2021

Add Health Wave V Documentation

Wave V County Health and Mobility Data User Guide

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Add Health is supported by grant P01-HD31921 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, with cooperative funding from 23 other federal agencies and foundations.

https://doi.org/10.17615/5pmn-mf04

Suggested Citation

Gaydosh L., Hargrove T., Reason, M. and Belsky, D. 2021. Wave V County Health and Mobility Data Documentation. The National Longitudinal Study of Adolescent to Adult Health. Carolina Population Center, University of North Carolina at Chapel Hill. https://doi.org/XX.XXXXX/XXXX-XXXX

Acknowledgments

Add Health is a program project directed by Kathleen Mullan Harris and designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris at the University of North Carolina at Chapel Hill, and funded by grant P01-HD31921 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, with cooperative funding from 23 other federal agencies and foundations. Work on the contextual data linkage was supported by grants to Taylor Hargrove and Lauren Gaydosh (R21HD095448 and R24AG045061) from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, the National Institute on Aging, and the Network on Life Course Health Dynamics and Disparities. Information on how to obtain the Add Health data files is available on the Add Health website (http://www.cpc.unc.edu/addhealth).

Introduction

The Wave V County Health and Mobility database summarizes the socioeconomic, health, and mobility characteristics of the environments in which Add Health participants were living at the time of their Wave V interview. County-level data describe (1) levels of and trends in chronic disease (hypertension, type-2 diabetes) and health risk behaviors (obesity, smoking, alcohol use); and (2) economic opportunity and inequality. This contextual database permits innovative research that investigates how place influences health, behavior, and social outcomes across the transition from adolescence to the beginning of midlife, thereby, enhancing studies of the determinants and sequelae of socio-geographic mobility.

Data

The following is a list of data that were collected from secondary data sources and merged to Wave V of Add Health by 2010 FIPS codes. These variables are available at the county or state level. Data were matched to the county or state that the Add Health respondent was living in at the time of the Wave V interview and data were matched to respondents so as to insure that these contextual variables correspond as closely as possible to the year in which the Add Health respondents were interviewed at Wave V (2016- 2019).

Life Expectancy and Mortality Risk

Data on life expectancy and mortality risk come from the Institute for Health Metrics and Evaluation (IHME). Annual county-level life tables were constructed using small area estimation methods from de-identified death records from the National Center for Health Statistics (NCHS), and population counts from the US Census Bureau, NCHS, and the Human Mortality Database.

County level life expectancy (2014) C5LE001
County level mortality risk age 0-5 (2014) C5LE002
County level mortality risk age 5-25 (2014) C5LE003
County level mortality risk age 25-45 (2014) C5LE004
County level mortality risk age 45-65 (2014) C5LE005
County level mortality risk age 65-85 (2014) C5LE006
% change in life expectancy, 1980-2014 ..... C5LE007

Citation: Lindgren et al. 2017 *JAMA Internal Medicine* Inequalities in Life Expectancy Among US Counties, 1980-2014 [1]

Diabetes Prevalence

Data on diabetes prevalence came from the IHME. IHME researchers used a two-stage modeling procedure. In the first stage, self-reported and biomarker data from National Health and Nutrition Examination Survey (NHANES) were used to build models for predicting true diabetes status. These models were applied to impute true diabetes status for respondents in the Behavioral Risk Factor Surveillance System (BRFSS). In the second stage, small area models were fit to imputed BRFSS data to derive county-level estimates of diagnosed, undiagnosed, and total diabetes prevalence, as well as rates of diabetes diagnosis and effective treatment.

