# COVID 19 Global Pandemic - The Seen Facts of Unseen Virus from Different Countries: A Review

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#### Abstract

The ongoing respiratory disease outbreak is known as Covid-19 is the most recent threat to global health. The Covid-19 outbreak, like the two previous coronavirus outbreaks in the past 18 years - MERS and SARS - has modelled significant encounters to the community health,

research, and medical health populations. The outburst serves as a blunt reminder of the currentcontest of emerging and re-emerging transmittable pathogens, as well as the importance of continuous observation, rapid diagnosis, and vigorous research to better recognize the biological condition of new organisms and our vulnerabilities to them, as well as improveactive counteragents. The articles were found using a combination of MeSH and free-text terms in databases such as PubMed, the Cochrane Library, and Science Direct. More than 10.5 million people have been infected with the virus around the world. Through the popular of travel routes blocked, institutes and schoolsshut, and nations imposing lockdowns, the infection has already taken over people's daily lives all over the world. The various measures taken by different countries around the world which are not commonly being discussed, in dealing with COVID-19 management are highlighted in this review article. In this article, we provide an overview of various responses from different Countries around the Worldto the COVID-19 crisis.

*Keywords*: Respiratory disease, COVID-19, pathogens, diagnosis, infections.

#### 1. Introduction

Hospitals in Wuhan, Hubei Province, China, on 31st of December, in the year 2019, released information about a mass of people suffering from pneumonia of with the origin being unknown, appealing worldwide alertness. After Two weeks, a new coronavirus strain known as 'Extreme acute respiratory syndrome coronavirus 2 (SARS-CoV-2)' was discovered. Middle East Coronavirus Respiratory Syndrome (MERS-CoV) and Extreme Acute Coronavirus Respiratory Syndrome (SARS-CoV) are two of a group of crown-like (Corona) viruses primarily belonging to the genus Beta coronavirus. After the next few weeks, it spread to 18 nations (except China), and on 30<sup>th</sup> of January, 2020, WHO confirmed the epidemic a Public Health Emergency of International Significance (PHEIC). On 11th March, it was confirmed a pandemic after spreading to 113 countries. <sup>2-4</sup>A handful of countries, nearly all of them, and over a million people were affected as of 31st of March, in the year 2020. While the mortality rate for SARScase CoV-2 is 3.44 percent, which is lesser than MERS-CoV (34.4 percent) and SARS-CoV (9.19 percent), the total number of people affected is higher. A number of policies have been implemented globally based on demographic dynamics and each country's health-care system. One of the challenges they faced was the time it takes to implement initiatives. We have discussed the key lessons learned from 12 countries in dealing with the pandemic in this article.<sup>5</sup>

#### 2. Crucial lessons leant from countries

### 2.1. Montenegro: A Balkan country with rugged mountains

Montenegro had achieved zero cases by the 24th of May 2020following the first infection cycle. However, by the 14th of June 2020 Montenegro had begun to experience a second infection outbreak. During the summer, the condition seemed to get worse. The total number of cases had reached 16,909 as of October 26th, with 270 people dying as a result of the outbreak. Montenegro had the second highest rate of cases in Europe, with 2699.69 cases per 100 000 population. <sup>8</sup>The

government has agreed to tighten up some of the current measures. In order to track compliance with measures and punish violators, competent inspection authorities at both the state and local levels were required to mobilise all available human and technical capacities. Public and private educational institutions, as well as childcare facilities, have shifted their educational work to the online learning environment. One of the guardians of a child under the age of eleven, as well as children with special educational needs, were given the benefit of paid leave. 9

# 2.2. Tanzania: An East African country with vast wilderness areas

Tanzania's earliest coronavirus case was discovered on 16<sup>th</sup> of March 2020, 509 cases were reported in the East African region on April 292020, the one day of formal data release. There were 21 deaths. Tanzania, like other countries, acted quickly to stop the Covid-19 pandemic from spreading. Then all colleges and universities were closed, and pupils were told to be at home. Second, the government issued guidelines on how to avoid disease transmission, including the use of face masks, hand washing, and hand sanitizer. Third, all public events, such as conventions and sporting events were prohibited. Congregational modes of worship in churches and mosques have been allowed to continue on the condition that religious leaders direct their adherents to follow preventative and security measures. Fourth, people who did not follow the government's guidelines, particularly hand washing and the use of hand sanitizer, were punished by their fellow citizens in some areas, particularly at bus stations, restaurants, and public markets.

