

The epidemiological analysis of COVID-19 cases in Kelantan state from 2020-2023

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ABSTRACT

Introduction: COVID-19 is a novel virus, first detected in Wuhan, China on 31st December 2019. The first case in Malaysia and Kelantan was detected on 25th January 2020 and 13th March 2020 respectively. Since then, it has spread and become one of the commonest diseases with various outcomes, from recovered to death especially among elderly and persons with comorbidities. The COVID-19 pandemic continues to pose significant challenges to public health worldwide. This study aims to analyse the trends, patterns, and characteristics of COVID-19 cases in Kelantan and to gain insights into the local epidemiology of the disease. **Materials and Methods:** A cross-sectional study was conducted, utilizing secondary data collected from Kelantan COVID-19 Cases Registry and e-COVID system. The study period encompassed the onset of the pandemic until the most recent available data (Epidemiological week 22,2023). Data on COVID-19 cases, including demographic information, clinical characteristics, testing outcomes, and temporal trends, were systematically analysed. Data entry and descriptive analysis was performed using Microsoft Excel. Confirmed case for Covid-19 was defined with positive RT-PCR or RTK Ag results. **Results:** The total number of cases of COVID-19 was 262,546 cases. The number of cases and Incidence rate by years were 758 cases (IR 38.68 /100,000 pop) in 2020, 168,285 cases (IR: 8,421.83) in 2021, 90,797cases (IR: 4,458.04) in 2022 and 2706 cases (IR:132.86) in 2023 until Epid week 22. Majority of the cases were from Kota Bharu (101,257 cases), Pasir Mas (30,401 cases) and Tumpat (23,735 cases), meanwhile the highest incidence rate IR recorded at Kota Bharu (IR:9,588.14) in 2021 and lowest at Bachok (IR: 15.37) in 2020. Mean age was 32.01(SD 20.29) years, ranging from 16 days to 109 years. Female [140,478 cases (53.5 %)] had higher number cases compared to male [122,067(46.5%)]. The three age groups with highest cases were 18-29 [58,864(21.28%)], 30-39 [44,551(16.97%)] and 40-49[29,696(11.31%)]. Out of 262,522 cases, 258,216 (98.36%) were Malaysia nationality and the three highest cases among Malaysian were Malay race [250,526(97.02%)], followed by Chinese [5,080(1.97%)] and Aboriginal Peoples [1,056(0.41%)]. Among 230,544 cases, 147,661 cases (64.05%) were vaccinated, and 82,883 cases (35.95%) were unvaccinated. Most cases were mild and asymptomatic cases [220,377 cases (97.5%)]. The total number of deaths was 1,425 cases with a case fatality rate of 0.54%. **Conclusion:** This study provides valuable insights into the patterns and characteristics of COVID-19 cases in Kelantan. Majority of cases occurred in the year 2021, in Kota Bharu district, Malay race predominant, with mild presentation aged between 18-29 years old. The CFR was 0.54%. Further research is warranted to assess the long-term impacts of the disease, evaluate the effectiveness of control measures, and monitor emerging variants.