County level age-standardized diagnosed diabetes prevalence: Total (2012) C5DI001T
County level age-standardized diagnosed diabetes prevalence: Male (2012) C5DI001M
County level age-standardized diagnosed diabetes prevalence: Female (2012) C5DI001F
County level age-standardized undiagnosed diabetes prevalence: Total (2012).....C5DI002T
County level age-standardized undiagnosed diabetes prevalence: Male (2012)..... C5DI002M
County level age-standardized undiagnosed diabetes prevalence: Female (2012) C5DI002F
County level age-standardized total diabetes prevalence: Total (2012).....C5DI003T
County level age-standardized total diabetes prevalence: Male (2012)..... C5DI003M
County level age-standardized total diabetes prevalence: Female (2012) C5DI003F
County level age-standardized diabetes awareness: Total (2012) C5DI004T
County level age-standardized diabetes awareness: Male (2012)..... C5DI004M
County level age-standardized diabetes awareness: Female (2012) C5DI004F
County level age-standardized diabetes control: Total (2012).....C5DI005T
County level age-standardized diabetes control: Male (2012)..... C5DI005M
County level age-standardized diabetes control: Female (2012) C5DI005F
% change 1999-2012 County level age-standardized diagnosed diabetes prevalence: Total C5DI006T
% change 1999-2012 County level age-standardized diagnosed diabetes prevalence: Male C5DI006M
% change 1999-2012 County level age-standardized diagnosed diabetes prevalence: Female C5DI006F
% change 1999-2012 County level age-standardized undiagnosed diabetes prevalence: Total C5DI007T
% change 1999-2012 County level age-standardized undiagnosed diabetes prevalence: Male .. C5DI007M
% change 1999-2012 County level age-standardized undiagnosed diabetes prevalence: Female C5DI007F
% change 1999-2012 County level age-standardized total diabetes prevalence: Total C5DI008T
% change 1999-2012 County level age-standardized total diabetes prevalence: Male C5DI008M
% change 1999-2012 County level age-standardized total diabetes prevalence: Female C5DI008F
% change 1999-2012 County level age-standardized diabetes awareness: Total C5DI009T

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% change 1999-2012 County level age-standardized diabetes awareness: Male C5DI009M
% change 1999-2012 County level age-standardized diabetes awareness: Female C5DI009F
% change 1999-2012 County level age-standardized diabetes control: Total C5DI0010T
% change 1999-2012 County level age-standardized diabetes control: Male C5DI0010M
% change 1999-2012 County level age-standardized diabetes control: Female C5DI0010F

Citation: Dwyer-Lindgren et al. 2016 *Diabetes Care* Diagnosed & Undiagnosed Diabetes Prevalence by County in the US 1999-2012 [2]

Drinking Patterns

Data on drinking patterns came from the IHME. IHME researchers applied small area models to BRFSS data on self-reported drinking, incorporating spatial and temporal smoothing.

County level age-standardized prevalence of any drinking: Total (2012) C5DR001T
County level age-standardized prevalence of any drinking: Male (2012) C5DR001M
County level age-standardized prevalence of any drinking: Female (2012).....C5DR001F
County level age-standardized prevalence of heavy drinking: Total (2012) C5DR002T
County level age-standardized prevalence of heavy drinking: Male (2012) C5DR002M
County level age-standardized prevalence of heavy drinking: Female (2012).....C5DR002F
County level age-standardized prevalence of binge drinking: Total (2012) C5DR003T
County level age-standardized prevalence of binge drinking: Male (2012) C5DR003M
County level age-standardized prevalence of binge drinking: Female (2012) C5DR003F
% change 2002-2012 County level age-standardized prevalence of any drinking: Total C5DR004T
% change 2002-2012 County level age-standardized prevalence of any drinking: Male C5DR004M
% change 2002-2012 County level age-standardized prevalence of any drinking: Female C5DR004F
% change 2002-2012 County level age-standardized prevalence of heavy drinking: Total C5DR005T
% change 2002-2012 County level age-standardized prevalence of heavy drinking: Male C5DR005M
% change 2002-2012 County level age-standardized prevalence of heavy drinking: Female C5DR005F
% change 2002-2012 County level age-standardized prevalence of binge drinking: Total C5DR006T
% change 2002-2012 County level age-standardized prevalence of binge drinking: Male C5DR006M
% change 2002-2012 County level age-standardized prevalence of binge drinking: Female C5DR006F

Citation: Dwyer-Lindgren et al. 2015 *AJPH* Drinking Patterns in US Counties from 2002-2012 [3]

Smoking Patterns

Data on smoking patterns came from the IHME. IHME researchers used data on 4.7 million adults age 18 and older from BRFSS between 1996 and 2012. They derived cigarette smoking status from self-reported data in BRFSS and applied validated small area estimation methods to generate estimates of current total cigarette smoking prevalence and current daily cigarette smoking prevalence.

