Epidemiological Alert COVID-19: Increase in hospitalizations and deaths among patients under 60 years of age.

26 April 2021

Given the increase in the rate of hospitalizations due to COVID-19 in younger age groups, the Pan American Health Organization / World Health Organization (PAHO/WHO) recommends that Member States prepare health services to attend to an eventual surge in the demand of more complex care in the management of these patients.

Introduction

The review and analysis of reported COVID-19 cases indicated that the number of hospitalizations, hospitalizations in Intensive Care Units (ICU), and deaths were higher among older adults[1,2,3,4] and in those with comorbidities[5,6]. In the Region of the Americas, 67%[7] of the deaths that occurred in 2020 corresponded to older adults.

[1] Wang L, He W, Yu X, et al. Coronavirus disease 2019 in elderly patients: characteristics and prognostic factors based on 4-week follow-up. J Infect. 2020 doi: 10.1016/j.jinf.2020.03.019. Available at : https://bit.ly/2PhuQrz

[2] Perrotta F, Corbi G, Mazzeo G et al. COVID-19 and the elderly patients: insights into pathogenesis and clinical decision-making. Available at: https://bit.ly/3xjMo7F

[3] Mueller A, McNamara M, Sinclair D. Why does COVID-19 disproportionately affect older people? Aging (Albany NY) 2020 May 31; 12(10): 9959–9981. Published online 2020 May 29. doi: 10.18632/aging.103344
PMCID: PMC7288963. Disponible en: https://bit.ly/3ncHwwj

[4] Wu, J.T., Leung, K., Bushman, M. et al. Estimating clinical severity of COVID-19 from the transmission dynamics in Wuhan, China. Nat Med 26, 506–510 (2020). https://doi.org/10.1038/s41591-020-0822-7 Disponible en: https://go.nature.com/3tS2XW4

[5] European Centre for Disease Prevention and Control (ECDC). Clinical characteristics of COVID-19. WHO Director-General's opening remarks at the Member State Information Session on COVID-19 - 22 April: https://bit.ly/3xjiEHW

[6] Hu B, Guo H, Zhou P, Li-Shi Z. Characteristics of SARS-CoV-2 and COVID-19. Characteristics of SARS-CoV-2 and COVID-19. Nat Rev Microbiol 19, 141–154 (2021). https://doi.org/10.1038/s41579-020-00459-7. Available at: https://go.nature.com/3ev52ka

[7] Data shared by IHR National Focal Points (NFPs) or published on the websites of the Ministries of Health, Health Agencies or similar and analyzed by PAHO/WHO.

Suggested citation: Pan American Health Organization / World Health Organization. Epidemiological Update: COVID-19: Increase in hospitalizations and deaths among patients under 60 years of age, 26 April 2021, Washington, D.C.: PAHO/WHO; 2021.

However, at a global level[8] there is a change in the age profile of hospitalized cases, and those hospitalized in ICU, with a higher rate of hospitalization in the younger population.

To measure the severity of COVID-19, some of the measures that have historically been used to assess the clinical severity of influenza[9] were considered. Although the data available for analysis are preliminary and subject to change as they are updated retrospectively, two indicators were used: ICU hospitalization rates and deaths.

Following is a summary of the severe cases of COVID-19, in Brazil, Chile, Paraguay and Peru, countries for which information is available on the increase in clinical severity in the population under 60 years of age.

Analysis of hospitalizations and deaths

In **Brazil**, since the confirmation of the first COVID-19 case[10] and as of 20 April 2021, there were 13,973,695 COVID-19 cases confirmed, including 374,682 deaths (3% case fatality rate).

