MODELING IDAHO HEALTH

https://modelingidahohealth.org

Modeling COVID-19 Health Disparities

Project Purpose

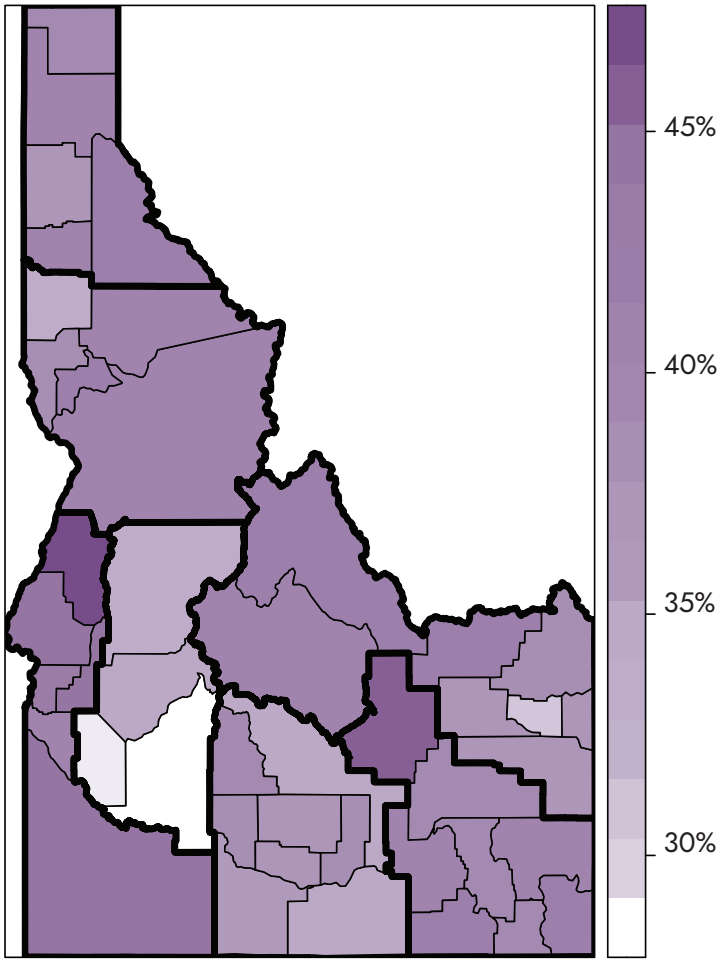
There is strong evidence that people with some health conditions have higher risk for severe COVID-19 disease, including hospitalization, intensive care admission, mechanical ventilation and death. The *Modeling COVID-19 Health Disparities* project developed a modeling technique to identify populations at risk for severe COVID-19 disease and death at a county-level. Prior to this work, this data was only available by Idaho Public Health Districts (PHD).

Idaho adult health information is collected using the Behavioral Risk Factor Surveillance System (BRFSS). Each year, approximately 5,000 Idahoans (18 years of age and older) respond to the telephone-based BRFSS survey. The survey results are found on the Idaho BRFSS website [LINK].

COVID-19 Health Disparities used small-area estimate modeling techniques combining BRFSS data with American Community Survey (ACS) data to create county-level health condition measures associated with severe COVID-19 disease. Modeling and mapping health conditions and county-level social and economic information (e.g., poverty, lack of insurance, lower education, limited English speaking) allows state and local health officials, nonprofits, and policymakers to identity and take action to prevent disease and improve health.

Several factors increase the risk for severe COVID-19 disease. Obesity, diabetes mellitus (type 1 and type 2), respiratory disease (chronic obstructive pulmonary disease and asthma), heart disease (angina and heart attack), and chronic kidney disease (CKD), are well known to increase severe COVID-19 disease risk. Age further increases the risk of severe COVID-19 disease and death. Smoking, heavy drinking, and lack of physical activity can also contribute to poorer health and increased risk within populations.

