



GENERAL POPULATION

GLOBALLY

- As of 9/21/2020, there have been a total of 31,120,980 cases reported (**Cases/1,000~3.99** based on a population of 7.8 billion; ↑ from **2.78** on 08/17), 21,287,328 patients recovered, and 961,656 fatalities (**3.09% fatality rate**; ↓ from **3.58%** on 08/17) from COVID-19.

UNITED STATES

- As of 9/21/2020, there have been a total of 6,819,651 reported (**Cases/1,000~20.8**, based on a population of 328.2 million, ↑ from **16.5** on 08/17), 2,590,671 patients recovered, and 199,606 fatalities (**2.93% fatality rate**, ↓ from **3.15%** on 08/17) from COVID-19. A total of 95,108,559 tests have been performed.

TEXAS

- As of 9/21/2020, there have been a total of 713,028 cases reported (**Cases/1,000~24.6**, based on a population of 29 million ↑ from **19.2** on 08/17), 609,210 patients recovered and 15,088 fatalities (**2.12% fatality rate**, ↑ from **1.87%** on 08/17) from COVID-19. There is an estimate of 64,616 active cases with a total of 5,593,488 tests performed.

SAN ANTONIO

- Bexar County: As of 9/21/2020, there have been a total of 53,341 cases reported (**Cases/1,000~26.7**, based on a population of 2 million, ↑ from **22.2** on 08/17), 48,704 patients recovered and 1,246 fatalities (**2.34% fatality rate**, ↑ from **2.01%** on 08/17) from COVID-19. There is an estimate of 3,391 active cases with a total of 396,992 tests performed.



MEDICALLY AT-RISK POPULATIONS

ELDERLY POPULATION

- 8 out of 10 deaths reported in the US have been in adults 65 years or older.
- Male sex, age ≥ 60 years, delay in diagnosis and severe pneumonia have been associated with an increased CFR (Case Fatality Rate).
- In China, the CFR was 3.6, 1.3 and 0.4 for those greater than or equal to 80, 70-79 and 60-69 years of age, respectively, versus a CFR of 0.4 in those aged 30-59 years old.
- Higher proportion of severe to critical cases have been observed in the elderly population with dyspnea, lymphocytopenia, comorbidities including cardiovascular disease and chronic obstructive pulmonary disease, and acute respiratory distress syndrome being predictive of poor outcome.
- Recommendation:* The general public should continue to practice preventive measures (e.g., physical distancing, respiratory hygiene, and wearing face coverings in public settings) to protect older adults and persons with underlying medical conditions. People aged ≥60 years should wear medical masks for protection in settings where physical distancing cannot be achieved.

MALE POPULATION

- A greater incidence of disease and mortality as well as a longer clinical course for COVID-19 infection in the male versus female population has been documented.
- The strongest support for the COVID-19 discrepancy in males is linked to the pathophysiology of the virus. Angiotensin-converting enzyme 2 (ACE2) is a functional receptor for coronaviruses and is highly expressed in the heart, lungs, kidneys and testis. Levels are generally higher in males versus females.
- Comorbidities may also play a factor in the COVID-19 discrepancy.
- Recommendation:* The sex and gender disparities observed in COVID-19 vulnerability emphasize the need to better understand the impact of sex and gender on incidence and case fatality of the disease and to tailor treatment according to sex and gender. Clinical suspicion, accompanied by a relevant epidemiological history, should be followed by early imaging and a virological assay.

PREGNANT POPULATION

- To date, there is minimal evidence of vertical transmission of COVID-19; a systematic review followed 936 neonates and 27 of them were positive for COVID-19 when infection occurred in the third trimester*.
- In terms of clinical outcomes, data is still limited and conflicting. Most studies agree that clinical manifestations and severity are similar between pregnant and non-pregnant adults, however, one systematic review found that COVID-19 infection was associated with a relatively higher rate of preeclampsia and caesarian.
- Several studies found a higher rate of preterm birth though other poor perinatal outcomes are less supported.
- 20 infants were breastfed by COVID-19 positive mothers and none of the infants became positive.
- Recommendation:* Systematic screening of any suspected 2019-nCoV infection during pregnancy and extensive intensive follow-up for confirmed mothers and their fetuses is recommended. Breastfeeding can be continued if the parent is COVID-19 positive but precautions (hand washing before touching the infant and mask wearing) should be taken. There is still uncertainty if COVID-19 can cross the placenta in-utero but study suggest low rates of vertical transmission of COVID-19 during the third trimester*.



