Mycoplasma pneumoniae: re-emergence and beyond

The re-emergence of *Mycoplasma pneumoniae* in late 2023 placed a considerable burden on health-care systems and raised concerns regarding the severity of pneumonia outbreaks.[1] The European Society of Clinical Microbiology and Infectious Diseases Study Group for Mycoplasma and Chlamydia Infections (ESGMAC) *Mycoplasma pneumoniae* surveillance (MAPS) study[2] was able to attribute these outbreaks to *M pneumoniae* and found no statistically significant global increase in the proportion of severe outcomes compared with that of pre-pandemic epidemics.[2,3]

In this Correspondence we examine the continued epidemiological course of the re-emergence of *M pneumoniae* from April 1, 2024, to March 31, 2025—the fifth year following the initial implementation of non-pharmaceutical interventions for COVID-19. The testing practices and site-level characteristics of participating laboratories are detailed in the appendix (pp 8–11). In this study, we focused on direct detection methods owing to the previously reported limitations of serology.[2]

The global dataset comprised 68 sites across 32 countries, distributed among the UN regions: Europe (18 countries, 44 sites, and 667 370 tests), Asia (eight countries, 16 sites, and 91 589 tests), the Americas (four countries, six sites, and 49 649 tests), and Oceania (two countries, two sites, and 29 369 tests). *M pneumoniae* detection was performed using PCR at 67 sites and culture at one site. The mean PCR detection rates were 12·00% (SD 13·80) in Europe, 31·48% (SD 26·67) in Asia, 5·48% (SD 2·62) in the Americas, and 4·81% (SD 4·83) in Oceania.

The epidemic curve of the re-emergence is presented in the figure. During the study period from April 1, 2024, to March 31, 2025, the re-emergence peaked in 23 (71·88%) participating countries (figure; appendix pp 12–14). A bimodal epidemic curve was observed in eight (25·00%) countries: Switzerland, Denmark, Italy, Slovenia, Israel, China, South Korea, and Canada. Among these, six countries reported increased detection rates during the second peak (figure).

Macrolide-resistant *M pneumoniae* (MR*Mp*) rates were reported by 17 (25·00%) sites, including five national surveillance programmes or national reference laboratories (appendix pp 12–14). Among sites that conducted non-clinically indicated MR*Mp* testing, the mean MR*Mp* rates during the study period were 3·02% (SD 2·97) in Europe (France, Belgium, England, Wales, and Italy), 60·90% (SD 21·12) in Asia (China, South Korea, Japan, Taiwan, and Afghanistan), and 36·46% (SD 36·82) in the Americas (USA and Cuba). Compared with the first year of the re-emergence (April 1, 2023–March 31, 2024), MR*Mp* rates in the second year (April 1, 2024–March 31, 2025) significantly increased in Denmark and Slovenia (both of which reported clinically indicated MR*Mp* testing) and in Taiwan and Cuba, while significantly decreasing in China and Afghanistan.

These data highlight the prominent global pattern of the *M pneumoniae* re-emergence. Detection numbers and rates continued to increase in most participating countries during the second year of the re-emergence, with some countries showing a bimodal epidemic curve.

Owing to the high number of infections, a longer interval will likely precede the occurrence of future epidemics.[4] Changes in MR*Mp* rates should be interpreted with caution, as they could be attributed to insufficient case numbers during the initial phase of re-emergence—potentially rendering those data non-representative—along with evolving testing strategies, differences in patient populations, or variations in sample inclusion criteria between periods, rather than a true change in MR*Mp* rates. Nevertheless, while some regions have shown that the re-emergence is driven by local strains,[5] the findings of the present study highlight the need for continued global surveillance.

We declare no competing interests. PMMS and MLB conceptualised the study. All ESGMAC MAPS study group members (authors) and the ESGMAC MAPS study group collaborators contributed to the acquisition of data. PMMS, SS, EO, and ER managed the database. PMMS, SS, ER, and X-SZ analysed the data. PMMS and MLB contributed to data interpretation. PMMS wrote a first draft of the manuscript, which was first commented on by MLB and then by all other authors. All authors read and approved the final manuscript. They had full access to and verified all the data in the study and had final responsibility for the decision to submit for publication. All data are aggregated and anonymised and can be provided upon request to the corresponding author. We are grateful to all those who helped with the study.