Between 1 March 2020 and 15 March 2021[11], it is observed that older adults (≥60 years) have the highest daily hospitalization rates[12], compared to the other age groups during the analyzed period. As of the end of January 2021, an increase in daily hospitalization rates is observed in all age groups (**Figure 1**). In comparing the peak hospitalization rate that occurred in 2020 (13 July) with the peak rate in 2021 (10 March) it can be observed that the age groups ≤ 39 years, 40-49 years, and 50-59 years doubled the value of hospitalization rates. Additionally, the highest percentage increase was reported in the age group of 40-49 years (56%), followed by the ≤39 years (53%), and the 50-59 years (51%) groups. Among older adults (≥ 60 years), the observed increase was lower, reaching 32%.

[8] WHO Director-General's opening remarks at the Member State Information Session on COVID-19 - 22 April 2021. Available at: https://bit.ly/3vcoEAo

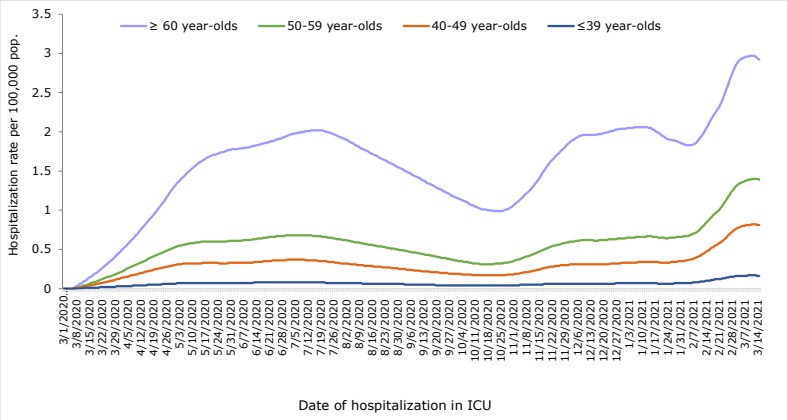
[9] Reed, C., Biggerstaff, M., Finelli, L., Koonin, L. M., Beauvais, D., Uzicanin, A....Jernigan, D. B. (2013). Novel Framework for Assessing Epidemiologic Effects of Influenza Epidemics and Pandemics. Emerging Infectious Diseases, 19(1), 85-91. https://doi.org/10.3201/eid1901.120124. Available at: https://bit.ly/3ntRGZJ

[10] 27 February 2020

[11] The period between 16 March and 14 April has been intentionally excludeddue to the data are provisional and subject to change, as adjustments and retrospective analysis are made.

[12] Data on daily ICU hospitalization were obtained from data published by the Brazilian Ministry of Health. Available at: https://bit.ly/3tKOgEa. For population data, data from Brazil Population Projections by sex and simple ages: 2020-2060 were used. DATASUS. Available at: https://bit.ly/3ay3sgu

Figure 1. Hospitalization rate of confirmed COVID-19 cases, in ICU, by age group. Brazil, March 2020 to March 2021.



Note: The data are provisional and subject to change, as adjustments and retrospective analysis are made.

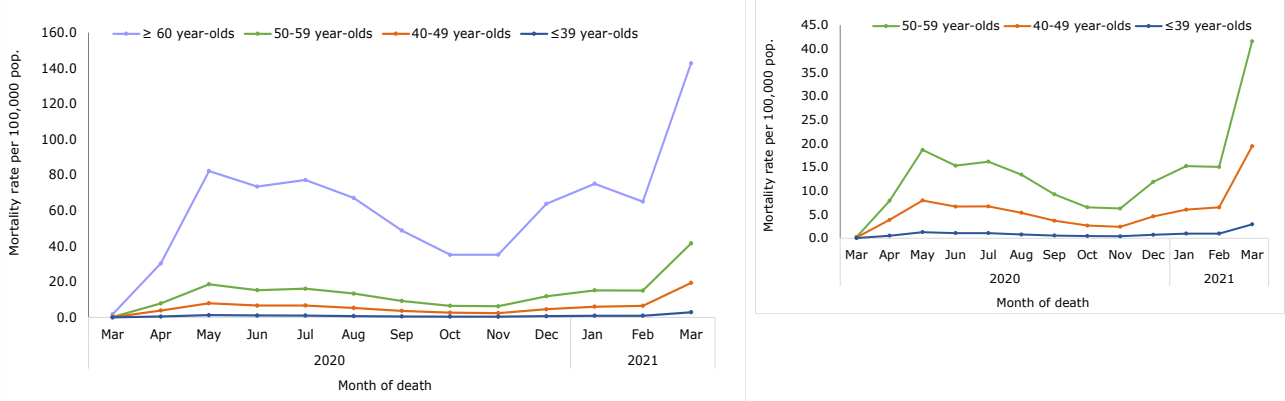
Source: Data published by the Brazilian Ministry of Health and analyzed by PAHO/WHO.

