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# Syndemic Nature of COVID-19 in Latin American and Caribbean Countries: The Challenge Ahead

Latin American and Caribbean countries (LAC) have been facing the syndemic nature of the coexistence of high prevalent non-communicable chronic diseases (NCDs) and high incidence of COVID-19 infections. The collision of COVID-19, NCDs, inequity and poverty, along with other determinants of health, influences the syndemic nature of the public health emergency in LAC. Since 1994, critical medical anthropologists began to use the term syndemic to refer to complex interactions between health and social conditions that urban poor populations faced (1). Subsequently, the term has evolved to define the synergistic interaction of two or more epidemics and the resultant excess disease burden that develops and is sustained in a community because of harmful social conditions affecting social connections (2). Therefore, the term syndemic stresses the interaction of the diseases and the influence of the exposure to health determinants and health risks, among which social conditions, such as poverty, violence, abuse of alcohol, smoking, poor access to healthy food and health services, among others, threaten the health of individuals. Consequently, the health system must prevent or control each disease and limit the interactions between diseases that can worsen health outcomes to prevent a syndemic.

*In LAC, Chronic Noncommunicable Diseases Trend Upward*. NCDs have multiple risk factors, including genetics, environmental factors, and unhealthy lifestyle choices, with physical inactivity, unhealthy diets, tobacco use, and the misuse of alcohol being among them. NCDs are chronic conditions, their course is prolonged, treatment is complex and expensive, and their acute complications cause disability and premature death (3). The most frequent NCDs in the region are overweight/obesity (60%), hypertension (22%), and diabetes (9%). Although these percentages vary between countries, the distribution is similar. Mexico has the highest prevalence of overweight/obesity (>65%); Caribbean countries have a diabetes prevalence close to 12%. The proportion of people with hypertension is up to 25% in Trinidad and Tobago (4). Consequently, NCDs are the leading causes of outpatient and hospital care. Also, these conditions cause 40% of premature deaths (before age 70) and 70% of all deaths. The trend of NCDs will continue to rise in the coming decades. For instance, between 2018 and 2040, in LAC, the number of patients with diabetes will increase from 29.6 to 48.8 million (4).

*Cancer is a Growing Problem in the LAC Region.* Between 2018 and 2040, the number of cancer cases will almost double. Countries are making slow progress to prevent it. Not all LAC countries apply the human papillomavirus vaccine to reduce cervical cancer, Screening programs for cervical and breast cancer, have not achieved optimal coverage. In Brazil, Chile, and Colombia, up to 56% of patients diagnosed with cervical cancer for the first time are already in advanced stages of the disease, indicating that women have little chance of early detection, reducing the likelihood of remission and survival (5).

*Infectious Diseases Represent an Ongoing Challenge for Health Services in LAC*. The frequency and severity of infectious diseases have decreased due to improved sanitary conditions, public health programs, better diagnostic tools and the availability of vaccines, antibiotics, deworming, and antivirals. However, low coverage of public health programs, lack of access to health care services and medicines, and substandard quality of care jeopardize the effectiveness of managing infectious diseases. Many infectious diseases continue being major causes of disability and mortality. People in vulnerable situations, such as the poor, indigenous peoples, migrants, children, the elderly, and the Lesbian, gay, bisexual, transgender, and queer (LBGTQI) community are more exposed to infectious diseases. In LAC, there are numerous prevalent infections such as acute respiratory and diarrheal diseases, tuberculosis, HIV and sexually transmitted diseases, and neglected diseases (onchocerciasis, filariasis, schistosomia-


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sis, helminthiasis, and trachoma), along with vector-borne infections (malaria, dengue), and endemic infections (influenza).

*LAC have Experienced a Heavy Toll on COVID-19 Cases*. As of April 26, 2022, LAC had reported 66.4 million cases, representing 10,513 cases per 100,000 inhabitants; this rate is below the figures reported in Europe at 23,666 per 100,000 and United States at 24,628 per 100,000. However, LAC has the highest case fatality rate (2.5%), above Africa at 2.1%, Asia at 1.0%, the United States at 1.2%, and Europe at 0.9%. Nonetheless, LAC countries showed significant differences. Peru and Mexico had the highest case fatality rates (6.0 and 5.7%, respectively), whereas the lowest has been in Barbados (0.6%) and Uruguay (0.8%).

