

COVID-19 Outbreak in Kazakhstan: Current Status and Challenges

Bakhytbek Zhalmagambetov^{1*}, Meruyert Madikenova¹, Saule Paizullayeva², Anara Abbay¹, Abduzhappar Gaipov¹

¹Department of Medicine, Nazarbayev University School of Medicine, Nur-Sultan, Kazakhstan;

²Project Management Unit, Social Health Insurance Project, MOH, Nur-Sultan, Kazakhstan



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*Correspondence: Bakhytbek Zhalmagambetov, MD.
Internal Medicine Resident, Department of Medicine,
Nazarbayev University School of Medicine, Kerey and
Zhanibek Khans Street 5/1, 010000, Nur-Sultan city,
Kazakhstan

Novel coronavirus disease (COVID-19) which first emerged in Wuhan, China in late December 2019 rapidly became pandemic by mid-March 2020, affecting over 200 countries, with irreversible impact to the healthcare system and worldwide economy [1,2]. To date, more than 1.2M people have been confirmed as infected with SARS-CoV-2 and more than 60K died. Higher incidence of cases and mortality reported in Europe (Italy, Spain, France, Germany), USA, China, Iran, and the UK [2]. Despite geographical proximity to China and evolving international relations, Kazakhstan is among the countries less affected by COVID-19. Nonetheless, as of April 4th, 2020, there are 531 confirmed cases with 36 recoveries and 5 fatalities in Kazakhstan due to COVID-19 (Figure 1 and Figure 2) [3]. In the current editorial, we provided a brief information about the current status of COVID-19 outbreak and challenges in Kazakhstan.

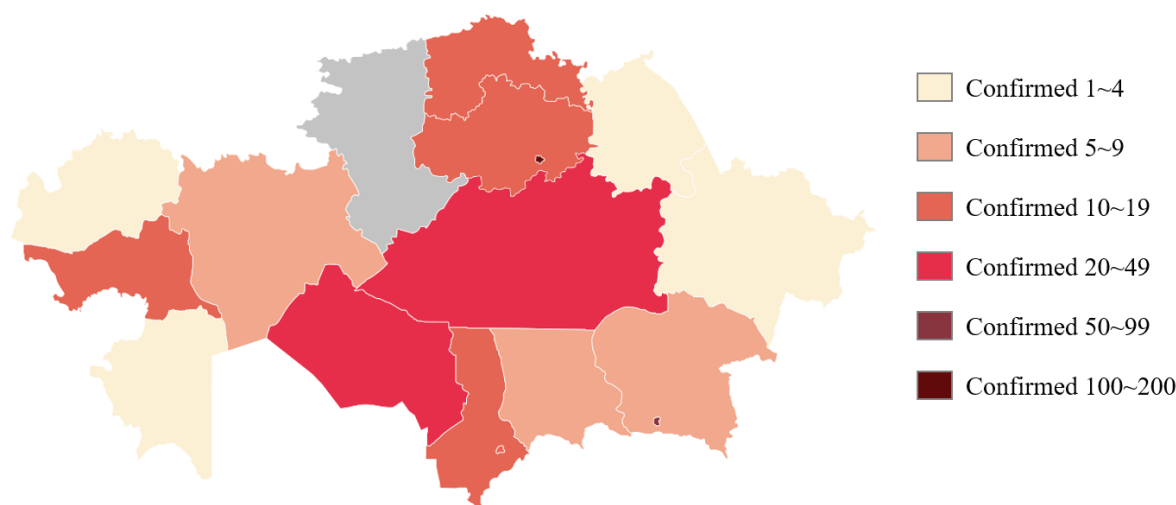
COVID-19 is a respiratory infection caused by novel human coronavirus (SARS-CoV-2) which can spread from person to person through respiratory droplets produced by coughing or sneezing as well as direct contact. It is believed that SARS-CoV-2 persists approximately 3 hours in the air, 4 hours on copper, up to 24 hours on cardboard surfaces. The longest survival reported on plastic and stainless-steel surfaces, accounting for up to 72 hours [4,5]. The mean incubation period for COVID-19 defined as 14 days, with a median duration of 4-5 days from exposure to symptoms onset [6].