With regard to mortality rates, an increase has been observed since the beginning of December 2020 in all age groups, maintaining the previous profile; in other words, older adults present rates well above those of other age groups in a range between 1.8 per 100,000 population (March 2020) and 142.7 per 100,000 population (March 2021) compared to ranges of 0.0 to 2.9 per 100,000 population in the age group of ≤39 years, from 0.2 to 19.4 per 100,000 population in the age group of 40-49 years and from 0.3 to 41.6 per 100,000 population in the age group of 50-59 years (March 2020 and March 2021 in all groups) (**Figure 2**).

However, when comparing the mortality rates reported in December 2020 with those of March 2021, it is observed that while in older adults the mortality rate doubled, mortality rates quadrupled in the age groups of ≤39 years and 40-49 years, and the rate tripled in the 50-59 age group.

Suggested citation: Pan American Health Organization / World Health Organization. Epidemiological Update: COVID-19: Increase in hospitalizations and deaths among patients under 60 years of age, 26 April 2021, Washington, D.C.: PAHO/WHO; 2021.

Figure 2. Mortality rates of COVID-19, by age group. Brazil, March 2020 to March 2021.



Note: The data are provisional and subject to change, as adjustments and retrospective analysis are made.

Source: Data published by the Brazilian Ministry of Health available in SIVEP-Gripe and in DATASUS[13] and analyzed by PAHO/WHO.

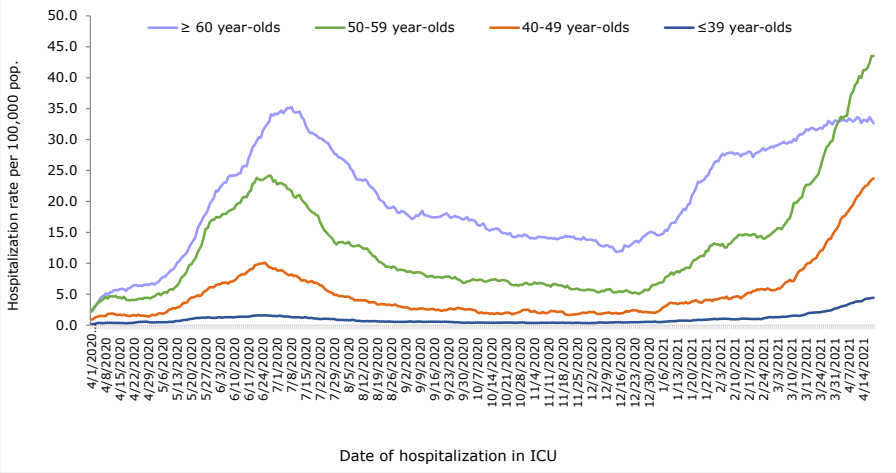
In **Chile,** from the confirmation of the first case of COVID-19[14] until 20 April 2021, there were 1,136,435 cases confirmed, including 25,317 deaths (2% case fatality rate).

