**Additional information**

**Additional File 1.** Changes in the average yearly incidences (per 100,000) of scarlet fever during the three stages in Chongqing.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Disease | Pre-upsurge period vs. post-upsurge period | | | | Post-upsurge period vs. dynamic zero-COVID-19 period | | | | Pre-upsurge period vs. dynamic zero-COVID-19 period | | | |
|  | 2005–2014 | 2015–2019 | Change (%) | P value | 2015–2019 | 2020–2022 | Change (%) | P value | 2005–2014 | 2020–2022 | Change (%) | P value |
| Scarlet fever | 1.2163 | 2.5122 | 106.54 | < 0.001 | 2.5122 | 1.6947 | -32.54 | < 0.001 | 1.2163 | 1.6947 | 39.33 | < 0.001 |

Notes: changes = (x1 − x2)/x2 × 100%; x1, x2: average yearly incidences during the three stages; the p value was computed through a two-proportion Z-test.

**Additional File 2.** Moran’s I of the global spatial autocorrelation analysis for scarlet fever in Chongqing during the study period

|  |  |  |  |
| --- | --- | --- | --- |
| Period | Moran’s I | Z-score | P value |
| Pre-upsurge period | 0.4858 | 4.9566 | 0.0001\* |
| Post-upsurge period | 0.2410 | 0.0094 | 0.0056\* |
| Dynamic zero-COVID-19 period | -0.0011 | 0.2562 | 0.7978 |

Notes: \* indicates that the p value is statistically significant.

**Additional File 3.** Changes in the yearly incidences (per 100,000) of scarlet fever between the observed and predicted values from 2020 to 2022.

|  |  |  |  |
| --- | --- | --- | --- |
| Year | 2020 | 2021 | 2022 |
| Actual incidence | 0.8538 | 1.8400 | 2.3903 |
| Predicted incidence | 2.7205 | 2.4751 | 2.6735 |
| Changes (%) | -68.61 | -25.66 | -10.59 |
| P value | < 0.001 | < 0.001 | < 0.001 |

Notes: changes = (x1 − x2)/x2 × 100%; x1: average yearly incidence (actual), x2: average yearly incidence (predicted); the p value was computed through a two-proportion Z-test.