



Populations At-Risk for Severe Illness from COVID-19 May 2020, Colorado All Payer Claims Database

The Center for Improving Value in Health Care (CIVHC) conducted an analysis of the percentage of population from each county in Colorado with medical claims in the Colorado All Payer Claims Database (CO APCD) who meet the Centers for Disease Control (CDC) demographic and condition-specific criteria for being at-risk for severe illness from COVID-19.

This analysis identifies counties in Colorado that have a high percentage of persons at-risk for severe illness from COVID-19 as a means to: 1) forecast areas in Colorado that have the potential to experience higher incidence of severe disease and 2) begin analyzing the relationship between the geographic distribution of at-risk members and geographic distribution of other risk factors (e.g., social vulnerability, local health care capacity) and of current COVID-19 cases.

The data is available on the civhc.org website, and is sortable by county, payer type, gender, age group, and risk factor.

Findings

- Counties with the highest prevalence of patients at-risk for severe illness from COVID-19 are Custer (49.2%), Fremont (44.5%) and Huerfano (43.7%), all in the southern region of the state.
- The two most common risk factors for severe COVID-19 disease are age of 65 or older and chronic lung disease. A key driver of differences in the prevalence of the at-risk population by county is the percentage of the population that is age 65 and older.
- For some counties in the state, younger population (45 to 64 years old) have a high prevalence of chronic conditions that places them at risk for complications from COVID-19. In counties like Bent, Crowley, Huerfano, Lincoln, Logan, Morgan, Otero and Pueblo, up to 5 out of 10 people 45 to 64 years old are at risk of experiencing COVID-19 complications, due mostly to the prevalence of chronic lung disease, diabetes, and smoking.

Methods

- Risk factors. The following are the [criteria published by the CDC](#) for identifying groups at-risk:

Based on what we know now, those at high-risk for severe illness from COVID-19 are:

- People 65 years and older
- People who live in a nursing home or long-term care facility

People of all ages with underlying medical conditions are at higher risk for severe illness, particularly if the underlying medical conditions are not well controlled. This includes people with:

- Chronic lung disease or moderate to severe asthma*
- Serious heart conditions
- Conditions that can cause a person to be immunocompromised, including cancer treatment, smoking, bone marrow or organ transplantation, immune deficiencies, poorly controlled HIV or AIDS*, and prolonged use of corticosteroids and other immune weakening medications.

- Severe obesity (body mass index [BMI] of 40 or higher)
- Diabetes*
- Chronic kidney disease* and who are undergoing dialysis
- Liver disease

CIVHC operationalized the CDC criteria by further defining several of the disease categories, as follows:

- Chronic lung conditions include chronic obstructive pulmonary disease*, cystic fibrosis* pulmonary fibrosis and asbestosis, in addition to asthma*
- Serious heart conditions include: coronary artery disease with AMI, CABG or angioplasty; heart failure; conduction disorders; poorly controlled hypertension
- Liver disease includes: alcoholic liver disease, toxic liver disease, hepatic failure, chronic hepatitis, fibrosis and cirrhosis of liver, hemochromatosis and Wilson's disease.
- Smoking, which is considered an immune weakening behavior, is displayed as a risk factor on its own, and is not included in the group of immunocompromised conditions.

* Chronic conditions were identified using on CMS Chronic Condition Categories

- Chronic condition risk factors were identified using the Center for Medicare & Medicaid Services (CMS) Chronic Condition Categories or presence of a relevant diagnosis code. Members with chronic conditions identified using the CMS Chronic Condition categories met the associated CMS criteria for diagnosis codes and claim types. Members with poorly controlled hypertension were identified based on a principle diagnosis of hypertension in an inpatient or emergency department claim. Members with other chronic conditions were identified based on the presence of a relevant diagnosis on any claim line without consideration for claim type within the previous three years.
- A person might have more than one chronic disease or risk characteristic (e.g., 65 and older with diabetes). In these cases, a person is included in each risk group (in the example, this person is counted in the 65 and older risk group and the diabetes risk group).
- Death records are not available in the CO APCD. Members with hospital discharge disposition of “expired” were excluded. And, members included in the data set were required to have an enrollment record in the most current month.
- Zip code and county assignment was based on each member’s most recently reported address.
- Member age was calculated as the difference between the date of the report and the date of birth from enrollment records.
- This report is based on unique persons. Unique persons are included in the analysis if they were covered by any payer type at any time during calendar year 2019.
- Payer type (Commercial, Medicaid, Medicare FFS and Medicare Advantage) is created by assigning each person to only one payer type per year based on their primary medical insurance information during the most current year.
- Persons living in nursing or long-term care facilities were identified using the National Provider Identifiers (NPI) for facilities listed by CMS. Unique persons were counted as residents of these types of facilities if they had a claim within a 6-month look back period where they were “still patients” in the facilities identified by their NPIs.