

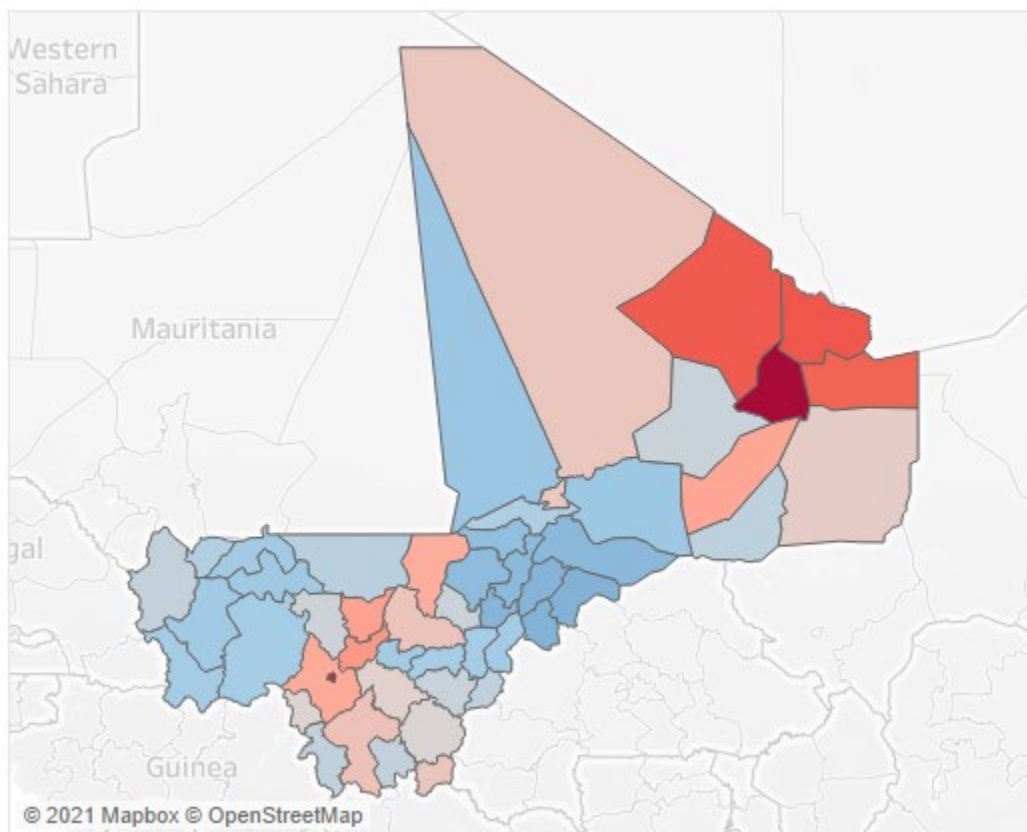
ASSESSING THE RISK OF COVID-19 IN MALI

As COVID-19 vaccines are becoming available, governments will need to assess the number and location of the most vulnerable people within their populations. However, problematically, tracking data for most low- and middle-income countries are only available at the national level. To support the COVID-19 relief effort, the Gender, Climate Change, and Nutrition Integration Initiative (GCAN) was commissioned to develop a subnational dataset of key COVID-19 risk indicators and potential risk hotspots.

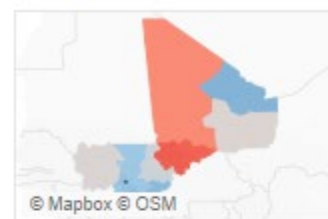
Based on patient data compiled and analyzed worldwide, the science community's consensus is that key COVID-19 risk factors include age, sex, and obesity. Being old, male, and obese increases both vulnerability to infection and the likelihood of negative outcomes. Based on each indicator's COVID-19 death hazard ratio, a composite index for the second-level subnational administrative units was constructed using exploratory factor analysis (a statistical technique that reduces the number of variables). The results of the subnational risk index (map a) and the risk indicators (maps b, c, and d) are presented visually below, resulting in hotspots (the redder colors) and cold spots (the bluer colors).

The age-related risk is high in cercles across Mopti and Timbuktu Regions. The sex-related risk (i.e., more male) is high in Kidal and Bamako. The obesity-related risk is highest in Kidal and Koulikoro. Overall, the highest risk is estimated in Kidal (Kidal, Tessalit, Abeibara, Tin-Essako) and Bamako.