The daily occupancy rates for ICU beds[15] show that between April and December 2020, a similar profile was maintained, demonstrating that the older the person, the higher the hospitalization rate. However, from mid-March 2021 onwards, a change in this pattern has been observed, with the 50-59 years age group presenting a higher rate than that of older adults (**Figure 3**). Additionally, in those under 49 years of age the rate tripled, showing increases of 71% and 65% in the age groups of ≤39 years and 40-49 years, respectively, and in the age group of 50-59 years the rate doubled. In the same period, the age group ≥60 years presented an 8% decrease in the rate of hospitalization in ICU.

[13] Brazil population projections by sex and simple ages: 2020-2060. Available at: https://bit.ly/3ay3sgu
[14] 3 March 2020
[15] The rates were calculated, using the number of COVID-19 cases per day in ICU, published by the Government of Chile. Official COVID-19 figures. Available at: https://bit.ly/3fMQuPn and the population projections for the years 2020 and 2021, published by the National Institute of Statistics (INE, per its acronym in Spanish), available at: https://bit.ly/2PC0mAW

Suggested citation: Pan American Health Organization / World Health Organization. Epidemiological Update: COVID-19: Increase in hospitalizations and deaths among patients under 60 years of age, 26 April 2021, Washington, D.C.: PAHO/WHO; 2021.

Figure 3. Hospitalization rate of confirmed COVID-19 cases, in ICU, by age group. Chile, April 2020 to April 2021.



Note: The data are provisional and subject to change, as adjustments and retrospective analysis are made.

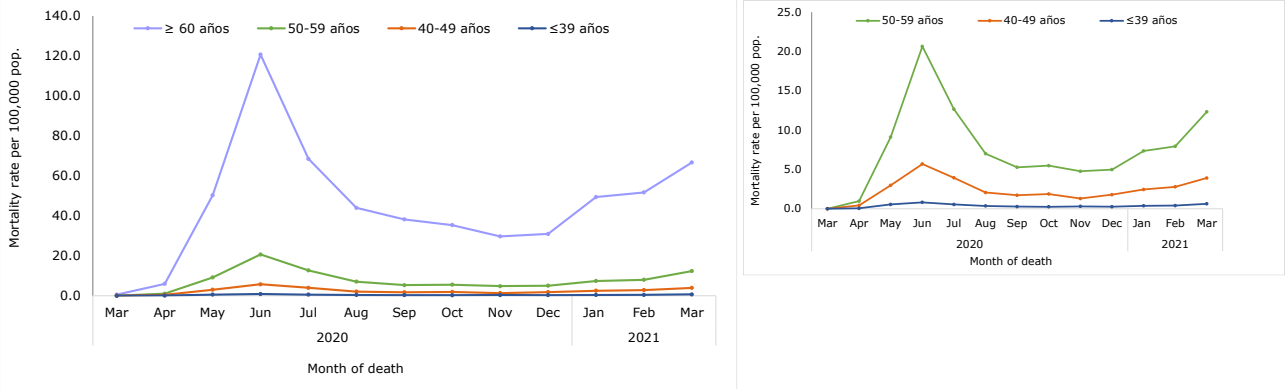
Source: Data published by the Government of Chile[13] and analyzed by PAHO/WHO.

The analysis of the monthly mortality rates[16] indicates that during period analyzed (March 2020 to March 2021) the age group of ≥60 years presented mortality rates widely exceeding the rates of the other age groups in a range between 0.5 (March 2020) and 120.7 per 100,000 population (June 2020) compared with ranges from 0.0 to 0.6 per 100,000 population in the age groups of ≤39 years, from 0.0 to 3.9 per 100,000 population in the age group of 40-49 years (March 2020 to March 2021 in both groups), and from 0.0 (March 2020) to 20.6 (June 2020) per 100,000 population in the age group of 50-59 years (**Figure 4**).

When comparing the mortality rates reported in December 2020 with the rates reported in March 2021, a doubling in mortality rates by all age groups is observed, with the highest percentage increases in the age groups of 50-59 years (60%) and ≤39 years (59%).