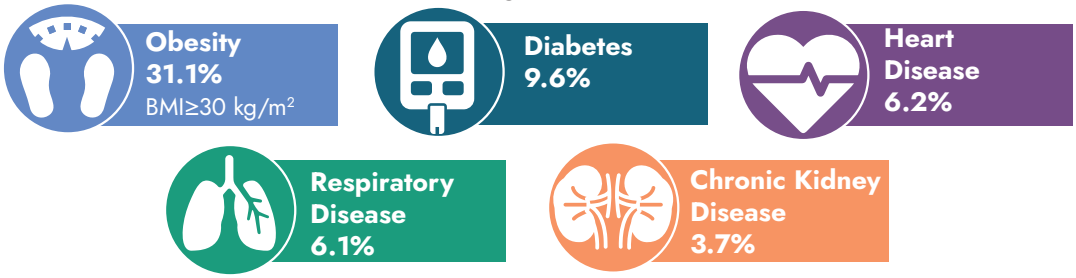
Prevalence of at least one health condition associated with severe COVID-19 disease



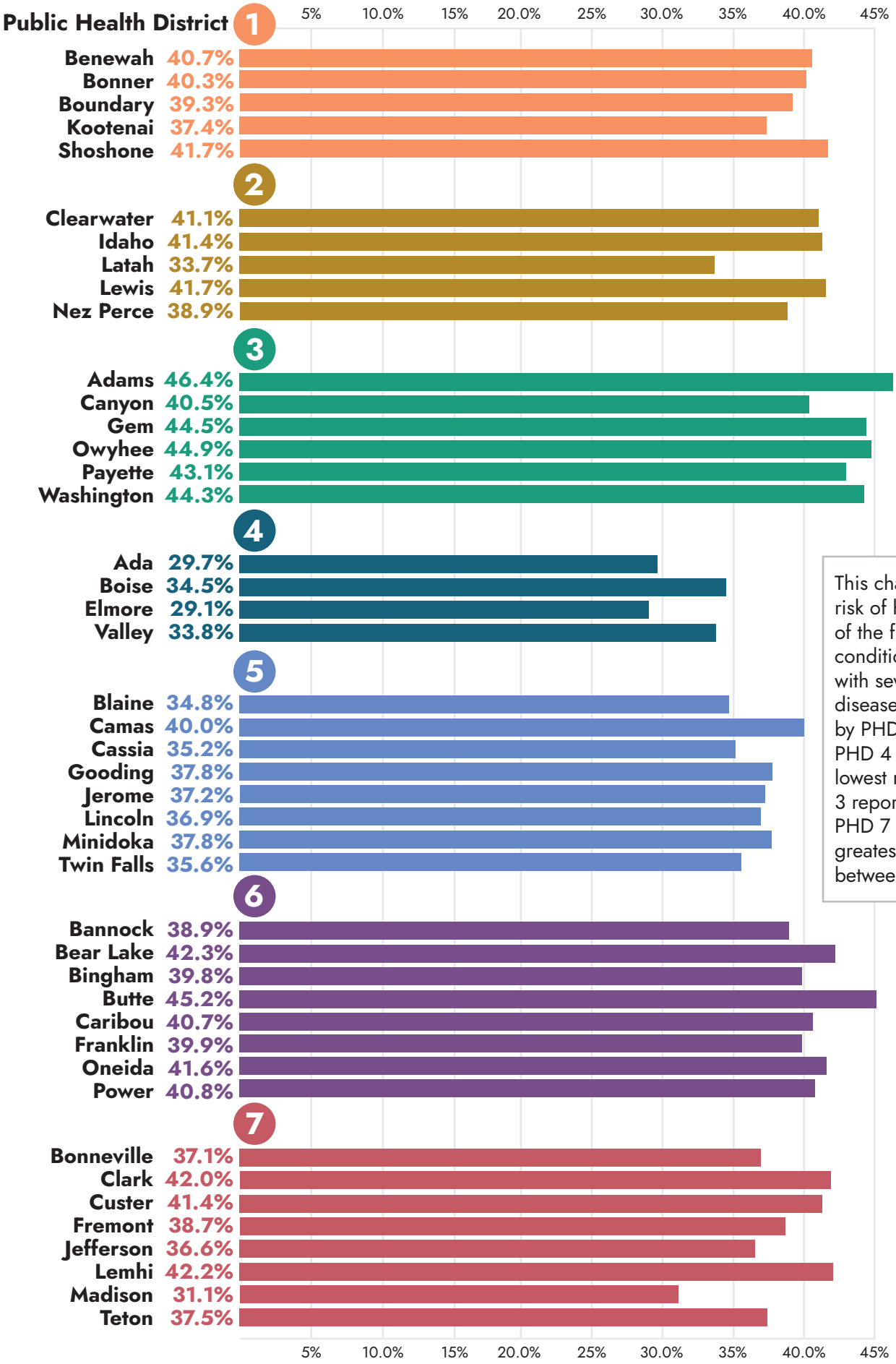
This map shows the percentage of adults in Idaho counties who report having at least one of the five health conditions that increase risk for severe COVID-19 disease. COVID-19 disease risk conditions vary within Public Health Districts and between counties. Rural counties tend to have a higher percentage of risk conditions than urban counties. In Idaho, 40% of adults 18 or older have a least one health condition putting them at risk for severe COVID-19 disease.