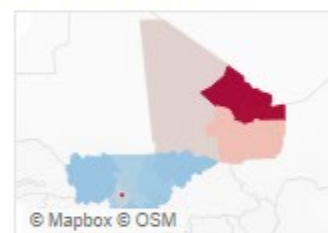
a. Risk index in Mali



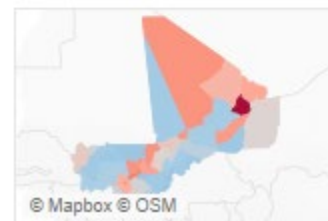
b. Age-related risk



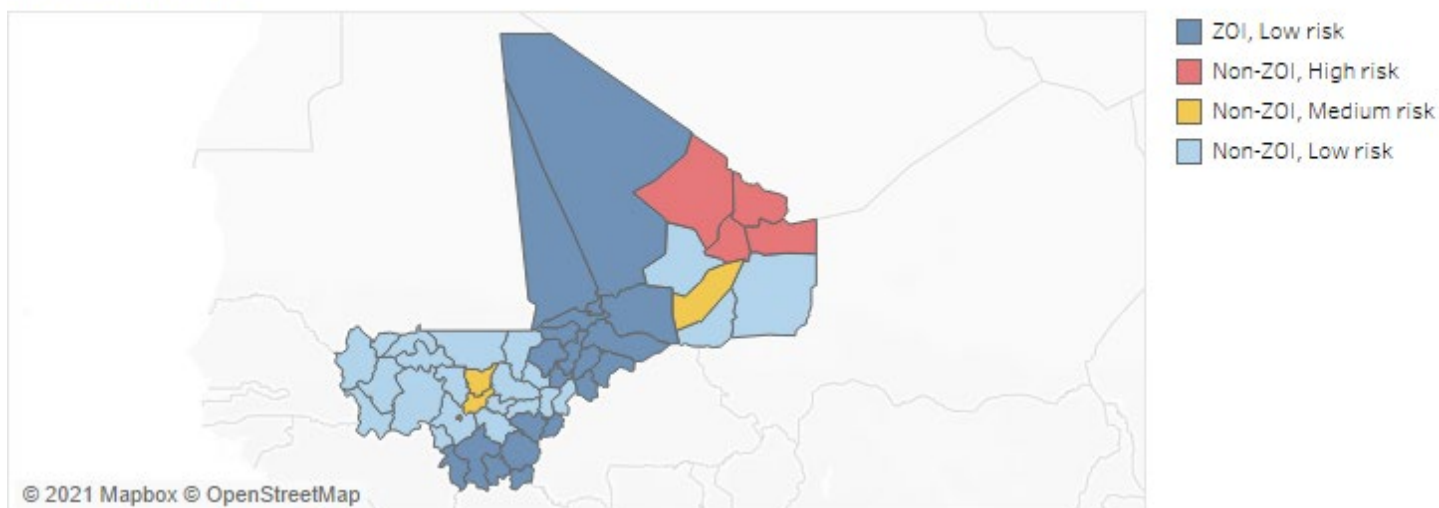
c. Sex-related risk



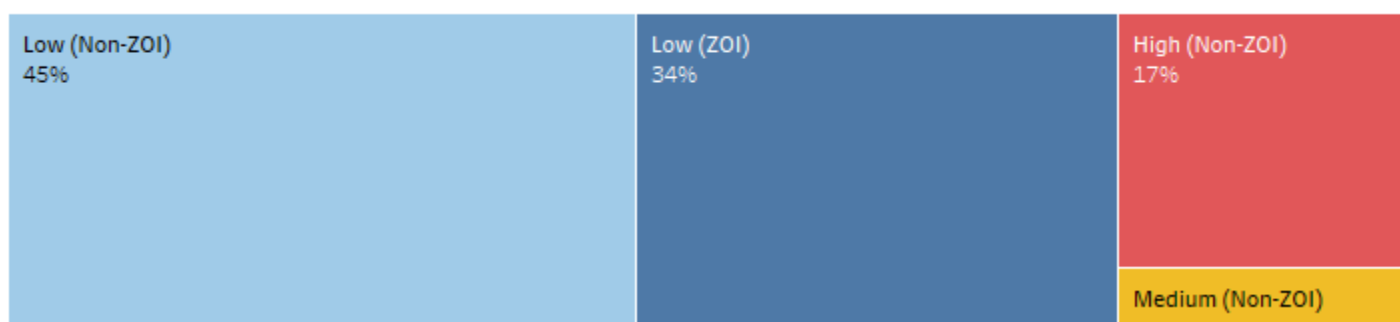
d. Obesity-related risk



e. Risk index classes



f. Distribution of adult population in each class of risks



The above figures categorize the risk index values into areas of low, medium, and high risk (map e) and visualize the number of adults (≥ 18 years old) in each category (figure f). ZOI indicates the zone of influence of the U.S. Government's Feed the Future program. Areas of high risk are Bamako and Kidal (Abeibara, Kidal, Tessalit, and Tin-Essako Cercles). None of the high-risk areas are located in ZOI.

The total number of adults in the high risk areas is about 1.7 million (17% of the country's total adult population). Except for Bamako, all high-risk areas are located in rural areas. Given the relatively high estimated risk in rural areas, supporting interventions targeting agricultural laborers should be encouraged. Recently published studies also underscore that, across low- and middle-income countries, rural areas show lower accessibility to safe water for personal hygiene and healthcare facilities than urban areas. Another notable vulnerability in rural areas is related to household structure and composition. About 92% more rural households live with elders (older than 65) than urban households in Mali. The higher share of elders across larger, rural households may render those areas particularly vulnerable to the spread of COVID-19. Rural households may also disproportionately get impacted by country-wide lockdown measures. According to a phone survey conducted by the World Bank in mid-2020, about 50% of rural households in Mali reported agricultural income reductions or complete loss. For personal hygiene in the household, only 39% of the rural population has access to basic handwashing facilities, including soap and water, versus 70% in urban areas.¹

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¹ WASH and COVID-19. UNICEF, 2020. <https://data.unicef.org/topic/water-and-sanitation/covid-19>. Accessed 9 February 2021.