

# Alarming Global Trends of Novel Coronavirus 2019 and Associated Healthcare Concerns

Mudasir Rashid Baba<sup>1</sup>, Sajad Ahmad Buch<sup>2</sup>

<sup>1</sup> Yenepoya Physiotherapy College, Yenepoya (Deemed to be University), Mangalore, Karnataka-India

<sup>2</sup> Yenepoya Dental College, Yenepoya (Deemed to be University), Mangalore, Karnataka-India

**Corresponding Author:** Sajad Ahmad Buch. Department of Oral Medicine & Radiology. Yenepoya Dental College, Yenepoya (Deemed to be University), Mangalore, Karnataka, India-575018. Email: [buchh.sajad@gmail.com](mailto:buchh.sajad@gmail.com)

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Dear Sir,

The Wuhan region in China has been at a center stage due to the spread of a novel coronavirus (2019-nCoV), causing world-wide alarm.<sup>1</sup> This novel strain of coronavirus was detected late December 2019, and since then has spread to the people of different nationalities who have either traveled back from China recently or had contact with travelers from China.<sup>2</sup> A Betacoronavirus genus lineage B, 2019-nCoV has a phylogenetic relationship with bat SARS-like coronaviruses.<sup>3</sup> The initial cases in this outbreak have occurred due to exposure to the Huanan seafood market (Wuhan).<sup>4</sup> The existing epidemiological data indicate that human-to-human transmission of 2019-nCoV is now taking place.<sup>5</sup> The 2019-nCoV is the third coronavirus which has occurred in humans in the past two decades. The other two incidences included the acute respiratory syndrome coronavirus (SARS-CoV) outbreak in 2002 and the Middle East respiratory syndrome coronavirus (MERS-CoV) outbreak in 2012. The outcomes range from no symptoms or only minor respiratory symptoms to severe, rapidly advancing pneumonia, acute respiratory distress syndrome, septic shock, or multiple organ failures eventually causing death. The only healthcare-associated death due to 2019-nCoV as of 11 February was reported from Wuhan, China. A doctor named Li Wenliang from Wuhan died on the 7th of February, after getting infected with the 2019-nCoV from an undiagnosed patient.<sup>6</sup> Li had warned his colleagues through the Chinese messaging app WeChat after a patient with pneumonia-like symptoms was reported in a local hospital. He had described the test results as resembling coronavirus. Soon after Li's message became viral, he was called in by the local Chinese police and was warned against any rumor-mongering. He was forced to sign a bond accepting his misconduct and promising not to repeat such acts. The

Chinese authorities announced the outbreak on the same day and notified the World Health Organization.<sup>7</sup> The safety of health care workers should be a priority not only to deliver uninterrupted patient care but to also make sure they do not become a source of transmission of the virus. The 2019-nCoV can transmit through a cough or respiratory droplets, body fluids or from surfaces contaminated with the virus.<sup>3</sup> Soon after its outbreak, the China National Health Commission guidelines included the 2019-nCoV associated pneumonia as a group B infectious disease. The other notable infectious viruses in this group are SARS-Cov and highly pathogenic avian influenza. The current guidelines for 2019-nCoV, however, suggest protective procedures for health care professionals, as followed for Group A infections, such as in highly infectious pathogens of cholera and plague.<sup>8</sup> The 2019-nCoV has spread to more than 20 countries now, in people with some contact with travelers from China. The virus can spread even from non-symptomatic individuals at an alarming rate, and conventional forms of protection (mouth masks) do not ensure reliable protection. One person reported to urgent care clinic in Washington DC (Snohomish County) on the 19th of January 2020 with a four-day history of cough and fever; the patient had returned from China on 15 January after visiting his family.<sup>5</sup> The patient tested positive for 2019-nCoV and was kept under treatment, and his symptoms improved by the 12th day of illness. A patient admitted in Wuhan, China for surgery infected 14 health care personnel, even before the onset of fever.<sup>9</sup> On January 22, 2020, a 65-year-old man reported to the emergency department of a hospital in Ho Chi Minh City, Vietnam, referral hospital with a low-grade fever and fatigue.<sup>10</sup> He had a fever since the 17th of January, for 4 days after he, along with his wife, had flown to Vietnam from Wuhan, China. He claimed no exposure to the Wuhan seafood market. His wife

remained healthy while traveling and had no signs of any illness as of 28 January. The couple's son had stayed with them in central Vietnam and shared one bedroom with them for 3 days from 17 January. The son, developed a fever on 20 January and later his throat swab tested positive for 2019-nCoV. His father was thought to be the source of infection, and his condition stabilized after the 23rd of January. A Shanghai resident on a business trip travelled to Munich, Germany between January, 19 and 22.<sup>11</sup> She was fine during her stay in Germany but had developed symptoms on her return flight to China, where she was confirmed with 2019-nCoV on January 26. Two of her close contacts during business meetings and another two with indirect contact in Germany later tested positive for 2019-nCoV. A 52-year-old woman reported to the emergency department in central Taiwan with fever on January 25, 2020.<sup>12</sup> She had stayed in Wuhan, China, from October 21, 2019, to January 20, 2020. A passenger on this woman's flight back to Taiwan from Wuhan on 20 January had tested positive for 2019-nCoV on 21 January. The throat swab of the woman tested positive for 2019-nCoV on 27 January. The woman met her husband on January 21, the day of her return from Wuhan. They shared a bedroom and had meals together. The husband also presented with symptoms on 25 January and later tested positive for 2019-nCoV. As of the 11th of February, the couple remained hospitalized but their vital signs were normal and were not receiving oxygen therapy. On January 28, a Thai taxi driver reported to a hospital in Bangkok with deteriorating symptoms since January, 20.<sup>13</sup> The patient was isolated and put under investigations for 2019-nCoV. His throat and nasopharyngeal swabs tested positive for 2019-nCoV. The patient reported contact with Chinese tourists who had a cough but wore mouth masks. The patient's 10, close contacts tested negative for 2019-nCoV. He was discharged on February 5, after showing signs of improvement. Reports of 2019-nCoV cases have surfaced from Iran, while Saudi Arabia has canceled visas to holy sites of Mecca and Madinah as precautionary measures. Based on all the aforementioned case descriptions, it is likely, that the virus is effectively transmitted even by subclinical cases, shedding the virus in large amounts. The virus also spreads through people who have recovered from acute illness. Therefore, effective preventive measures need to be taken by healthcare workers for their safety, in the form of N95 mouth masks, gowns and goggles, during such communicable disease outbreaks. The 2019-nCoV warrants judicious isolation measures as we are currently only in the beginning stage of understanding its spread and its infectious nature.

UPDATE: During the review process of this manuscript:

The Director-General of the World Health Organization (WHO) has declared 2019-nCoV as a pandemic, with 118598 cases reported worldwide by more than 100 countries as of

March 11, 2019.<sup>14</sup> Since then, with an unprecedented increase in numbers, WHO on 6 July, 11:01 am CEST, reported 11,301,850 confirmed cases, and 531,806 deaths globally.

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