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COVID-19 in Latin America: The implications of the first confirmed case in Brazil

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Over the past weeks the spread of the Coronavirus Disease 2019 (COVID-19), caused by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) [1], has been steady in Asia and other regions in the world. Latin America was an exception until February 25, 2020, when the Brazilian Ministry of Health, confirmed the first case.

This first case was a Brazilian man, 61 years-old, who traveled from February 9 to 20, 2020, to Lombardy, northern Italy, where a significant outbreak is ongoing. He arrived home on February 21, 2020, and was attended at the Hospital Albert Einstein in São Paulo, Brazil. At this institution, an initial real-time RT-PCR was positive for SARS-CoV-2 and then confirmed by the National Reference Laboratory at the Instituto Adolfo Lutz using the real-time RT-PCR protocol developed by the Institute of Virology at Charité in Berlin, Germany [2]. The established protocol also included now, as part of the Sao Paulo State Health Secretary, metagenomics and immunohistochemistry with PCR, as part of the response plan to COVID-19 outbreak in the city [3]. The patient presented with fever, dry cough, sore throat, and coryza. So far, as of February 27, the patient is well, with mild signs. He received standard precautionary care, and in the meantime, he is isolated at home [4]. Local health authorities are carrying out the identification and tracing of contacts at home, at the hospital, and on the flight. For now, other cases are under investigation in São Paulo, and other cities in Latin America. In addition to the São Paulo State Health Secretary, the Brazilian Society for Infectious Diseases have developed technical recommendations [4].

This is the first case of COVID-19 in the South American region with a population of over 640 million people [5] who have also experienced significant outbreaks of infections which were declared *Public Health Emergencies of International Concern* (PHIC), by the World Health Organization (WHO). So it was with Zika in 2016. The Zika outbreak also began in Brazil [6]. In the current scenario, the spread of COVID-19 to other neighboring countries is expected and is probably inevitable in the light of the arrival of suspected cases from Italy, China, and other significantly affected countries. São Paulo is the most populated city in South America, with more than 23 million people and high flight connectivity in the region (Fig. 1). Its main airport, the São Paulo-Guarulhos International Airport, is the largest in Brazil, with non-stop passenger flights scheduled to 103 destinations in 30 countries, and 52 domestic flights, connecting not only with major cities in Latin America but also with direct flights to North America, Europe, Africa and the Middle East (Dubai). There are also buses that offer a service to and from the metropolitan centers of Paraguay, Argentina, Uruguay and Bolivia. Brazil also connects with the countries of Chile, Argentina and Bolivia through some rail connections. The main seaport of Brazil is in Rio de Janeiro, where many international cruises also arrive. Thus, over the course of the next few days, a significant expansion in the region would be possible.

The healthcare systems in this region are already fragile [7]. Moreover, fragmentation and segmentation are ongoing challenges for most of these vulnerable systems. Multiple social and economic issues are ongoing and will impact the situation, including the massive exodus from Venezuela to many countries in the region. This human migration is associated with other infectious diseases, such as malaria or measles [8]. The burden that will be imposed on the region, if and when COVID-19 spreads, would be an additional challenge for the healthcare systems and economies in the region, as we faced with Zika and even the Chikungunya outbreaks [9]. For example, there is concern about the availability of intensive care units, that are necessary for at least 20–25% of patients hospitalized with COVID-19—also, the availability of specific diagnostic tests, particularly the real-time RT-PCR is a crucial challenge for early detection of COVID-19 importation and prevention of onward transmission. Even maybe in some countries, cases have been not diagnosed due to lack of availability of specific tests.

Are Latin American healthcare systems sufficiently prepared? Probably not, but in general, this is the same in other regions of the world, such as in many parts of Asia and Africa [10]. Although most countries in Latin America are trying to step up their preparedness to detect and cope with COVID-19 outbreaks, it will be essential to intensify inter-continental and intra-continental, communication and health workforce training. In the Latin American region, there is a large heterogeneity of political and social development, economic growth, and political capacities. For example, in the Caribbean subregion, countries such as Haiti have a low Human Development Index. In such areas, and Venezuela where a humanitarian crisis had occurred since