#### 2.3. Iceland: The Land of Fire and Ice

Iceland's response was unique in that it transitioned to long-term research. The first COVID-19 case was stated in Iceland on 28<sup>th</sup> of February, in the year 2020. Iceland's first domestic SARS-CoV-2 transmission was detected and on March 13, officials identified the country's first cases, which could not be linked to previous travel or a known event. Iceland expanded its research on this topic from just testing people who were symptomatic to also testing people who were asymptomatic to screen for asymptomatic infections. Iceland's initiative for touch tracing <sup>12</sup> was another distinguishing feature of the country's strategy. In the country, a team of 50 contact trackers is currently working, including veteran police detectives. By enforcing vigorous and proactive communication tracing efforts before widespread community transmission could be developed, Iceland was able to focus its limited resources on a relatively small number of instances. <sup>13</sup> Despite its unique characteristics, there may be lessons to be learned from Iceland's overall approach, particularly its use of early, effective prevention mechanisms such as disease monitoring and touch tracking. Iceland made significant efforts and investments in touch tracking and checking before the first detected occurrence to isolate the already contaminated and quarantined vulnerable people. <sup>14</sup>

## 2.4. Vietnam: A Southeast Asian country with bustling cities

Vietnam, with a population of 96.2 million people as of 2019, is a Southeast Asian country. While Vietnam is one of the Southeast Asia's poorest countries, its exertions against the virus have resulted in a lower infection rate than many of its neighbors. Hundreds of expats are returning house to avoid a coronavirus pandemic sweeping Europe and US.<sup>15</sup> Thousands of people have been detained in quarantine camps in Vietnam. Vietnam followed a book approach in its quick response policy, based on its capability as the first country exterior of China to be smash by the SARS epidemic in 2003. Vietnam's mass quarantine policy went into effect on March 16, when mandatory testing and isolation measures for onsets from virus-affected areas began. Hundreds of people have been quarantined or self-isolated as a result of Vietnam's aggressive touch tracking in the early stages. Early on, public prevention efforts were launched, and they were widely spread all over the country. The government funded social distancing, selfisolation of marginalized persons, compulsory isolation of indicative people and those who test positive, focal environmental sanitization, regular hand-washing, and face-masks in all public places. In the background of the coronavirus pandemic, the Vietnam Model provides insight into compliance with the national lockout and other protective measures applied in Vietnam. Overall, government orders were followed to the letter, which contributed to the rapid containment of the Vietnam outbreak. 16-18

## 2.5. New Zealand: An island nation in the Pacific

New Zealand's first case of COVID-19 was reported on 28/02/2020. On 25<sup>th</sup> March, in the same year only, New Zealand, like India, imposed one of the world's most stringent coronavirus bans. The pandemic emaciated in early April in New Zealand, with eighty-nine new cases each day and around nine hundred and twenty-nine cases being active.<sup>19</sup> The lockdown and subsequent deferment of routine health care had unquestionably negative health consequences, though overall national weekly deaths decreased following the lockdown.To mitigate the negative economic consequences, the government has implemented an investment policy to assist industries and to supplement the wages of workers who have lost their jobs or whose jobs have been jeopardized.<sup>20</sup> New Zealand's pandemic response has taught us some valuable lessons. It was critical for quick, science-based risk management, as well as early and effective government intervention. Introducing strategies at various levels was a huge success (Border-management, community-transmission control and case-based control measures). The need for stronger public health institutions capable of properly identifying and handling emerging risks, as well as increased funding for international health organizations, are among the future lessons learned by New Zealand.<sup>21-23</sup>

#### 3. Discussion

Apart from the countries mentioned above, other countries such as Fiji, Seychelles, Papua New Guinea, Vatican City, and Mauritius have shown significant improvements in their response to the COVID-19 pandemic. Fiji declared coronavirus-free status on June 5<sup>th</sup>2020,The first COVID-19 incidents were reported in mid-March in the small island nation of 930,000 people.

The deadly virus has infected a total of 18 people on the friendly island nation. They've all come back to life. In Fiji, there has yet to be a first death due to COVID-19 infection. The nation has a 100% recovery rate. With only eleven confirmed coronavirus cases, life in the Seychelles started to return to normal in the early May, when no new positive coronavirus cases were informed. The first established coronavirus case was reported on 14/03/2020 in the Seychelles. By 6<sup>th</sup> April 2020, there had been a total of eleven positive cases. The Seychelles went into lockout on 8<sup>th</sup>April, shutting down unnecessary services and restricting all travel except for grocery shop.<sup>24</sup>The government of the Seychelles confirmed the nation COVID-19 free on May 18. The Pacific country declared itself coronavirus-free on May 4th. The outbreak resulted in 24 cases of Covid-19 but no deaths. On March 5, the first coronavirus case was reported in the Holy City. On June 6, the Vatican declared the city free of the coronavirus. The last confirmed case of COVID-19 was announced on May 16th. In total, there were 17 coronavirus cases in Vatican City, with one death. According to the Mauritius Tourism Promotion Authority, no new infections have been registered in Mauritius for twenty days in a row as of 17<sup>th</sup> May (MTPA). In the island country, there have been 332 confirmed coronavirus cases, with 322 of them surviving and 10 dying.<sup>25</sup>