The most common symptoms of novel COVID-19 are fever, followed by cough, fatigue, sputum production, shortness of breath, myalgia and arthralgias [6]. The most common patterns on CT imaging are ground-glass opacities and bilateral shadowing; however, most of the patients with non-severe disease may have normal chest CT [7,8]. The most common laboratory findings in severely ill patients can be lymphocytopenia, elevated levels of C-reactive protein, thrombocytopenia, and leukopenia. Among the hospitalized patients, 5% may require treatment in ICU and 2.3% of patients may need invasive mechanical ventilation, although number of severe cases requiring ICU depends on

several factors such as patients age, comorbidities, immune status and other hospital/healthcare related factors [6,7].

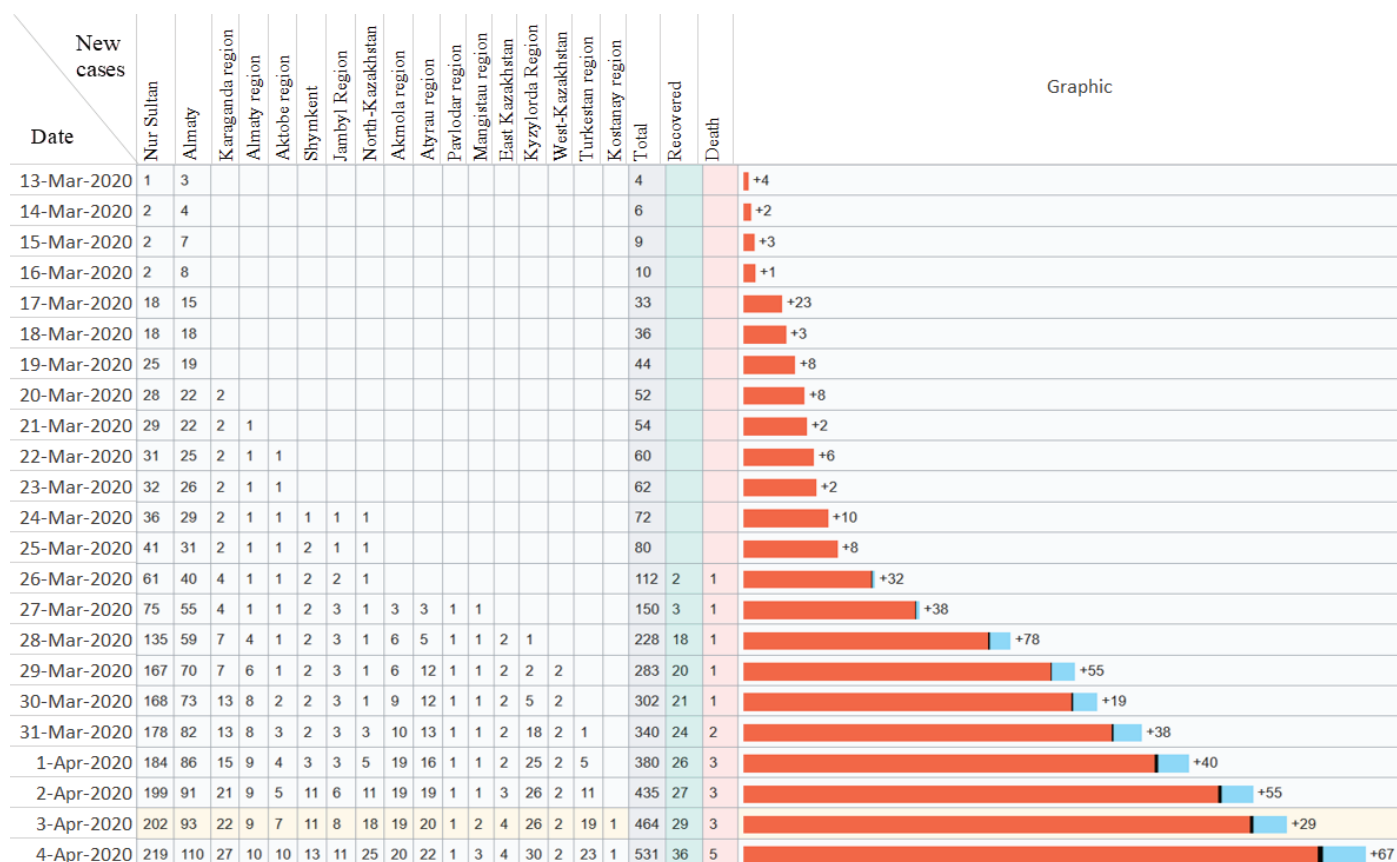
Currently there is no effective vaccine or specific antiviral treatment for COVID-19; however, several drugs and vaccines being tested for their potential effectivity against the COVID-19 disease [9,10]. The treatment approach in non-severe cases consists of symptomatic management, including IV infusions, antibiotics. Whereas in severe cases, additional intensive care management with supplemental oxygen therapy, combination of antimicrobials with antivirals, corticosteroids, and supportive ICU care (including extracorporeal membrane oxygenation, cardiotropic and multiorgan support) may be needed [11-14].