[16] For the calculation of mortality rates, the data published by the Department of Health Statistics and Information of the Ministry of Health of Chile were used. Only confirmed COVID deaths U07.1. Available at: https://tabsoft.co/3a99Me6, accessed on 20 April 2021, and the INE population projections.

Figure 4. Mortality rates of COVID-19, by age group. Chile, March 2020 to March 2021.



Note: The data is provisional and subject to change, as adjustments and retrospective analysis are made.

Source: Data published by the Department of Health Statistics and Information of the Ministry of Health of Chile and analyzed by PAHO/WHO.

In **Paraguay**, since the confirmation of the first COVID-19 case[17] and as of 20 April 2021, there were 252,443 COVID-19 cases confirmed, including 5,384 deaths (2% case fatality rate).

A review of the mortality rates[18] between March 2020 and March 2021, shows that the age group of ≥60 years had the highest mortality rates with a range between 0.6 and 101.7 per 100,000 population. The mortality rate for the age group of ≤39 years ranged from 0.1 to 12.7 per 100,000 population, for the age group of 40-49 years it ranged between 0.0 to 1.2 per 100,000 population, and for the age group of 50-59 years it ranged between 0.0 to 31.7 per 100,000 population.

The death rates reported for March 2021 are the highest recorded since the first deaths in the country, in all age groups (**Figure 5**).

When comparing the death rates of December 2020 with the rates of March 2021, the rates doubled for the age groups of 50-59 years and ≥60 years, while it tripled in the age group of ≤39 years, and it increased fivefold for the age group of 40-49 years.

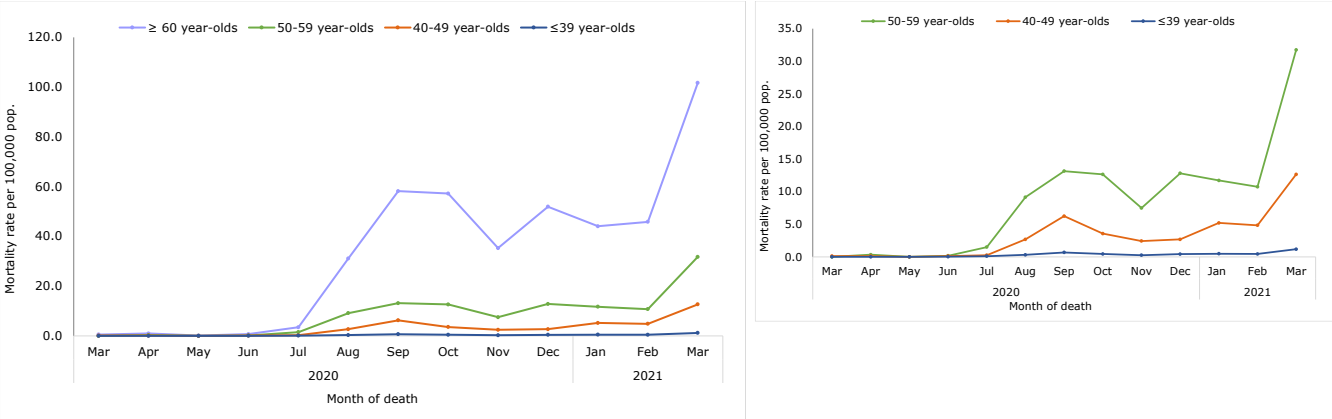
The percentage increase in deaths of each age group, in descending order, is 79% increase for the age group of 40-49 years, 64% increase for the age group of ≤39 years, 60% increase for the age group of 50-59 years, and 49% increase for the ≥60 years age group.

[17] 7 March 2020

[18] The number of deaths, according to the date of death, was obtained from the data published by the Ministry of Public Health and Social Welfare of Paraguay. Available at: https://tabsoft.co/2RTsa4t Accessed on 20 April 2021. For the populations, the projections published by the National Institute of Statistics (INE, per its acronym in Spanish) of Paraguay were used. Available at: https://bit.ly/3gunNak. Accessed 20 April 2021.