MEDICALLY AT-RISK POPULATIONS CONTINUED

PEDIATRIC POPULATION

- Children (ages 0-17) make up only 1-7.5% of confirmed cases so far, though this may be due to under-testing of asymptomatic or mild cases.
 - A case series of 91 children (0-18 years old) with COVID-19 in Korea found that only 8.5% of symptomatic cases were diagnosed at the time of symptom onset, suggesting that symptoms screening fails to identify most COVID-19 cases in children*.
 - The number and rate of cases in children are increasing.
- Children who live in low income households, as well as Black and Hispanic children, have disproportionately high rates of infection compared to white children and those from high income households. The high rates persisted even when each was adjusted for comorbidities and socioeconomics individually.
- While most cases in children are mild, severe illness requiring hospitalization and mortality do occur. One in three children who are hospitalized are admitted to the ICU.
 - Children with preexisting comorbidities and infants may be at higher risk for severe illness.
 - Hispanic children and Black children are hospitalized at eight times and five times the rate of white children, respectively.
- Multisystem Inflammatory Syndrome (MIS-C) is rare but serious syndrome affecting mostly children who were previously healthy. A relatively high proportion of Black and Hispanic children develop MIS-C, though it seems to be similar to the percent of Black and Hispanic children infected with COVID-19.
- Recent evidence suggests male and female children seem to be equally susceptible to COVID-19.
- There is conflicting evidence on whether children transmit COVID-19 less readily than adults. More recent evidence indicates children may have similar transmission rates as adults. As schools reopen globally, some have shown outbreaks soon after reopening, while schools in areas with well-controlled COVID seem to have opened safely.
- *Recommendation:* Clinicians should monitor for progression of illness in children, especially in infants, and children with pre-existing conditions, as well as for MIS-C. Public health efforts should ensure equitable allocation of testing and culturally appropriate prevention education. More research is needed to determine the modifiable reasons for disparities in COVID infection rates and hospitalizations in order to find effective preventative measures. Preventive measures (e.g., social distancing, respiratory hygiene, and wearing face coverings in public settings where social distancing measures are difficult to maintain) should be continued to prevent transmission by children and adults with asymptomatic or mild disease. Schools will need to have adequate preventive measures (distancing, sanitization, and air ventilation and filtration) to reopen safely.

BLACK POPULATION

- In the United States, the infection rate is more than 3-fold higher and the death rate is 6-fold higher in predominantly Black counties than in predominantly white counties. In California, the odds of hospitalization is 2.7x higher when compared to non-hispanic whites.
 - COVID-19 is disproportionately affecting African-Americans in various places in the US: African Americans made up almost half of Milwaukee County's 945 cases and 81 percent of its 27 deaths in a county whose population is 26 percent black. In Michigan, with the state's population 14 percent black, African Americans made up 35 percent of cases and 40 percent of deaths, as of April 3.
- Some reports suggest the COVID-19 discrepancy is due to a higher rate of comorbidities in the Black population, but recent studies found that persisting social inequities, such as poverty, racial discrimination, spatial exclusion and employment types / opportunities, also play a role.
 - For instance, obesity is associated with higher risk of contracting severe COVID-19 infection. African-Americans have higher rates of obesity than their white counterparts.
- Health systems
 - Within one health system in Louisiana, blacks experienced higher rates of hospitalization, were more likely to require a ventilator, but did not have a greater in-hospital mortality than whites. This may be attributed to barriers in accessing timely care.
 - In a New Orleans community clinic, 68/117 positive patients were African American and 3/6 African American patients were hospitalized*.
 - In a New York study, the second strongest predictor of positive COVID-19 tests was self identifying as African American / Black*.
- Other systematic and structural factors such as Implicit bias from providers also needs to be further investigated, with special consideration give to Do Not Resuscitate (DNR) orders in their patients.
- *Recommendation:* Documenting racial/ethnic variations in testing and treatment is essential. Public health officials must prioritize prevention activities in communities and racial/ethnic groups most affected by COVID-19, including Black populations. Prioritizing access to early testing and equitably applied interventions may prevent the risk of COVID-19 transmission in marginalized populations. Investigation should occur to discern whether disparities are due to comorbidities, job exposure, or systemic racism in healthcare/society at large.



