Census Bureau data to study small area health outcomes

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Outline

1. Six current projects that:

    1. Build and evaluate Census Data Linkage Infrastructure

    2. Produce statistics

    3. Engage in evidence-building research

2. Access and more information

3. Final thoughts – new partnerships

1. Data Linkage Infrastructure

- Links **federal**, **state**, **local**, and **third party administrative records** to census and survey data

- Required by law to reuse data from other agencies (13 U.S.C. §6)
  - Lower survey costs
  - Reduce respondent burden

- Data linked at person-level using anonymized keys

1. Data Linkage Infrastructure

Research topics
People and households
Employment
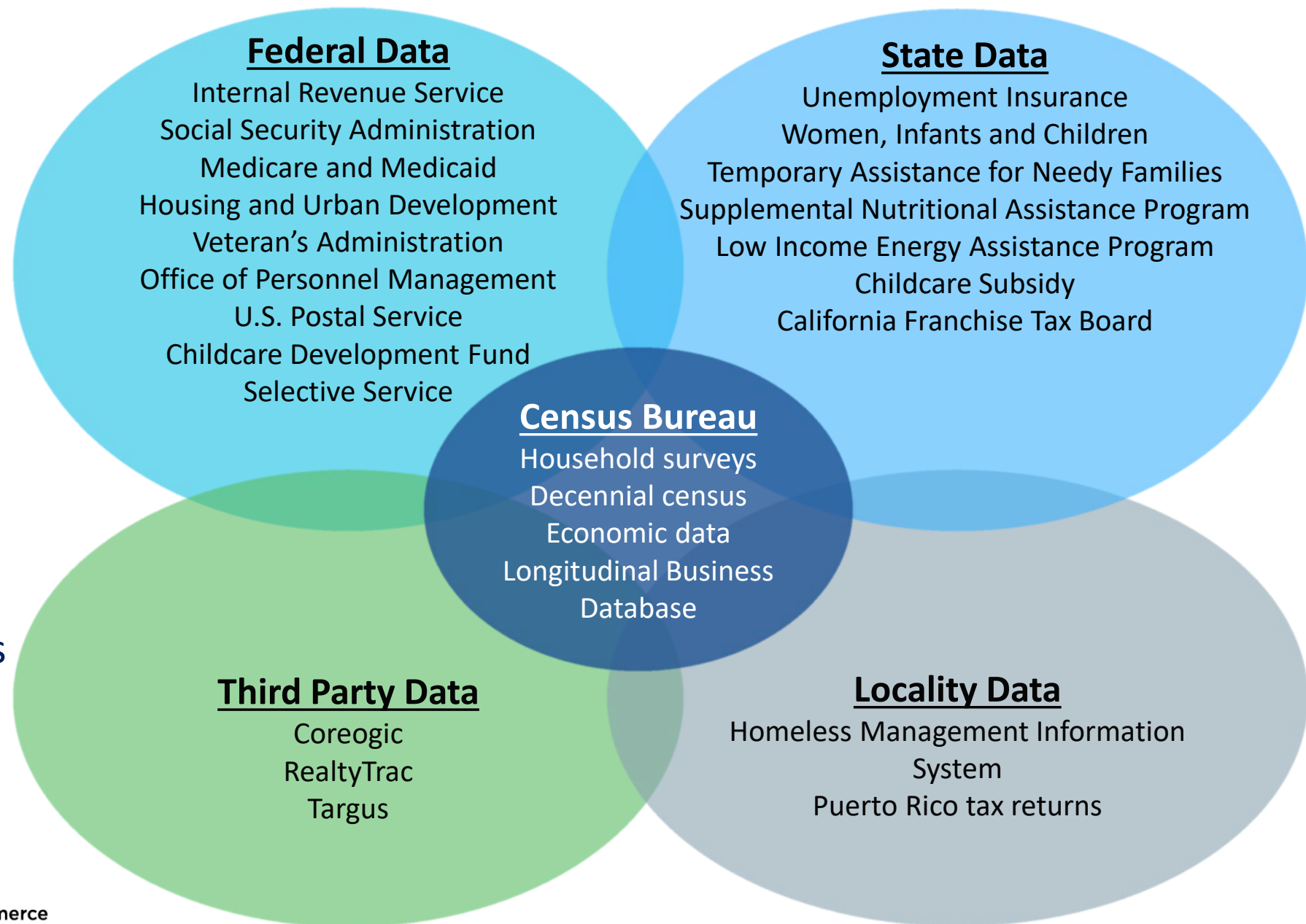Wages and earnings
Education
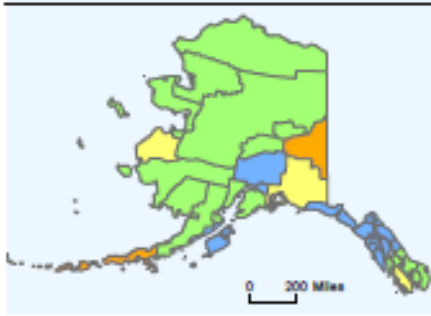Public assistance
Disability
Food security
Health care
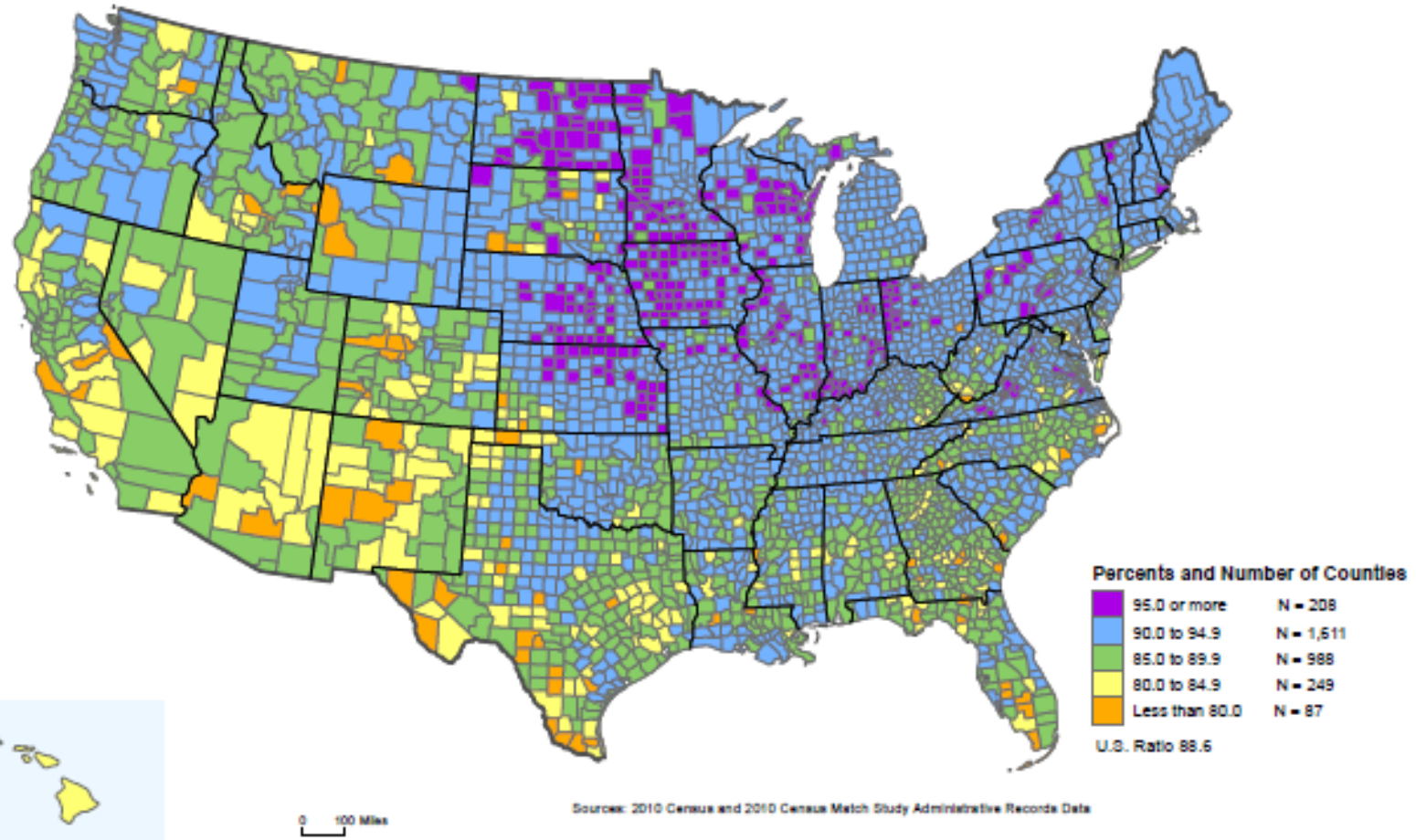Housing
Public services and utilities
Business