County level prevalence of people who currently smoke: Total (2012).....C5SM001T
County level prevalence of people who currently smoke: Male (2012)..... C5SM001M
County level prevalence of people who currently smoke: Female (2012) C5SM001F
County level prevalence of people who currently smoke daily: Total (2012) C5SM002T
County level prevalence of people who currently smoke daily: Male (2012) C5SM002M

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County level prevalence of people who currently smoke daily: Female (2012)..... C5SM002F
Mean annualized rate of change from 1996-2012 in County level prevalence of people who currently smoke: Total C5SM003T
Mean annualized rate of change from 1996-2012 in County level prevalence of people who currently smoke: Male C5SM003M
Mean annualized rate of change from 1996-2012 in County level prevalence of people who currently smoke: Female C5SM003F
Mean annualized rate of change from 1996-2012 in County level prevalence of people who currently smoke daily: Total C5SM004T
Mean annualized rate of change from 1996-2012 in County level prevalence of people who currently smoke daily: Male C5SM004M
Mean annualized rate of change from 1996-2012 in County level prevalence of people who currently smoke daily: Female C5SM004F

Citation: Dwyer-Lindgren et al. 2014 *Population Health Metrics* Cigarette Smoking Prevalence in US Counties 1996-2012 [4]

Physical Activity and Obesity

Data on physical activity and obesity came from the IHME. Body mass index (BMI) is calculated from self-reported weight and height in BRFSS, adjusting for self-reporting bias using NHANES. Physical activity—both any physical activity and physical activity meeting recommended levels—is calculated from self-reported data in BRFSS. To generate estimates of obesity and physical activity prevalence for each county, IHME researchers used validated small area estimation methods.

County level prevalence of obesity: Male (2011) C5OP001M
County level prevalence of obesity: Female (2011)..... C5OP001F
County level prevalence of physical activity: Male (2011) C5OP002M
County level prevalence of physical activity: Female (2011)..... C5OP002F

Please note, the measures of hypertension prevalence provided for earlier waves of Add Health do not exist at Wave V.

Citation: Dwyer-Lindgren et al. 2013 *Population Health Metrics* Prevalence of physical activity and obesity in US counties, 2001–2011: a road map for action [5]

County Health Ranking Quartiles

Data on county health ranking quartiles came from the Robert Wood Johnson Foundation's County Health Rankings and Roadmaps Project. Data characterize US counties in terms of overall health and range of health problems and health behaviors during 2010-2017.

County health outcome ranking quartile – compiles length of life and quality of life data from the NCHS, and reports of poor or fair health, poor physical health days, and poor mental health days from BRFSS.

County health factor ranking quartile - includes health behaviors (smoking, diet, exercise, alcohol and drug use, and sexual activity), clinical care (access to care, quality of care), social and economic factors

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(education, employment, income, family and social support, and community safety), and physical environment (air and water quality, housing and transit).

County health outcome ranking quartile (2017) C5HR001
County health factor ranking quartile (2017) C5HR002

Citation: Robert Wood Johnson Foundation's County Health Rankings and Roadmaps Project

Measures of Mobility

Data on measures of mobility come from Opportunity Insights. These data characterize US counties in terms of resident socioeconomic mobility. Opportunity Insights draws on federal income tax data to create measures of mobility.

County relative mobility –slope from OLS regression of child rank on parent rank within each county in core sample using baseline income definitions. Correlation of the percentile rank in the national income distribution for children (based on average incomes between 2010 and 2012 for the 1980-1982 birth cohort) and their parents (whose income was measured over 1996-2000).

County absolute mobility – expected rank of children whose parents are at the 25th percentile of the national income distribution based on the rank-rank regression

Causal effect of county of childhood residence on adult household income –measured as the percentage gain or loss in income at age 26 caused by spending one additional year of childhood in a given county relative to the national mean for children born to a family earning an income of approximately $30,000 (the 25th percentile of the income distribution). Children were assigned to a county based on their location at age 16 (no matter where they live as adults), so that their location represents where they grew up.

County Gini coefficient – a measure of the amount of parental income inequality within commuting zones in the US. The following equation is used to compute the Gini coefficient:

$$Gini = \frac{2}{\overline{X_c}} Cov(X_{ic}, P_{ic}),$$

where $\overline{X_c}$ is the mean family income (for 1996-2000) of parents in CZ *c*, and $Cov(X_{ic}, P_{ic})$ is the covariance between income level (X_{ic}) and percentile rank (P_{ic}) of parents in CZ *c*.

