

## EDITORIAL


### Zoonoses, and the wave of the COVID-19 pandemic

#### Zoonosis, dan Gelombang Pandemi COVID-19

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#### ABSTRACT

Zoonoses are a group of diseases that can be transmitted to humans by non-human vertebrate animals. The source of zoonoses is a large number of domesticated and wild animals. Causes of zoonoses include viruses, bacteria, parasites, and fungi. Initially, it was stated that COVID-19 was caused by the novel coronavirus 2019 (nCoV-2019), then WHO stated that the name that caused COVID-19 was severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Although COVID-19 caused by SARS-CoV-2 has been classified as a zoonotic disease, no animal reservoir has been found, so the classification is premature. The proposed term for COVID-19 is classified as an “emerging infectious disease (EID) of probable animal origin.” Transmission of COVID-19 is exclusively in the form of human-human transmission, so it is not in accordance with the zoonotic definition of WHO.

**Keywords:** Zoonoses, COVID-19, SARS-CoV-2, WHO

#### ABSTRAK

Zoonosis merupakan kelompok penyakit yang dapat ditularkan ke manusia oleh hewan vertebrata non-manusia. Sumber zoonosis yaitu sejumlah besar hewan peliharaan maupun hewan liar. Penyebab zoonosis meliputi virus, bakteri, parasit, dan jamur. Pada awalnya dinyatakan bahwa COVID-19 disebabkan oleh novel coronavirus 2019 (nCoV-2019), selanjutnya WHO menyatakan bahwa nama penyebab COVID-19 yaitu severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Meskipun COVID-19 yang disebabkan oleh SARS-CoV-2 telah diklasifikasikan sebagai penyakit zoonosis, tetapi tidak ada reservoir hewan yang telah ditemukan, sehingga klasifikasi tersebut premature. Istilah yang diusulkan untuk COVID-19 diklasifikasikan sebagai “emerging infectious disease (EID) of probable animal origin.” Penularan COVID-19 secara eksklusif berupa human-human transmission, sehingga tidak sesuai dengan definisi zoonosis dari WHO.

**Kata Kunci:** Zoonosis, COVID-19, SARS-CoV-2, WHO.

Zoonoses are a group of diseases that can be transmitted to humans from non-human vertebrate animals, including animals that belong to the class/class of fish (Pisces), amphibians (Amphibia), reptiles (Reptilia), birds (Aves), and mammals (Mammalia). The source of zoonoses is a large number of domesticated and wild animals. Causes of zoonoses include viruses, bacteria,

parasites, and fungi. Viruses that cause zoonoses, for example, the H5N1 virus, which causes bird flu and is highly pathogenic. Bacteria that cause zoonoses, such as Salmonella. Zoonoses due to Salmonella can occur due to contact with amphibians, reptiles, birds and mammals. In addition, pet food and other pet-related environmental factors can also be sources of Salmonella. Another example of bacteria that causes zoonoses is Escherichia coli. For example, E. coli O157:H7 has caused outbreaks associated with dairy farming.<sup>1</sup> One of the parasites that cause zoonoses is protozoa, namely the Cryptosporidium parvum, Giardia enterica, and Toxoplasma gondii. Currently, all three protozoa genera are associated with microplastics.<sup>2</sup> Fungi that are very well known as zoonotic causes are Microsporium canis, Trichophyton verrucosum, Arthroderma vanbreuseghemii, and Arthroderma benhamiae. The fungus causes dermatophytosis.<sup>3</sup>

Until now, we are still affected by the Coronavirus disease (COVID-19) pandemic COVID-19 which has been stated that the coronavirus is the cause.<sup>4</sup> Initially, it was stated that COVID-19 was caused by the novel coronavirus 2019 (nCoV-2019)<sup>5</sup>, then WHO stated that the name that causes COVID-19 is severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).<sup>6</sup> WHO has defined that zoonoses are infections that are transmitted naturally from vertebrate animals to humans. Moreover, the COVID-19 pandemic caused by SARS-CoV-2 has also been designated a zoonotic disease.<sup>7,8</sup> Although COVID-19 caused by SARS-CoV-2 has been classified as a zoonotic disease, no animal reservoir has been identified. Found, so the classification needs to be revised. The proposed term for COVID-19 is classified as an “emerging infectious disease (EID) of probable animal origin.” The reason is that more than 40 million COVID-19 infections in humans are reported to be transmitted exclusively in human-human transmission, so it does not comply with the definition of zoonoses by WHO.<sup>9</sup>

