interviews with a nationally representative sample. Every two years ~10,000 persons from 30 locations are included.
- Data on: disease/condition prevalence; dietary intake; body measures, nutrition and environmental biomarkers
  - Data used to set national standards for height, weight, and blood pressure.
  - Dietary intake, biomarker, and body measurement data used to set food and nutrition standards and policies.



# Provider Surveys

## National Health Care Surveys

- National Ambulatory Medical Care Survey (NAMCS)
  - Physician offices
  - Community Health Centers
- National Hospital Ambulatory Medical Care Survey (NHAMCS)
  - Outpatient Clinics
  - Emergency rooms
- National Hospital Care Survey (NHCS)
  - Inpatient care -- hospitals
- National Post-acute and Long-term Care Study (NPALS).
  - Administrative data: home health agencies, nursing homes, hospices
  - Questionnaire data: adult day services centers, residential care communities



# NCHS Data Linkage

- Linkage of NCHS population health surveys to administrative records to expand their research uses.
- Person-level linkages using respondent personal identifiers
  - Mortality - National Death Index
  - Medicare and Medicaid enrollment and claims
  - Social Security Administration Retirement and Disability
  - Housing and Urban Development





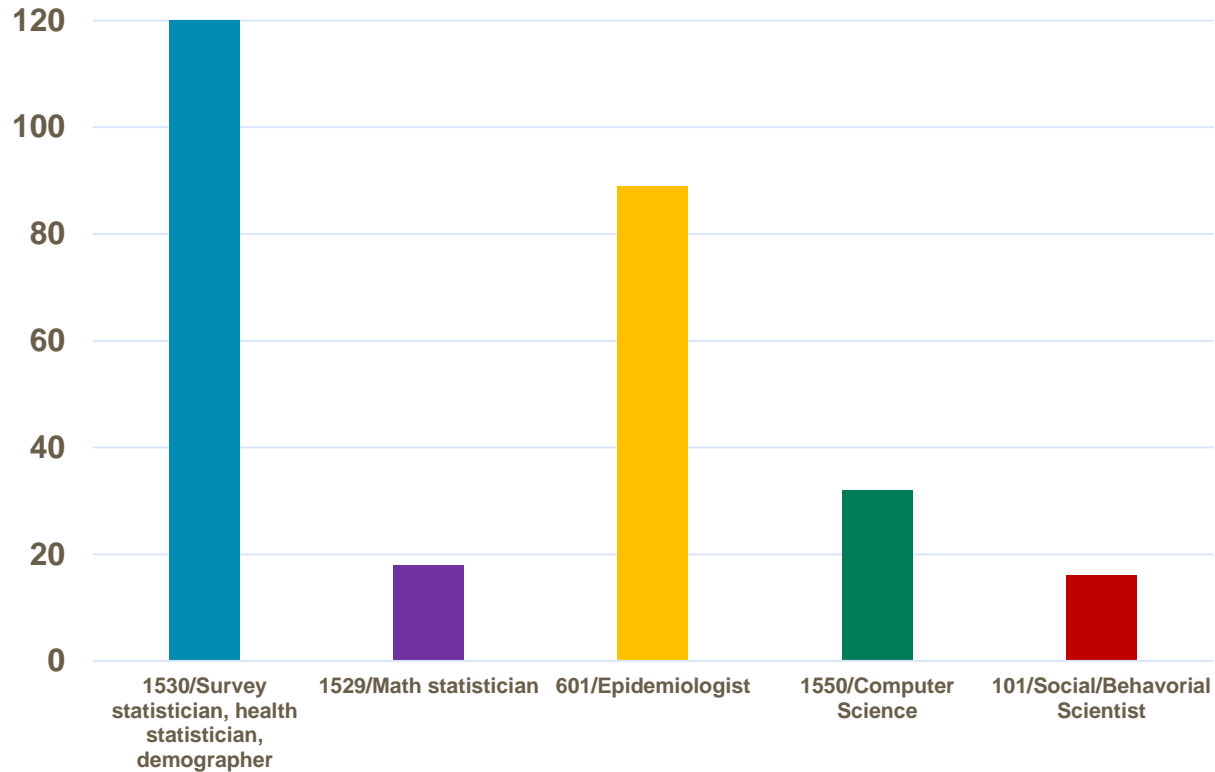
# Division of Research and Methodology

- Collaborating Center for Questionnaire Design and Evaluation Research
- Research Data Center
- Collaborating Center for Statistical Research and Survey Design



# Number of statisticians at NCHS, by series

May 2020



# What are the job opportunities for statisticians/data scientists/analysts in your organization?

- Sampling
  - Sample design
  - Sample weights
  - Non-response bias
- Survey methodology
- Record linkage
- Disclosure and confidentiality
- Natural language processing
- Analysis
  - Subject-matter reports
  - Modeling and predictions
  - Trends
  - Imputations
  - Data Visualizations
- Presentation standards and Analytic Guidelines

- Describe the range of skills statisticians/data scientists/analysts need to succeed in your organization?
- What is the career path for statisticians/data scientists/analysts in your organization?
- Is your organization currently hiring statisticians/data scientists/analysts?
  - <https://www.cdc.gov/nchs/about/employ.htm>
- What advice would you give to students based on your experience?

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