

COVID-19

COVID-19 and co-morbidities – AMERICAS

Hands-on tool to estimate the population at increased and high risk of severe COVID-19 disease due to underlying health conditions for the Americas

Frequently Asked Questions (FAQ)

1. Which are the co-morbidities related with severe COVID-19 illness?

Underlying health conditions for severe COVID-19¹ are conditions associated with “increased risk of severe COVID-19” from guidances published by WHO, CDC and Public Health England (PHE), and include the following conditions:

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| (1) cardiovascular disease | (8) HIV/AIDS |
| (2) chronic kidney disease | (9) tuberculosis (active) |
| (3) chronic respiratory disease | (10) chronic neurological disorders |
| (4) chronic liver disease | (11) sickle cell disorders |
| (5) diabetes | (12) tobacco smoking |
| (6) cancers with direct immunosuppression | (13) severe obesity (BMI ≥40) |
| (7) cancers without direct immunosuppression, but with possible immunosuppression caused by treatment | (14) hypertension |

2. What is severe COVID-19?

Severe COVID-19² is a severe acute respiratory illness presenting fever and at least one sign/symptom of respiratory disease, (e.g., cough, shortness of breath); AND requiring hospitalization.

3. What are the most vulnerable populations affected by severe COVID-19?

The risk of severe COVID-19 if an individual becomes infected is known to be higher in the older population (65+ years old) and among those with underlying health conditions.

4. What is a shielding strategy?

A shielding strategy³ is a measure to protect extremely vulnerable people by minimizing interaction between those who are extremely vulnerable and others.

5. What is the purpose of the COVID-19 and co-morbidities in the Americas tool?

Understanding the number of individuals at increased risk of severe COVID-19 can inform the design of possible strategies to shield, manage chronic care conditions and guide the vaccine allocation for those at highest risk. Additionally, the tool allows countries to estimate the percentage of the population with no conditions, one condition and multiple conditions by 5-year age ranges.

6. What is the key information produced by the tool?

The primary outcomes produced by the tool are the number and percentage of the population at increased risk and high risk of severe COVID-19 disease and the distribution within the population according to the number of conditions by 5-year age ranges and sex.

7. What is the population at increased and high risk of severe COVID-19?

¹ WHO guidance on COVID-19 and NCDs, 2020. Available at: <https://rb.gy/8rcqsj>; Public Health England (PHE) definition of individuals at increased risk of severe COVID-19 illness. Available at: <https://rb.gy/dlkcze>; CDC guidance on individuals at higher risk of severe COVID-19 disease. Available at: <https://rb.gy/lwbqlw>

² WHO, Global Surveillance for human infection with coronavirus disease (COVID-19), 2020. Available at: <https://rb.gy/erfdbj>

³ Public Health England, 2020. Guidance on shielding and protecting people defined on medical grounds as extremely vulnerable from COVID-19. Available at: <https://rb.gy/lh5p9s>

Population at increased risk of severe COVID-19⁴ are those with at least one underlying health condition (from the 14 underlying health conditions) listed as “at increased risk” from public health agencies guidances (WHO, CDC and PHE). To help the interpretation of the degree of risk among those at increased risk the model/tool also estimate the number of individuals at high risk defined as those that would require hospitalization if infected.

8. What data are needed to generate the outcomes produced by the tool?

The primary data needed for the tool are: the prevalence of underlying conditions by sex and age ranges, population with 2+ conditions among those with 1+ conditions, coverage of antiretroviral therapy among persons living with HIV/AIDS, infection hospitalization ratios, life expectancy at exact age, and population estimates by sex and 5-year age ranges.

9. Does the tool allow countries/sites to input their own data?

PAHO in collaboration with the London School of Hygiene and Tropical Medicine/Centre for the Mathematical Modelling of Infectious Diseases COVID-19 working group (LSHTM/CMMID-COVID-19) conducted an adaptation of the tool/model to tailor it and better respond to countries’ needs. In the Americas’ version of the tool, countries/sites can include their own data, when available, and/or use information from the Global Burden of Disease (GBD) 2017⁵.

10. How the information produced by the tool can help countries/sites to plan actions to protect the population that are at increased and high risk for COVID-19 due to underlying health conditions?

Identifying at-risk populations allows making projections of the probable health burden in countries, and for the design of effective strategies that aim to reduce the risk of transmission to people in target groups. Moreover, if a vaccine becomes available in the future, the tool could provide an indication of the number of people with underlying conditions who would need to be vaccinated by geographic site, and therefore the volumes that would be required for vaccination.

11. What are the limitations of the tool in terms of interpretation of the results?

Some aspects should be considered when interpreting the results produced by the tool/model. The estimates can be generated for high, middle and low scenarios using uncertainty intervals. The results focus on underlying health conditions rather than other risk factors such as ethnicity and socioeconomic deprivation, but provide a starting point for considering the number of individuals that might need to be protected as the pandemic unfolds. However, when countries use their own data estimates for at least one condition can be produced by social stratifiers.

12. Is it possible to change some features of the tool?

The tool allows different scenarios/assumptions to be explored. Different health conditions may be included or excluded, different age thresholds and choices about key assumptions may be assessed. The tool can also be updated with local sources of prevalence data, and specific conditions added or removed as more evidence emerges.

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⁴Clark A, Jit M, Warren-Gash C, Guthrie B, Wang HH, Mercer SW, Sanderson C, McKee M, Troeger C, Ong KL, Checchi F. Global, regional, and national estimates of the population at increased risk of severe COVID-19 due to underlying health conditions in 2020: a modelling study. The Lancet Global Health. 2020 Jun 15. Available at: <https://rb.gy/zggzaa>
⁵ Global Burden of Disease, 2017. Available at: <https://rb.gy/gmbv1s> Note: The estimates are not official estimates of the Institute for Health Metrics and Evaluation (IHME). The authors (LSHTM/CMMID-COVID-19 working group) have applied their own calculations/methods to the publicly available datasets.