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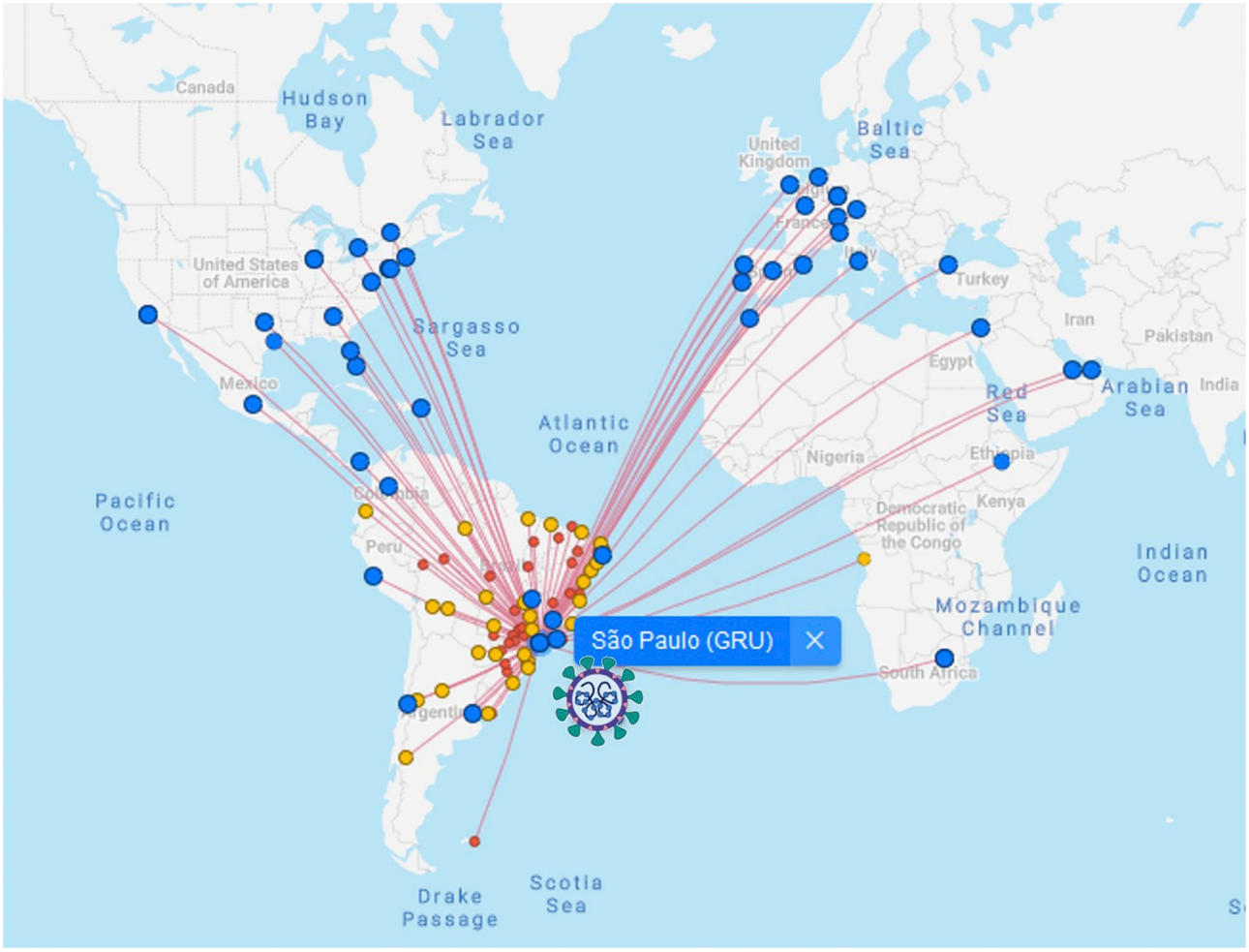

Fig. 1. Flight connections from São Paulo's main international airport, Brazil. Source: flightconnections.com.

2019 spreading measles, diphtheria, and vector-borne diseases, such as malaria, over the region [11–13], the impact of a COVID-19 outbreak will be more devastating than in the more developed economies, such as Brazil or Mexico.

Most of the countries in the region are remembering the lessons learned during SARS (2003) and pandemic influenza (2009). Protocols already developed during those crises, including laboratory and patient management, may prove useful in this new situation. Good communication strategies for preventive measures in the population, and in neighboring countries in addition to Brazil, will be essential and this response should be aligned with the recommendations of the WHO.

In Latin America, the Pan-American Health Organization (PAHO/WHO) recent epidemiological alert for measles shows that from January 1, 2019 to January 24, 2020, 20,430 confirmed cases of measles were reported, including 19 deaths, in 14 countries: Argentina, Bahamas, Brazil, Chile, Colombia, Costa Rica, Cuba, Curaçao, Mexico, Peru, Uruguay and Venezuela. Brazil contributed 88% of the total confirmed cases in the Americas [14]. In the first 4 weeks of 2020, a staggering 125,514 cases of measles were notified. The dengue incidence rate is 12.86 cases/100,000 inhabitants in the region for the ongoing year, including 27 deaths, 12,891 cases confirmed by laboratory and 498 cases classified as severe dengue (0.4%). Countries like Bolivia, Honduras, Mexico and Paraguay have reported an increase of double or triple the number of cases of dengue compared to the same period from the previous year [15]. In this complex epidemiological scenario, we are about to witness a syndemic [16] of measles, dengue, and COVID-19, among others, unfold.

The World Health Organization (WHO) has published guidelines encouraging the provision of information to health professionals and the general public. Resources, intensified surveillance, and capacity building should be urgently prioritized in countries with a moderate risk that might be ill-prepared to detect imported cases and to limit onward transmission, as has already occurred in Brazil. [For the moment of proofs correction of this Editorial –Mar. 1, 2020–, 2 cases have been confirmed in Brazil, but also new 5 confirmed cases were also reported in Mexico (2° country that reported cases), 6 in Ecuador (3°) and 1 in Dominican Republic (4°), summarizing 14 cases in Latin America].

Credit author statement

AJRM conceived the idea of the Editorial and wrote the first draft. The rest of the authors reviewed and improved the second draft. All authors approved the final version.

Author contributions

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Declaration of competing interest

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