Lowest Risk Elmore County 29.1 %
Highest Risk Adams County 46.4%

Health Factors Contributing to Severe COVID-19 Disease in Idaho

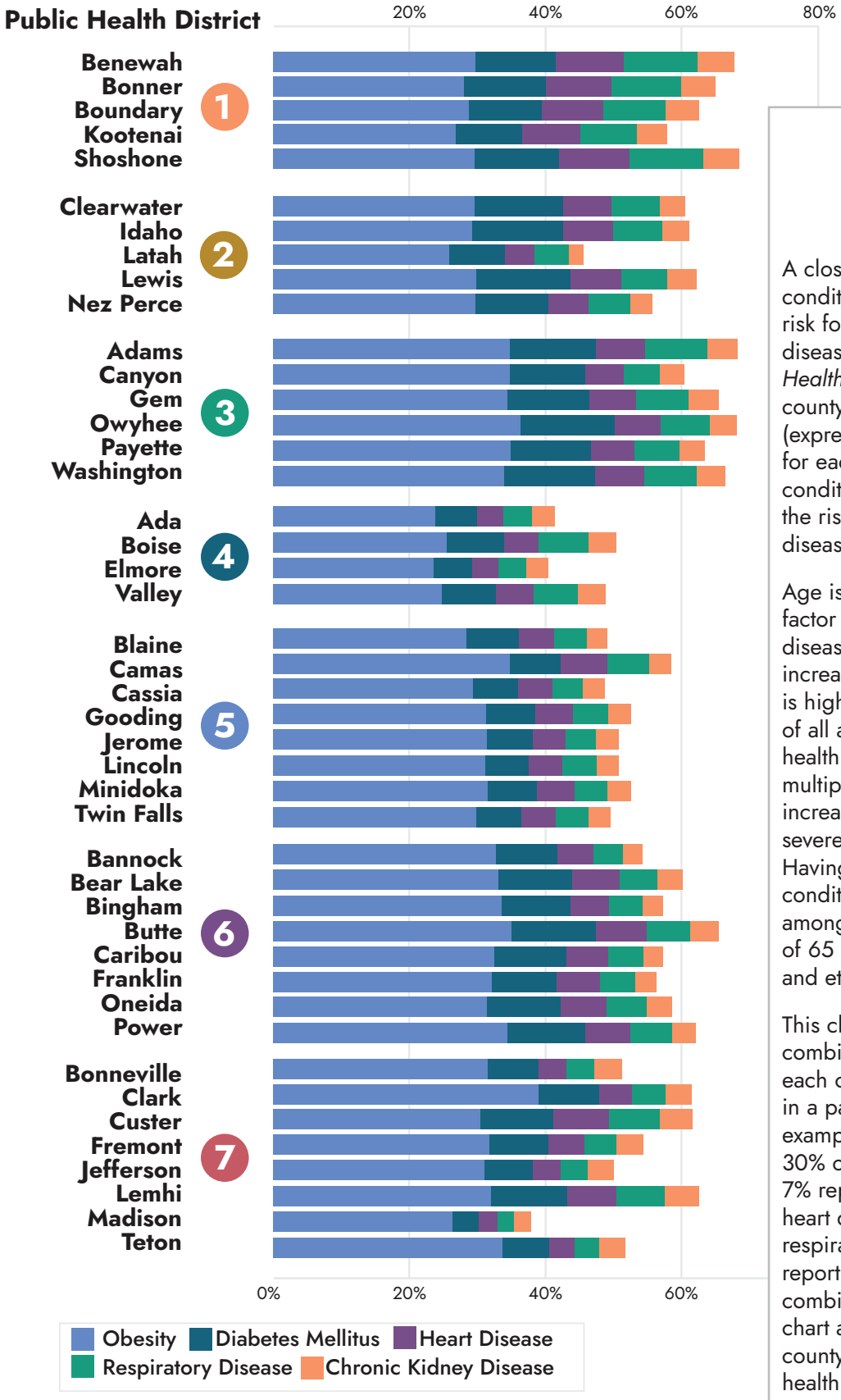


Comparison of the prevalence of at least one health condition associated with severe COVID-19 disease by Public Health District (PHD) and Idaho county



This chart shows the risk of having one of the five health conditions associated with severe COVID-19 disease, which varies by PHD and by county. PHD 4 reports the lowest risk, while PHD 3 reports the highest. PHD 7 reports the greatest risk variation between counties.

The combined percentage of each of the five reported health conditions by Public Health District (PHD) and Idaho county



A CLOSER LOOK

A closer look at health conditions that increase the risk for severe COVID-19 disease. *Modeling COVID-19 Health Disparities* produced county-level prevalence data (expressed as a percentage) for each of the five health conditions known to increase the risk for severe COVID-19 disease.

