

CDC Data Show High Hospitalization Rates for Diagnosed COVID-19 Patients with Underlying Conditions in the United States

On March 31, the Centers for Disease Control and Prevention (CDC) released a [Morbidity and Mortality Weekly Report](#) (MMWR) on the rate of hospitalization from novel coronavirus (COVID-19) among all patients age 19 and older, and those with underlying health conditions.¹ The MMWR uses preliminary data on a subset of 7,162 patients—those who tested positive for COVID-19 and have known health histories—from across the United States between February 12 and March 28, 2020. (*Note: Individuals who test positive do not represent all COVID-19 infections.*)² This is the first data reported on U.S. patients and is consistent with findings from other countries. Key takeaways:

- Most individuals with diagnosed COVID-19 do not require hospitalization, though patients with an underlying health condition—such as diabetes, and chronic lung and cardiovascular diseases—do have substantially higher rates of hospitalization and ICU admission.³ The new data show 40 percent of diagnosed COVID-19 patients with at least one underlying health condition were hospitalized (including 13 percent in ICU)—versus 9 percent of diagnosed COVID-19 patients without an underlying health condition (2 percent in ICU).
- Different underlying health conditions appear to have different rates of hospitalization: more than half of diagnosed COVID-19 patients with chronic renal disease (71 percent), neurologic disorders (62 percent), cardiovascular diseases (58 percent), and diabetes (51 percent) were hospitalized.⁴
- Individuals with underlying conditions also make up the majority of patients in the hospital and ICU for COVID-19. Of all hospitalized COVID-19 patients with known health histories, 73 percent had an underlying health condition. Individuals with underlying health conditions made up 78 percent of ICU patients and 94 percent of deaths, as well. For comparison, 38 percent of all diagnosed COVID-19 patients with health histories had an underlying health condition.
- The proportion of hospitalized COVID-19 patients with a health condition varies by age and disease severity—non-elderly adults in non-ICU setting are less likely to have an underlying condition and older adults (age 65+) in the ICU are most likely to have an underlying condition. For non-ICU hospitalizations, 59 percent of non-elderly adults and 88 percent of older adults had an underlying condition. For ICU admissions, 70 percent of non-elderly adults and 91 percent of older adults had an underlying condition.

This analysis—though based on preliminary and incomplete data, limited to individuals with positive COVID-19 test and known health histories, and with no indicators on severity or control of underlying health condition—follows findings from other countries that individuals with underlying health conditions are particularly susceptible to severe disease. Additional data on

hospitalization number and rates for diagnosed COVID-19 patients age 19 and older with known health histories follows.

Diagnosed COVID-19 Patients Age 19 and Older with Known Health History in United States, November 12-March 28, 2020⁵

	Number of Patients	Share of Patients	Number Hospitalized Overall	Percent Hospitalized Overall	Number Hospitalized in ICU	Percent Hospitalized in ICU
Total	7,162	100%	1,494	21%	457	6%
No conditions	4,470	62%	404	9%	99	2%
One or more conditions	2,692	38%	1,090	40%	358	13%
<i>Diabetes mellitus</i>	784	11%	399	51%	148	19%
<i>Chronic lung disease</i>	656	9%	246	38%	94	14%
<i>Cardiovascular disease</i>	647	9%	374	58%	132	20%
<i>Immunocompromised condition</i>	264	4%	104	39%	41	16%
<i>Chronic renal disease</i>	213	3%	151	71%	56	26%
<i>Pregnancy</i>	143	2%	35	24%	4	3%
<i>Neurologic disorder, neurodevelopmental, intellectual disability</i>	52	1%	32	62%	7	13%
<i>Chronic liver disease</i>	41	1%	16	39%	7	17%
<i>Other chronic disease</i>	1,182	17%	529	45%	170	14%
<i>Former smoker</i>	165	2%	78	47%	33	20%
<i>Current smoker</i>	96	1%	27	28%	5	5%

Source: TFAH analysis of CDC data

¹ Preliminary Estimates of the Prevalence of Selected Underlying Health Conditions Among Patients with Coronavirus Disease 2019 — United States, February 12–March 28, 2020. MMWR Morb Mortal Wkly Rep. ePub: 31 March 2020. DOI: <http://dx.doi.org/10.15585/mmwr.mm6913e2>.

² Diagnosed cases likely over-represent severe disease since some individuals with COVID-19 are unaware they are ill and others do not have symptoms that require medical attention, and do not get tested.

³ More than one-third of patients had at least one underlying health condition, which includes: chronic lung disease (including asthma, chronic obstructive pulmonary disease, and emphysema); diabetes mellitus; cardiovascular disease; chronic renal disease; chronic liver disease; immunocompromised condition; neurologic disorder, neurodevelopmental, or intellectual disability; pregnancy; current smoking status; former smoking status; or other chronic disease. Diabetes (11 percent of sample), chronic lung disease (9 percent), and cardiovascular disease (9 percent) are the most common conditions.

⁴ The differences in hospitalization rates is likely driven by a number of factors beyond the condition itself, like an older or younger age distribution and the breadth of seriousness and variety of conditions within each category.

⁵ When calculating the percent of diagnosed COVID-19 patients hospitalized, the small number of individuals with unknown hospitalization status (7 percent) were included in the denominator and thus treated as not hospitalized.