Suggested citation: Pan American Health Organization / World Health Organization. Epidemiological Update: COVID-19: Increase in hospitalizations and deaths among patients under 60 years of age, 26 April 2021, Washington, D.C.: PAHO/WHO; 2021.

Figure 5. Mortality rates of COVID-19, by age group. Paraguay, March 2020 to March 2021.



Note: The data is provisional and subject to change, as adjustments and retrospective analysis are made.

Source: Data published by the Ministry of Public Health and Social Welfare of Paraguay and analyzed by PAHO/WHO.

In **Peru**, from the confirmation of the first COVID-19 case[19] and as of 20 April 2021, there were 1,707,787 confirmed COVID-19 cases, including 57,537 deaths (3% case fatality rate).

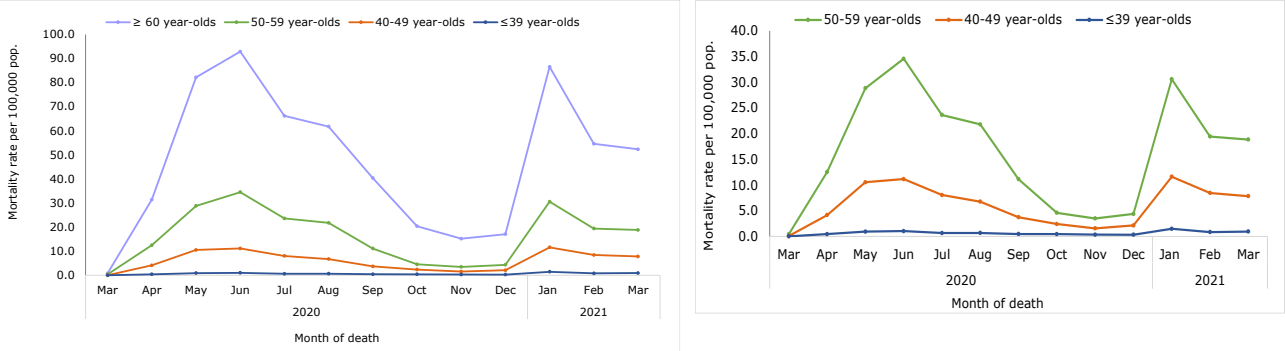
During the period between March 2020 and March 2021, the mortality rates[20] for the age group of ≥60 years people was the highest, with a range between 0.8 and 92.9 per 100,000 population (March 2020 and June 2020, respectively), while the age group of 50-59 years presented the highest rate in June 2020 with 34.6 per 100,000 population. The age group of ≤39 years and 40-49 years presented the highest mortality rates in January 2021, with 1.5 and 11.6 per 100,000 population, respectively (**Figure 6**).

In comparing the mortality rates reported in December 2020 with the rates reported in March 2021, both in the age groups of ≤39 years and ≥60 years showed tripling rates with a relative increase of 66% and 67%, respectively. Among the age groups of 40-49 years and 50-59 age groups, these rates quadrupled and increased by 73% and 77%, respectively.

[19] 6 March 2020

[20] Data on the number of deaths were obtained from data published by the Government of Peru. National Open Data Platform. Available at: https://bit.ly/3tEdy76. Accessed 21 April 2021. For population data, projections published by the United Nations Population Division, Department of Economic and Social Affairs were used. Available at https://bit.ly/3n6jFP4. Accessed 24 June 2020.

Figure 6. Mortality rates of COVID-19, by age group. Peru, March 2020 to March 2021.



Note: The data is provisional and subject to change, as adjustments and retrospective analysis are made.

Source: Data published by the Government of Peru. National Platform for open data analyzed by PAHO/WHO.