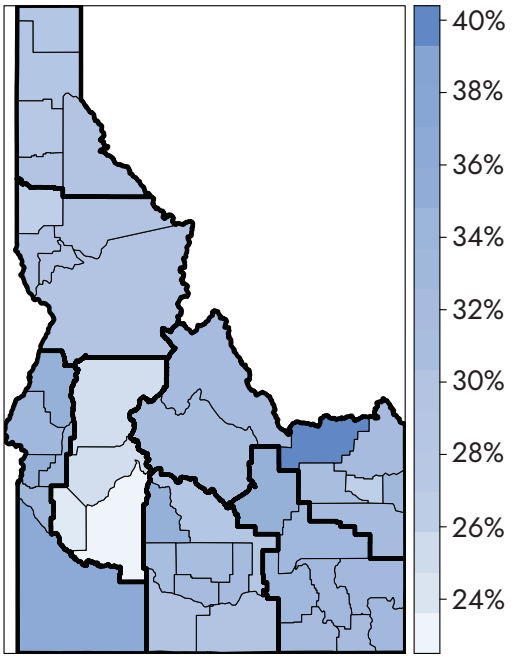
Age is the strongest risk factor for severe COVID-19 disease, and the risk greatly increases with age. The risk is higher among people of all ages with specific health conditions. Having multiple health conditions increases the overall risk for severe COVID-19 disease. Having more than one health condition is more common among people over the age of 65 and among some racial and ethnic minority groups.

This chart shows the combined percentage of each of the five conditions in a particular county. For example, in Twin Falls county, 30% of people report obesity, 7% report diabetes, 5% report heart disease, 5% report respiratory disease and 3% report kidney disease, for a combined total of 50%. This chart allows for the individual county comparison of specific health conditions.