There are numerous cases around the world are still emerging, including in Europe (Italy, Spain, France, Germany), USA, China, Iran, and the UK [2], and new cases are exponentially spreading both in geographic and quantitative terms including in Kazakhstan. The first confirmed case was detected in March 12, 2020 in Almaty city [3]. To date (Figure 1 & Figure 2), as of April 4, 2020, there are 531 confirmed cases in Kazakhstan [3]. Relatively low numbers of COVID-19 cases in Kazakhstan probably due to implemented strict quarantine regime by declaring the state emergency and taking the corresponding actions in the entire country. Starting March 16, 2020 all educational organizations (schools, colleges, universities, etc.) were transitioned to online learning platform. The government had taken quarantine actions in all regions and locked-down the major cities such as Almaty, Nur-Sultan and Shymkent effective March 22, 2020. Nationwide, all hospitals compelled to admit infected patients and contacted subjects regionally, as well as opening extra beds and expanding their capacities to efficiently handle the epidemic situation. Treatment protocols were developed based on international experience and guidelines. The government imposed strong travel restrictions to the cities and regions: all air and ground transportations cancelled, including restraints on entering and exiting the major cities, all citizens mandated to be self-quarantined and stay at home.



The map was adopted from Wikimedia (https://ru.wikipedia.org/wiki/Распространение_COVID-19_в_Казахстане), Information source: <https://www.coronavirus2020.kz/ru> [3]. The grey areas demonstrate no reported cases. Red shades represent the number of confirmed COVID-19 cases.

Figure 1 - Map of confirmed cases of COVID-19 in administrative divisions of Kazakhstan. The cities Nur-Sultan, Almaty and Shymkent are represented in separate areas [3].



The graphic was adopted from Wikimedia (https://ru.wikipedia.org/wiki/Распространение_COVID-19_в_Казахстане), Information source: <https://www.coronavirus2020.kz/ru> [3].

Figure 2 - The Overall graphic representation of new cases, number of recovered cases and death in Kazakhstan by regions and major cities [3].

In conclusion, the quarantine regime's importance cannot be underestimated and should be strictly regulated and obeyed. To date, the COVID-19 case fatality rate in Kazakhstan is about 0,8%, which is relatively low. It could be the result of

positive impact of the pre-emptive actions taken by Kazakhstan government, leading to better control the COVID-19 outbreak in the country.

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