*Health Services Should be Prepared to Provide Continuous and Comprehensive Care for Chronic and Acute Diseases.* In clinical practice, it is not possible to claim that there is a boundary between the care of patients with infectious and chronic diseases. Rather, there are interconnections. The division is artificial, and the interaction between infectious and chronic diseases is tangible. The coexistence of one or more chronic conditions exacerbates the risk of acute and chronic complications and death when the patient has an infectious disease. COVID-19 is the most recent reference; those with chronic illness are at greater risk of severe manifestations, chronic complications, and death. This clear relationship detonated that many countries prioritized entire hospitals and repurposed health personnel to care for patients with severe COVID-19. Also, infectious diseases are risk factors for developing chronic conditions. For instance, the relationship exists between human papillomavirus and cervical cancer, or Helicobacter pylori infection with peptic ulcers. Even the notion of infectious disease changes as the efficacy of treatment changes its clinical manifestations. Currently, the highly active antiretroviral therapy has transformed HIV infection from a terminal illness to a manageable chronic disease; even the taxonomy is different because the currently used term is people living with HIV (6).

*The First Two Years of the Pandemic Signaled Significant Disparities in essential Health Services Provision, COVID-19 Case Fatality Rate, Excess Mortality, and Vaccination Coverage in LAC.* From May–July 2020, the World Health Organization, and the Pan American Health Organization (PAHO) surveyed Ministries of Health on perceived disruptions to essential health services (7). Almost all countries reported disruptions to health services. Mexico, Chile, experienced a reduction in cervical and breast cancer detections, an increase in patients with decompensated diabetes and hypertension (8). The main causes of the disruptions were a combination of demand and supply factors. The redeployment of clinical staff to provide care for COVID-19 cases, the reallocation of clinics and hospitals, or intensive care services solely for COVID-19 are disruptions to supply. In terms of demand, the population stopped attending services partly because of fear of contagion, distrust, and social distancing policies.

Excess Mortality is an important indicator that measures the impact of the pandemic on COVID-19 deaths and deaths from other causes that are attributable to the public health crisis conditions. The poor health status and precarious socioeconomic conditions of the population are also contributing factors that influence excess mortality. It is worth emphasizing that not all excess deaths are causally related to COVID-19, although it shows the trends in lethality. During several months of 2020, excess mortality in Brazil, Chile, Ecuador, Mexico, and Peru was greater than 50% (9).

The Road Ahead

There are three fundamental aspects to address in the current context. First, it is relevant to build up the resilience of health systems to respond to public health emergencies while maintaining the regular provision of health services. Second, it is critical to strengthen the health workforce, since the disruption of health services was caused by the need to reallocate human resources to respond to the pandemic and third, it is critical to continue introducing digital health technology in the region.

*First, Building the Resilience of Health Systems to Respond to the Syndemic Challenges that LACs Face is Critical*. Resilience is the ability to prepare for, manage (absorb, adapt, and transform) and learn from health emergencies (10). It is relevant to rethink our understanding of the current disease patterns in public health and set the foundations for the proper response to syndemic events. The need to balance public health programs and health services to care for infectious and chronic diseases simultaneously is clear. The LAC health systems responded to the pandemic by prioritizing care for COVID-19 over essential health services. This situation brought immediate and long-term implications, including excess mortality related and not related to the COVID-19 infection and reduction in life expectancy across these countries by 2–10 years (9).

*Second, Human Resources are the Backbone of Resilient Health Systems.* During the COVID-19 pandemic, countries implemented multiple strategies to strengthen human resources for health, including recruitment of additional staff, diverting staff within institutions and across institutions and regions, expansion of roles, and task-sharing, among others (11,12). However, disruptions in essential health services during the COVID-19 pandemic in LAC showed that the planning, training, and funding of human resources for health must ensure enough and equi-

table distribution of skilled and equipped health professionals trained in both health emergencies and chronic disease prevention and treatment.

*Third, Digital Health Technologies are a Useful Tool to Improve Health Services Access, Efficiency, Accountability, and Health Systems Resilience.* During the pandemic, multiple countries have integrated digital technologies in: health services provision, data monitoring, analysis, reporting, and training of health professionals (e.g., online training, telehealth services, mobile health applications, personal digital assistant, data dashboards, artificial intelligence, and big data) (13); integration of digital health technologies in everyday practice showed potential to improve health care governance (14); health professionals' training (15); quality of care (16); patients' health literacy (17); and outcomes (18), which are important features to address syndemic nature of the COVID-19 pandemic and chronic diseases.

## Conflict of Interests

The Authors declares that there is no conflict of interest.

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