In today's increasingly mobile world, handling and containing an epidemic of a novel pathogen that spreads from person to person is a daunting task. However, the governments and people of these countries were up to the challenge and were capable to contain the epidemic within their borders. These countries inspire hope in the rest of the world, demonstrating that even the most difficult situations can be overcome. A measured response to the COVID-19 emergency and a high level of coordinated action in a multicultural community of over 11 million people has shocked the entire world. Every single country is at risk of becoming the worldwideepicentre of viruses, so countries must benefit from these urgent measures by adopting prevention and control measures. The potential benefits and negative effects of each implemented approach will be evaluated, keeping in mind that each country is unique. Countries should also work to advance their systems and people in order to be better arranged for future outbreaks and to mitigate the effects when they occur.

Epidemics such as plague, smallpox, measles, cholera, influenza, and others have unquestionably occurred throughout history. However, deadly epidemics that kill millions of people are extremely rare, with only a few occurring in the last millennium. And we're currently dealing with a pathogen that strikes the perfect balance of infectiousness and virulence in one of those rare instances. The pandemic is more than a medical emergency. The government, as well as the rest of society, must respond in full. The WHO professed an international public health emergency in the January to give countries and publics, particularly those with inadequate health structures, time to prepare. However, unluckily, the virus has already taken over a lot of territory, even before we could think about it. Other countries may need to concentrate on these issues in order to avoid such high numbers.

### 4. Conclusion

To summarize, now is the time to put what we've learned on this arduous journey into practice and work toward a brighter future. We must act at the regional, national, and global levels to not only plan for the resurgence of COVID-19 but also to try to maintain the coordination that has been established throughout the crisis. We must improve our ability to share information and knowledge across multiple organizations. Most importantly, we must strive to adapt the environment of health treatment and connectivity, as well as maintain vital connections with patients and care teams, using technologies and creativity.

# 5. Ongoing Facts

A deadly surge in COVID-19 infections in diverse parts of the globe including countries like, England, United States of America and India are also rendering an enormous strain on health care facilities. This second wave of the pandemic is spreading more rapidly than the first affecting more people across age groups including children and infants..<sup>26,27</sup> Though, vaccination drive should be targeted for the population at large, face- masks, hand-sanitization and social-distancing, will still remain the gold standard for a healthy future ahead.<sup>28</sup>

# References:

- 1. Huang C., Wang Y., Li X., Ren L., Zhao J., Hu Y. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet. 2020;395(10223):497–506.
- 2. Zhou P., Yang X.L., Wang X.G., Hu B., Zhang L., Zhang W. A pneumonia outbreak associated with a new coronavirus of probable bat origin. Nature. 2020;579(7798):270–273.
- 3. Wu F., Zhao S., Yu B., Chen Y.M., Wang W., Song Z.G. A new coronavirus associated with human respiratory disease in China. Nature. 2020;579(7798):265–269.
- 4. Wu A., Peng Y., Huang B., Ding X., Wang X., Niu P. Genome composition and divergence of the novel coronavirus (2019-nCoV) originating in China. Cell Host Microbe. 2020;27(3):325-328.
- 5. Xu J., Zhao S., Teng T., Abdalla A.E., Zhu W., Xie L. Systematic comparison of two animal-to-human transmitted human coronaviruses: SARS-CoV-2 and SARS-CoV. Viruses. 2020;12(2):244.
- 6. Paraskevis D., Kostaki E.G., Magiorkinis G., Panayiotakopoulos G., Sourvinos G., Tsiodras S. Full-genome evolutionary analysis of the novel corona virus (2019-nCoV) rejects the hypothesis of emergence as a result of a recent recombination event. Infect Genet Evol. 2020;79:104212.
- 7. Liu Z., Xiao X., Wei X., Li J., Yang J., Tan H. Composition and divergence of coronavirus spike proteins and host ACE2 receptors predict potential intermediate hosts of SARS-CoV-2. J Med Virol. 2020;92(6):595–601. doi: 10.1002/jmv.25726.
- 8. Djurovic G, Muhadinovic M, Djurovic V, Bojaj, M (2018) Agenda 2030: Measuring progress in the Montenegro's national strategy for sustainable development. In: Goksel T (ed) Statistics, Growing data Sets and Growing Demand for Statistics. IntechOpen, UK.
- 9. Bokan, Vesna&Obradovic, Marija. (2020). Experience of a small country (Montenegro) in