MEDICALLY AT-RISK POPULATIONS CONTINUED

LatinX POPULATION

- Infection rates
 - Of the 45% of cases where demographic data were available, 33% occurred in Hispanic or LatinX patients.
 - In New Jersey, 19% of the total population is Hispanic but Hispanic people make up 30% of COVID-19 cases. This is also occurring in Utah (14% of total population vs 38% of COVID-19 cases) and Washington (13% of total population vs 34% of COVID-19 cases).
 - In Chicago, Baltimore and parts of California, Oregon, Washington and Iowa, the LatinX population has seen a higher infection rate.
- Mortality rates
 - Hispanic people are dying at a rate above what population data would suggest. CDC's weighted population data show that over 26% of US COVID-19 deaths were among Hispanic people, who represent only 18% of the total US population.
 - In NYC, a higher mortality rate is present (74.3/100,00 vs 45.2 in the white population).
- Reasons for disparities
 - Disparities may be occurring due to LatinX exposure in frontline jobs (grocery stores, waste management, cleaning and sanitation services, and food delivery), due to living conditions, or could not shelter in place while maintaining an income*. Twenty-five percent of Hispanic people live in multigenerational households (compared with only 15% of non-Hispanic white people). One major area of concern is Construction where Latinos represent 30% of the total construction workforce. "Essential" projects, job hazards, and lack of health insurance/benefits could be variables factoring into poor outcomes in Hispanics with COVID-19.
 - Possible causes include LatinX workers having less flexibility to work remotely, less access to healthcare and language barriers.
- *Recommendation:* Though the amount of racial and ethnic data on the epidemiology of COVID-19 has increased, more data is needed to fully characterize how COVID-19 affects LatinX populations and to understand the impact of both sex and race on hospitalization rates in this population. Evidence suggests that disparity may be worsening due to lack of education and health awareness among LatinX people. National programs (such as CDC's REACH program) and local programs (such as Penn State Project ECHO) are being implemented to increase education and resources dedicated to the LatinX community. More programs at local, state, and national levels should be implemented to educate Latinos by translating information into Spanish and increasing outreach.

LGBTQ+ POPULATION

- The LGBTQ+ Population may be more at risk for COVID-19 due to increased tobacco rates usage (50% greater than general population), higher rates of HIV and cancer, and health disparities (both pre-existing and current).
- A large survey (n=1051) of men who have sex with men (MSM) found that 25.4% of participants reported decreased access to STI testing or treatment.
- A survey (n=581) of LGBTQ individuals found that:
 - 17.9% report losing their job as a result of the pandemic.
 - 30.2% report reduced wages as a result of the pandemic.
 - 14.2% report difficulties getting routine medications.
 - 24.1% report difficulties accessing healthcare.
 - 58.7% report avoiding going to the doctor or dentist for routine care.
- Survey (n=857) of LGBTQ population found:
 - 31.5% showed criteria for probably clinical depression & 27.9% showed criteria for general anxiety disorder*
 - 34.7% showed reduced connection with LGBTQ community*
 - 4.2% showed increased frequency of family conflict regarding sexual orientation*
 - Younger age groups (16-25) were more likely to experience financial strains along with depressive/anxiety symptoms*
 - Older age groups (36 and up) were more likely to show reduced connection within their LGBTQ community*
- Stay-at-home orders may have increased family pressures and economic instability that lead to dangerous situations for LGBTQ individuals who are staying at home. Support networks and staff may be more inaccessible due to the COVID-19 crisis.
- The closing of K-12 schools and higher education institutions may limit young LGBTQ+ individuals access to mental health care services. LGBTQ+ individuals are more susceptible to mental health illnesses and may face negative health outcomes due to decreased access to care
- *Recommendation:* Telehealth and a mailed specimen self-collection services should be developed to ensure continued access to mental health care (including to address the mental health impacts of social distancing) and HIV/STI prevention and treatment. To avoid exacerbating health disparities, large-scale seroprevalence studies must be deployed to better understand the potential co-morbidity of HIV and SARS-CoV-2 among MSM. LGBTQ individuals may also benefit from periodic home-calls from healthcare providers. This is to ensure that these individuals are not in any dangerous/unfavorable situations at home while under stay-at-home orders. These home-calls should include a multidisciplinary team of providers who can provide care in different aspects of the individual's life*.