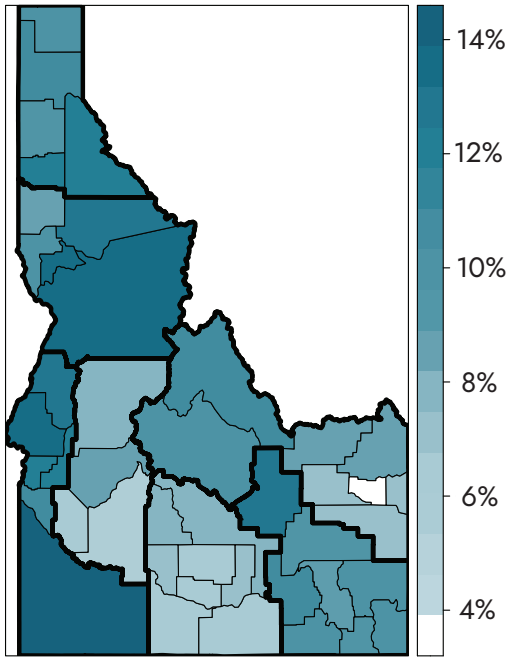
Social Determinants of Health

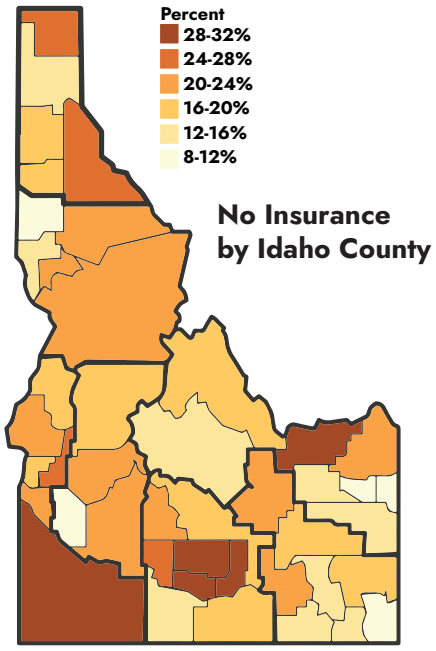
Socio-economic factors can place some individuals at higher risk for severe COVID-19 disease and make it difficult to seek, access, and receive medical care that is understandable and suitable. *Modeling COVID-19 Health Disparities* used the American Community Survey (ACS) data (poverty, no insurance, less than 12th grade education and limited English speaking household) to describe conditions that create barriers for people to maintain good health, obtain medical care, and reduce the risk of severe COVID-19 disease.

Obesity by Idaho County

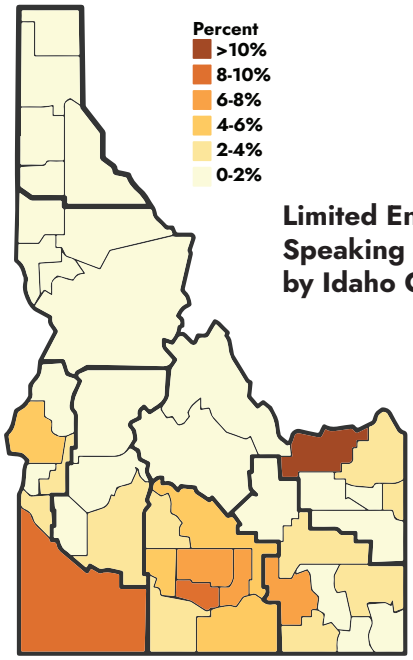


Diabetes by Idaho County





No Insurance by Idaho County



Limited English Speaking Household by Idaho County

Modeling COVID-19 Health Disparities created county-level estimates for over 10 health conditions and health behaviors known to increase the risk for severe COVID-19 disease and death. Follow the QR code for the *Modeling Idaho Health.org* interactive website for more county-level data, state comparisons, and contact information.

IMCI
Institute for Modeling Collaboration and Innovation

This project was made possible by National Initiative to Address COVID-19 Health Disparities through Centers for Disease Control and Prevention (CDC), #OT21-2103. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Idaho Dept of Health and Welfare, or CDC.

University of Idaho
College of Education, Health and Human Sciences