- the COVID-19 epidemic and its impact on rehabilitation. European journal of physical and rehabilitation medicine. 56. 10.23736/S1973-9087.20.06352-2.
- 10. Coronavirus, Region Office for Africa. https://www.afro.who.int/health-topics/coronavirus-covid-19. Accessed 22 November 2020.
- 11. Tarimo, C. S., & Wu, J. (2020). The first confirmed case of COVID-19 in Tanzania: recommendations based on lesson learned from China. Tropical medicine and health, 48, 25. https://doi.org/10.1186/s41182-020-00214-x
- 12. Government of Iceland. Iceland's response: government objectives and act ions. 2020. https://www.covid.is/sub-categories/icelands-response.
- 13. D.F. Gudbjartsson, A. Helgason, H. Jonsson, O.T. Magnusson, P. Melsted, G.L. Norddahl, et al. Spread of SARS-CoV-2 in the Icelandic population: N Engl J Med (2020 Apr 14).
- 14. Statistics Iceland. Population by municipality, sex, citizenship and quarters 2020. http://px.hagstofa.is/pxen/pxweb/en/lbuar/lbuar\_mannfjoldi\_1\_yfirlit\_arsfjordungstolur/MAN10 001.px/?rxid=7470e602-f5f7-4c6b-a34a-87e713c7a4b1.
- 15. Phan L.T., Nguyen T.V., Luong Q.C., Nguyen T.V., Nguyen H.T., Le H.Q. Importation and human-to-human transmission of a novel coronavirus in Vietnam. N Engl J Med. 2020 Feb 27;382(9):872–874.
- 16. Van Nguyen H., Van Hoang M., Dao A.T.M., Nguyen H.L., Van Nguyen T. An adaptive model of health system organization and responses helped Vietnam to successfully halt the Covid-19 pandemic: what lessons can be learned from a resource-constrained country. Int J Health PlannManag. 2020 Jun 18 doi: 10.1002/hpm.3004.
- 17. Dao, ThiLoi et al. "Controlling the COVID-19 pandemic: Useful lessons from Vietnam." Travel medicine and infectious disease vol. 37 (2020): 101822. doi:10.1016/j.tmaid.2020. 101822.
- 18. Ha, BTT, Quang, LN, Mirzoev, T, Tai, NT, Thai, PQ, Dinh, PC. Combating the COVID-19 epidemic: experiences from Vietnam. Int J Environ Res Public Health. 2020;17:3125. doi:10.3390/ijerph17093125.
- 19. Tran, Thanh & Ngo, The& Nguyen, Thanh & Olson, Linus & Larsson, Mattias. (2020). COVID-19 Pandemic Control: Lessons Learned From HaiPhong City, Vietnam. Asia-Pacific.journal of public health. 1010539520956424. 10.1177/1010539520956424.
- 20. COVID-19 in NewZealand and the impact of the national response: a descriptive epidemiological study. Lancet Public Health. 2020; https://doi.org/10.1016/S2468-2667(20)30225-5
- 21.NewZealandCOVID-19Alert Levels. https://covid19.govt.nz/assets/resources/tables/COVID-19-alert-levels-summary.pdf Date accessed: October 9, 2020
- 22. Ardern, J (2020a) Major steps taken to protect New Zealanders from COVID-19 [Press release]. Available at: www.beehive.govt.nz/release/major-steps-taken-protect-new-zealanders-covid-19
- 23. Burrowes, M (2020) Coronavirus: Kiwi business leaders urge 'aggressive' solution from NZ Government. Newshub. Available at: www.newshub.co.nz/home/new-zealand/2020/03/

- coronavirus-kiwi-business-leaders-urge-aggressive-solution-from-nz-government.html (Accessed 20 November 2020).
- 24. Updated WHO advice for international traffic in relation to the outbreak of the novel coronavirus 2019-nCoV. https://www.who.int/news-room/articles-detail/updated-who-advice-for-international-traffic-in-relation-to-the-outbreak-of-the-novel-coronavirus-2019-ncov-24-jan/. Accessed 20 November 2020.
- 25. WHO. Director-General's opening remarks at the media briefing on COVID-19. https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19%2D%2D-11-march-2020. Accessed 20 November 2020.
- 26. Coronavirus disease (COVID-19) information center. https://www.unicef.org/coronavirus/covid-19
- 27. UNICEF responding to COVID-19 in India. https://www.unicef.org/coronavirus/unicefresponding-covid-19-india
- 28. Poulomi Chatterjee, Pratik Kumar Chatterjee, AbhayNirgude, Anupama N, Rashmi KS, Rakesh Roy, Vinodini NA, Shilpa N Bijoor. Unmasking the role of mask in preventing the spread of COVID 19: A whistle blower. Annals of Tropical Medicine and Public Health (Special-Issue). 2020;23(19),232-143.