## **COVID-19: Lessons for Low and Middle Income Countries**

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## **Abstract**

The COVID-19 pandemic has exposed the frailties and capabilities of health systems in low- and middle-income countries (LMICs). LMICs are socio-economically and socio-culturally diverse and categorizing them as an entity is difficult in most contexts, however, the pandemic demonstrated very important similarities in the contexts of health infrastructure, therapeutic research, and political realities. The purpose of our study is to explore the political, cultural and economic realities of LMICs which may explain the effectiveness or otherwise of control measures, challenges with vaccine purchase and distribution and lessons that may prepare them to handle future outbreaks.

The pandemic has provided an opportunity to observe the spread of the virus in LMICs vis-a-vis government response and measures effectiveness in real time while assessing the exposed health systems and infrastructure and the global diplomatic efforts to secure vaccines. The dynamic nature of the pandemic has inevitably resulted in challenges in attempting to make specific conclusions due to the fast changes in numbers relating to infections, vaccinations and deaths. We however settled on reputable data sources and conducted detailed analyses to ensure accuracy and relevance. We explore strategies employed by governments to limit spread, effectiveness of these strategies, cultural and educational impact, economic consequences, public health communication and misinformation, research and development weaknesses, vaccine logistics.

The early days of the pandemic exacerbated shortages of lifesaving equipment such as ventilators and demonstrated the weaknesses of the health infrastructure in most LMICs. Conversely, it also exhibited the know-how possessed by health officials in many LMICs developed from their experience with infectious diseases such as Ebola and Lassa. Well into the pandemic, LMICs were largely missing from the drive to develop vaccines and therapeutics due to the lack of expertise in research and development. This dependence on wealthier countries to innovate has resulted in LMICs having the lowest vaccination rates in the world.

The lessons LMICs should learn from this pandemic have been divided broadly into improving health systems and infrastructure, greater investments in research and development, and more effective local and international political cooperation aimed at ensuring global problems do not become local catastrophes.