County relative mobility..... C5EC001
County absolute mobility..... C5EC002
Causal effect of county of childhood residence on adult household income at p25: Total C5EC003T
Causal effect of county of childhood residence on adult household income at p25: Male C5EC003M
Causal effect of county of childhood residence on adult household income at p25: Female C5EC003F
County Gini coefficient C5EC004

Citations: Chetty & Hendren 2018 The Effects of Neighborhoods on Intergenerational Mobility I: Childhood Exposure Effects [7]

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Chetty & Hendren 2018 The Effects of Neighborhoods on Intergenerational Mobility II: County-level Estimates [8]
Chetty, Hendren, Kline & Saez 2014 Where is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States [9]

Health Insurance Coverage

Data on health insurance coverage came from the Kaiser Family Foundation State Health Facts dataset. Information on the proportion of a population within a state that is covered by different types of health insurance coverage is available in this dataset across multiple years.

Medicaid: Includes those covered by Medicaid, the Children's Health Insurance Program (CHIP), and those who have both Medicaid and another type of coverage, such as dual eligible who are also covered by Medicare. A person having Medicaid coverage in the first half of the year but employer-based coverage in the last months of the year would be categorized as having Medicaid coverage in this analysis.

Medicare: Includes those covered by Medicare, Medicare Advantage, and those who have Medicare and another type of non-Medicaid coverage where Medicare is the primary payer. Excludes those with Medicare Part A coverage only and those covered by Medicare and Medicaid (dual eligible).

Employer: Includes those covered by employer-sponsored coverage either through their own job or as a dependent in the same household.

Other Public: Includes those covered under the military or Veterans Administration.

Non-Group: Includes individuals and families that purchased or are covered as a dependent by non-group insurance.

Uninsured: Includes those without health insurance and those who have coverage under the Indian Health Service only.

State level proportion of total population covered by Medicaid health insurance: 2014 .....S5HI0114
State level proportion of total population covered by Medicaid health insurance: 2015 .....S5HI0115
State level proportion of total population covered by Medicaid health insurance: 2016 .....S5HI0116
State level proportion of total population covered by Medicaid health insurance: 2017 .....S5HI0117
State level proportion of total population covered by Medicare health insurance: 2014 .....S5HI0214
State level proportion of total population covered by Medicare health insurance: 2015 .....S5HI0215
State level proportion of total population covered by Medicare health insurance: 2016 .....S5HI0216
State level proportion of total population covered by Medicare health insurance: 2017 .....S5HI0217
State level proportion of total population covered by Employer health insurance: 2014 .....S5HI0314
State level proportion of total population covered by Employer health insurance: 2015 .....S5HI0315
State level proportion of total population covered by Employer health insurance: 2016 .....S5HI0316
State level proportion of total population covered by Employer health insurance: 2017 .....S5HI0317
State level proportion of total population covered by non-group health insurance: 2014 .....S5HI0414
State level proportion of total population covered by non-group health insurance: 2015 .....S5HI0415

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State level proportion of total population covered by non-group health insurance: 2016 .....S5HI0416
State level proportion of total population covered by non-group health insurance: 2017 .....S5HI0417
State level proportion of total population covered by other public health insurance: 2014 .....S5HI0514
State level proportion of total population covered by other public health insurance: 2015 .....S5HI0515
State level proportion of total population covered by other public health insurance: 2016 .....S5HI0516
State level proportion of total population covered by other public health insurance: 2017 .....S5HI0517
State level proportion of total population uninsured: 2014 .....S5HI0614
State level proportion of total population uninsured: 2015 .....S5HI0615
State level proportion of total population uninsured: 2016 .....S5HI0616
State level proportion of total population uninsured: 2017 .....S5HI0617

Citation: Kaiser Family Foundation State Health Facts

Tax Burden on Tobacco

Data come from the Tax Burden on Tobacco dataset.

State level cigarette tax per pack, in dollars (2016)..... S5CT001

Citation: Citation: Orzechowski and Walker, 2016 Tax Burden on Tobacco [10]

Missing codes

The final digit of the missing codes indicates the reason for which they are missing. Missing codes that end in 6 (Ex. 96, 996) denote that information for that variable was not available in the source dataset. Missing codes that end in 8 (Ex. 98, 998) denote respondents in Add Health who lack the geocodes necessary for merging respondent locations to the various source data.

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