Guidance for national authorities

The Pan American Health Organization / World Health Organization (PAHO/WHO) urges Member States to prepare health services to ensure adequate management of severe cases of COVID-19 in the younger populations and plan for supplies and medicines needed to attend to an increase in cases in this population.

There are several countries in the Region that are reporting an increase in cases in the younger population, an increase that is related to greater exposure and the absence of vaccination in these groups. This increase in cases leads to a surge in hospitalizations both in ICU and non-ICU. Considering that the hospital length of stay among patients in these age groups is usually longer compared to those over 60 years of age, Member States are directed to plan how to deal with a sudden increase in the consumption of critical supplies (for example, oxygen, intubation drugs, individual protection), and equipment (infusion pumps).

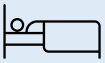
Additionally, primary health care services should be strengthened to provide care in the early phase of the disease in order to avoid clinical deterioration and reduce the need to seek care in hospitals.

PAHO/WHO recommends that Member States continue their efforts to guarantee access to diagnostic tests, as well as ensure adequate patient management at all levels of the health care system.

PAHO/WHO reiterates that vaccination campaigns against COVID-19 are not enough by themselves to prevent the transmission of SARS-CoV-2, especially in populations not eligible to be vaccinated and urges Member States to maintain the measures of public health and social distancing in accordance with their epidemiological situation.

PAHO/WHO continues to reiterate and update recommendations to support all Member States on management and protection measures for COVID-19 and reiterates the recommendations included in the PAHO/WHO Epidemiological Alerts and Updates on COVID-19 available at: https://www.paho.org/en/epidemiological-alerts-and-updates.

The following are guidance, scientific reports, and other resources published by PAHO/WHO and WHO.

Surveillance, rapid response teams, and case investigation 	**Clinical management** 
WHO resources available at: https://bit.ly/30zjmCj PAHO/WHO resources available at: https://bit.ly/36DJi3B	WHO resources available at: https://bit.ly/3li6wQB PAHO/WHO resources available at: https://bit.ly/3sadTxQ
Laboratory 	**Infection prevention and control** 
WHO resources available at: https://bit.ly/3d3TJ1g PAHO/WHO resources available at: https://bit.ly/3oD2Qen	WHO resources available at: https://bit.ly/3d2ckuV PAHO/WHO resources available at: https://bit.ly/3nwyOaN
Critical preparedness and response 	**Travel, Points of entry, and border health** 
WHO resources available at: https://bit.ly/3ljWHBT PAHO/WHO resources available at: https://bit.ly/36DJi3B	WHO resources available at: https://bit.ly/3ivDivW PAHO/WHO resources available at: https://bit.ly/36DJi3B
Schools, workplaces, & other institutions 	**Other resources**
WHO resources available at: https://bit.ly/3d66iJO PAHO/WHO resources available at: https://bit.ly/36DJi3B	WHO resources available at: https://bit.ly/33zXgRQ PAHO/WHO resources available at: https://bit.ly/36DJi3B

References

1. Ministry of Health of **Brazil**. Available at: https://bit.ly/3tKOgEa

2. Population Projections of **Brazil**. DATASUS. Available at: https://bit.ly/3ay3sgu

3. Government of **Chile**. Official COVID-19 figures. Available at: https://bit.ly/3fMQuPn

4. Population Projections of **Chile**. National Institute of Statistics. Available at: https://bit.ly/2PC0mAW

5. Department of Health Statistics and Information of the Ministry of Health of **Chile**. were Available at: https://tabsoft.co/3a99Me6,

6. Ministry of Public Health and Social Welfare of **Paraguay**. Available at: https://tabsoft.co/2RTsa4t

7. Population Projections of **Paraguay**. National Institute of Statistics. Available at: https://bit.ly/3gunNak.

8. Government of **Peru**. National Open Data Platform. Available at: https://bit.ly/3tEdy76

9. Population Projections. United Nations Population Division, Department of Economic and Social Affairs. Available at https://bit.ly/3n6jFP4. Accessed 24 June 2020.