

National Health Interview Survey (NHIS)-Florida Cancer Data System (FCDS) Data Linkage Project: Update

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Background & Purpose

This Pilot Project was designed to evaluate the feasibility of performing a record linkage between the National Health Interview Survey (NHIS) of the National Center for Health Statistics (NCHS) and the Florida Cancer Data System (FCDS) database.

The Pilot will provide the opportunity to assess the practicality and logistics of linking NCHS national population-based survey data with individual state cancer registries.

This linkage will provide highly enriched data for incident cancer cases who have participated in the NHIS by linking the NHIS survey participants' demographics, health conditions, health care access/utilization, and health behaviors with the FCDS cancer incidence case data.

Results

National Health Interview Survey (NHIS) Database

- Nationally representative survey of the civilian non-institutionalized U.S. population conducted since 1957
- Questionnaire Content:
 - Basic socio-demographics
 - Health conditions and utilization
 - Health status, health care services, and behaviors
- Cancer Supplement Content:
 - Screening & family history
 - Physical activity, diet & nutrition
 - Years collected: 1987, 1992, 2000, 2003, 2005, 2008
- Linked to administrative databases:
 - Vital Statistics
 - Medicare & Medicaid claims
 - Social Security retirement & disability data

N=106,820
Eligible NHIS Records from 1987

Florida Cancer Data System (FCDS) Database

- Funded by the State of Florida and the Centers for Disease Control and Prevention (CDC)
- Incidence cancer registry for the state of Florida since 1981
- More than 94,000 new cases of cancer per year
- Represents approximately 6% of all US cancer cases
- Linked with data from the Florida Agency for Health Care Administration (AHCA) to provide an enriched dataset including inpatient and outpatient treatment and diagnostic information for FCDS cancer cases

N=2,421,032
FCDS Records from 1981-2010

Proposed Analyses

Using this linked dataset, we will employ standard descriptive statistical techniques and multivariable logistic regression to evaluate the following possible hypotheses for Florida cancer cases that participated in the 1987 NHIS:

H₁₋₁: Florida NHIS cancer survivors will have greater work loss and activity limitations relative to FL NHIS non-cancer survivors after adjustment for sociodemographic status.

H₁₋₂: The likelihood of being diagnosed with a late-stage vs. non-late-stage cancer will be greater among NHIS participants who reported being uninsured in 1987.

H₁₋₃: Cancer screening behaviors in 1987 will be associated with a lower likelihood of being diagnosed with a late-stage vs. non-late-stage cancer.

H₁₋₄: Cancer-case fatality ratios will be significantly higher in minority vs. non-mortality populations.

Methods

We have completed the initial linkage of the 1987 NHIS dataset with the entire FCDS database employing a probabilistic algorithm through Automatch® using name, Social Security number, date of birth, and sex. These linked data were then de-identified and deposited in the secure Research Data Center (RDC) of the NCHS and can be analyzed by approved researchers through the RDC.

Future Directions

In addition to the RDC analyses of this initial linkage, we are currently expanding the FCDS data linkage to additional NHIS years and are compiling detailed linkage documentation. **The ultimate goal of this project is to develop a model for conducting linkages between NCHS population-based surveys and the CDC National Program of Cancer Registries and SEER Cancer Registries.**

1987 NHIS-FCDS Linked Dataset

N=712

Linked Florida cancer cases that participated in the 1987 NHIS