Federal Data
Internal Revenue Service
Social Security Administration
Medicare and Medicaid
Housing and Urban Development
Veteran's Administration
Office of Personnel Management
U.S. Postal Service
Childcare Development Fund
Selective Service

State Data
Unemployment Insurance
Women, Infants and Children
Temporary Assistance for Needy Families
Supplemental Nutritional Assistance Program
Low Income Energy Assistance Program
Childcare Subsidy
California Franchise Tax Board

Census Bureau
Household surveys
Decennial census
Economic data
Longitudinal Business
Database

Third Party Data
Coreogic
RealtyTrac
Targus

Locality Data
Homeless Management Information
System
Puerto Rico tax returns

Note: access depends on data acquisition agreements

1. Data Linkage Infrastructure

Match ratio of 2010 Census and administrative records (persons by county)

Percents and Number of Counties

95.0 or more	N = 208
90.0 to 94.9	N = 1,611
85.0 to 89.9	N = 988
80.0 to 84.9	N = 249
Less than 80.0	N = 87

U.S. Ratio 88.6

Sources: 2010 Census and 2010 Census Match Study Administrative Records Data

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2. Mortality Disparities in American Communities (MDAC)

- MDAC is American Community Survey (ACS) linked to mortality outcomes from National Death Index (NDI)

- Goal: to study relationship between demographic and socioeconomic factors and differentials in U.S. mortality rates

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2. MDAC data

	ACS	NDI	Environmental
Sample	2008 ACS (~4.5M people)	Deaths occurring 2008-2015 (~269K deaths)	Varies
Types of data	- Demographics - SES and employment, - Disability, health insurance - Household characteristics - Group quarters	- All information from Death Certificate: age, sex, race, Hispanic, education, occupation (varies by state) - Cause of death (ICD-9 and ICD-10): underlying and multiple contributing causes	- Local/state/national park locations - American Hospital Association annual survey - National Crime Victimization Survey - RAND Center for Population Health and Health Disparities Data
Linkage	Person-level	Person-level	Census tract or lat/long

3. Small Area Health Insurance Estimates (SAHIE)

- Model-based health insurance coverage estimates at state and county geographies

- Only source of single-year health insurance coverage estimates for all U.S. counties

- Provides estimates beginning from year 2000

- Characteristics: age, sex, income (poverty ratios), and race and Hispanic origin

3. SAHIE data sources

United States Census Bureau	• American Community Survey (1-year and 5-year) • Census 2010 (housing tenure, % rural tabulations) • Population estimates • County Business Patterns
IRS	• Aggregated federal 1040 tax returns
SNAP USDA Supplemental Nutrition Assistance Program — Putting Healthy Food Within Reach	• Supplemental Nutrition Assistance Program (SNAP) participation records
CMS CENTERS FOR MEDICARE & MEDICAID SERVICES	• Medicaid participation records • Children's Health Insurance Program (CHIP) participation records

4. Improving fertility measurement

- Create fertility histories from Decennial Census, household surveys, tax data, and other administrative data
  - Experimental data on policy change (Michigan)

- Can be used to understand:
  - Fertility for demographic subgroups and at smaller geographic areas
  - Undercount of young children in Censuses and surveys
  - Policy changes at local levels and by demographic subgroups

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5. Enhancing health data pilot

- Objective: to obtain electronic health records and medical claims data
  - Link health data to existing Census data linkage infrastructure
  - Research on social determinants of health
  - Determine whether health data can improve surveys
- Potential partners:
  - Utah Department of Health
  - Colorado Health Information Exchange
  - Centers for Medicare and Medicaid Services
  - New partners…

6. Automating disclosure avoidance

- The Census Bureau must:
  - Release high quality data to public
  - Protect confidentiality (U.S. Code Title 13, Title 26, and others)
- Disclosure avoidance addresses these needs, but is
  - Costly and time consuming
  - Subject to human error
- Disclosure avoidance modernization
  - Methodological advances in disclosure avoidance
  - Process modernization

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6. Automating disclosure avoidance

- Vision: dramatically streamline process of disclosure avoidance for users, while integrating modern disclosure avoidance techniques

- How: leverage unique authority of National Technical Information Service to access experts

- Potential prototype: privacy-preserving small-area estimation

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Access

Project	Public use file	Restricted data*	
		Externally via Federal Statistical Research Data Centers (FSRDCs)	Internally at Census HQ with Census sponsor
1. Data Linkage Infrastructure	No	Yes	Yes
2. Mortality Disparities in American Communities (MDAC)	Planned for late 2018	Yes	Yes
3. Small Area Health Insurance Estimates (SAHIE)	Yes, also: interactive tool and Census Bureau's API	Yes	Yes
4. Improving fertility measurement	No	Yes	Yes
5. Enhancing health data pilot	No	Potentially	Potentially
6. Automating disclosure avoidance	n/a	Potentially	Yes

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*Note: access depends on data acquisition agreements

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More information

Project	Website	Email
1. Data Linkage Infrastructure	census.gov/datalinkage	carla.medalia@census.gov or scott.boggess@census.gov
2. Mortality Disparities in American Communities (MDAC)	census.gov/mdac	norman.j.johnson@census.gov
3. Small Area Health Insurance Estimates (SAHIE)	census.gov/programs-surveys/sahie.html	sehsd.sahie@census.gov or jasen.a.taciak@census.gov
4. Improving fertility measurement	n/a	katie.r.genadek@census.gov
5. Enhancing health data pilot	n/a	chris.kuwik@census.gov or victoria.m.udalova@census.gov
6. Automating disclosure avoidance	n/a	keith.ferguson.finlay@census.gov

Final thoughts

Open to new partnerships

1. Build and evaluate Census Data Linkage Infrastructure
2. Produce and improve statistics, at Census and partner agencies
3. Engage in joint evidence-building research

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