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See Online for appendix

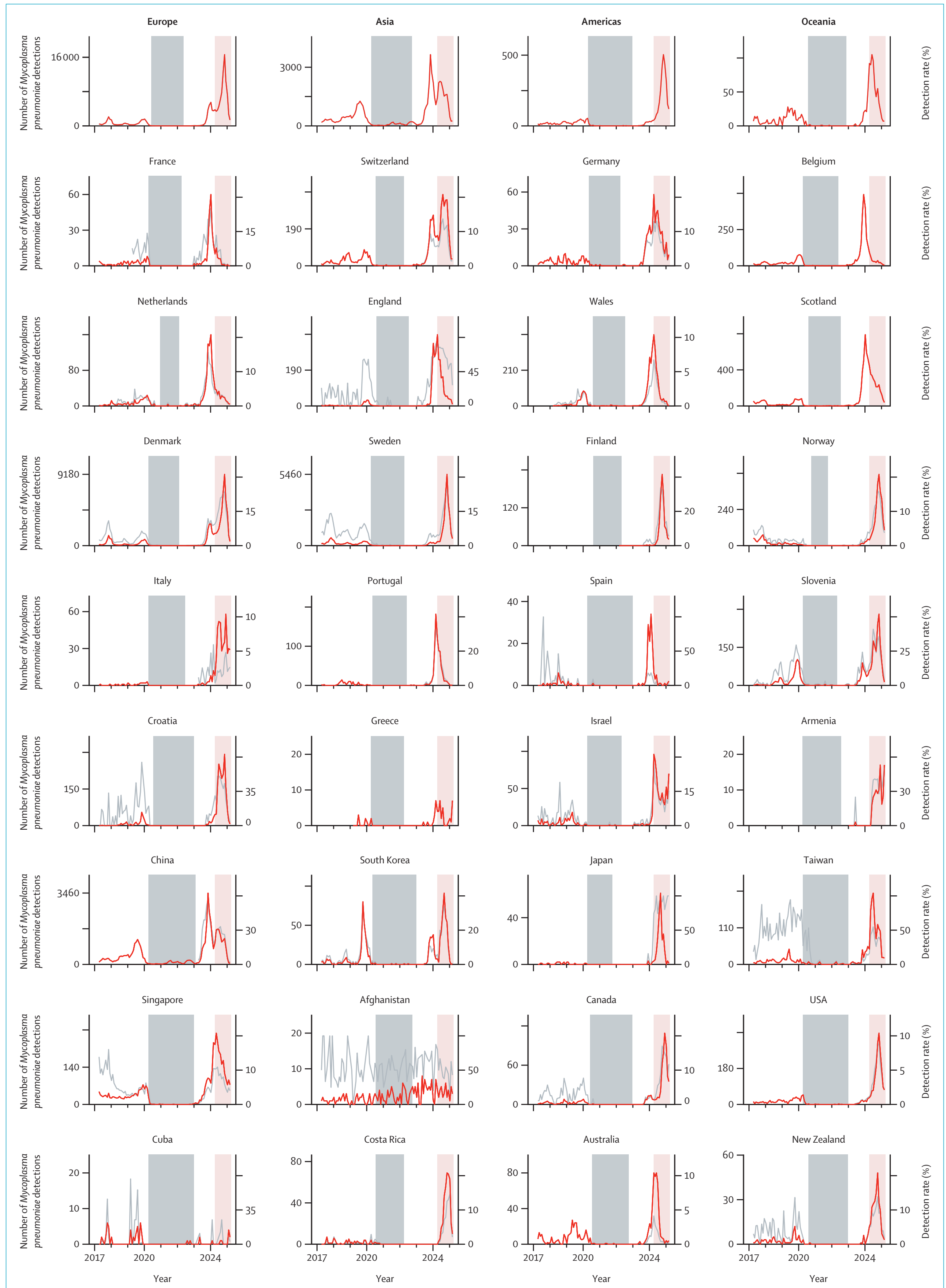

***Figure:* Global *Mycoplasma pneumoniae* detections using PCR before, during, and after COVID-19 pandemic restrictions, 2017–25**

This figure presents updated data on the re-emergence and subsequent period from April 1, 2024, to March 31, 2025 (light red background). Data from April 1, 2017, to March 31, 2024 might differ from previously published data,[2] owing to updates in participating sites and database adjustments. Absolute detection numbers (primary y-axis; red lines) and detection rates (secondary y-axis; grey lines) are shown. The secondary y-axis includes only data from national surveillance systems that reported total test numbers or only periods with complete test counts when multiple sites were included per country. The grey background indicates the periods of non-pharmaceutical interventions against COVID-19, as defined previously.[2] As detection numbers and rates varied widely across different countries, the y-axis scaling varies between panels.

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