At the start of the pandemic, namely in 2019, it was reported that 33 out of 585 swab samples collected tested positive for COVID-19.<sup>10</sup> Furthermore, it was reported that on 30 January 2020, it was declared a public health emergency because the number of deaths due to COVID-19 was 171. The emergency situation worsened because the number of deaths increased to 1.813.188.<sup>11</sup> The emergency during the COVID-19 pandemic was also caused by a mutation of SARS-CoV-2 which produced a new variant.<sup>11,12</sup> This variant resulted in new waves of pandemics, and every time a SARS-CoV variant appeared With the new CoV-2, the number of confirmed COVID-19 cases increased rapidly.<sup>11</sup>

Variants (due to mutations) of SARS-CoV-2 during the pandemic include alpha, beta, delta, gamma, and omicron variants. The alpha variant (B.1.1.7) appeared in September 2020 in the UK and then appeared in several countries, including the United States, in December 2020. The beta variant (B.1.351) appeared in May 2020 in South Africa. The delta variant (B.1.617.2) appeared in October 2020 in India, while the gamma (P1) variant was in November 2020 in Brazil. The result of the latest mutation of SARS-CoV-2 is Omicron. Omicron variants include BA. 4.6., BJ. 1\*\*\*\*, B.1.1.529, BA 5\*\*, XBB\$, BA. 2.3.20\$. A variant of omicron BA. 4.6. which was first detected on 20 July 2020 during the Omicron BA variant. 2.3.20\$ detected on 15 August 2022. In more detail, the alpha (B.1.1.7) and beta (B.1.351) variants were declared as variants of concern on 18 December 2020, while the gamma (P1), delta ( B.1.617.2), and Omicron (B.1.1.529) were declared as variants of concern on 11 January 2021, 11 May 2021 and 26 November 2021, respectively.<sup>13</sup>

Due to the emergence of variants of SARS-CoV-2 and based on the WHO report on the number of deaths from COVID-19, we can show that there were five peaks of the COVID-19 wave from the beginning of the pandemic to the present. The peak of wave I of COVID-19 occurred on 11 January 2021 with a total of 4.954.911 confirmed cases, and the peak in the number of deaths occurred on 18 January 2021 with 101.092. The peak of wave II of COVID-19 occurred on 11 January 2021 with a total of 4.954.911 confirmed cases, and the peak in the number of deaths occurred on 18 January 2021 with 101.092. The peak of the COVID-19 III wave occurred on January 19 2021, with a total of 5.725.857 confirmed cases, and the peak in the number of deaths occurred on 26 April 2021, with 96.341. The peak of wave IV of COVID-19 occurred on 16 August 2021 with a total of 4.570.684 confirmed cases, and the peak in the number of deaths occurred on 16 August 2021 with 68.926. The peak of the COVID-19 V wave occurred on 17 January 2022, with 23.789.147 confirmed cases, and the peak number of deaths occurred on 18 January 2021, with 75.693. The peak of the COVID-19 VI wave occurred on 18 July 2022, with a total of 7.269.453 confirmed cases, and the peak number of deaths occurred on 8 August 2022 with 18.370. We need to note that in Indonesia, the peak of the COVID-19 wave occurred on 12 July 2021 with a total of 350.273 confirmed cases, and the peak in the number of deaths occurred on 26 July 2021 with 12.144. The peak of the next wave of COVID-19 occurred on 14 February 2022 with a total of 389.727 confirmed cases, and the peak in the number of deaths occurred on 28 February 2022 with 2.099 cases.<sup>11</sup>

Based on the description of the COVID-19 pandemic wave above, it is likely that the COVID-19 pandemic will end soon, even though we need to be aware of the emergence of a new variant of SARS-CoV-2 after the Omicron variant. Therefore, stay alert to SARS-CoV-2<sup>14-16</sup> infection, live a healthy life, and maintain health protocols to avoid COVID-19.<sup>17-19</sup>

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