

The ten-year trend and geographic analysis of the incidence of dengue in Taiwan with the aspect of post-COVID era, 2014-2023

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Background: Dengue is the most rapidly increased arthropod-borne disease in the past few decades. Taiwan covers the diversity of tropical, subtropical, urban, and rural areas. Analysis of longitudinal trends provides an insight regarding preventive and control strategies.

Methods: We extracted the data on dengue since 2014 to 2023 from statistics databases of the Taiwan Centers for Disease Control, Department of Statistics, and Central Weather Administration. The incidence rate of dengue was analyzed by age, sex, administrative areas, and indigenous versus imported. The weather factors were also analyzed.

Results: Within the ten-year period, national incidence rate of dengue was less than 4 per 100,000 population between 2016 to 2022. However, incidence rates during outbreaks were as high as 67, 186, and 114 per 100,000 population in 2014, 2015, and 2023, respectively. During the outbreaks, incidence rate in people aged 60-69 was the highest during 2014 and that in people aged more than 70 was the highest in 2015 and 2023. The tropical region of Taiwan has the highest incidence rate. Comparing the two outbreaks apart in 2015 and 2023, Yunlin County, which is the first county northern to the Tropic of Cancer, has a surged of incidence rate from 4 to 100 per 100,000 population. Interestingly, no indigenous case was observed in 2021, which was the year with the longest lockdowns in Taiwan.

Conclusion: Taiwan requires more strategies targeting older age groups and tropical regions to prevent dengue. Furthermore, subtropical administrative areas should gain experiences from tropical regions regarding preventive strategies.