

Tuberculosis Notification and Incidence: Republic of Korea, 2022

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Tuberculosis is an important notifiable infectious disease in the Republic of Korea and a global health concern. Since 2000, Korea has been reporting tuberculosis to the Korean national tuberculosis surveillance system, publishing annual reports on the notified tuberculosis on World Tuberculosis Day, and announcing the previous year's tuberculosis notification status¹. The World Health Organization (WHO) also annually assesses the global tuberculosis situation and publishes the Global Tuberculosis Report. It is important to understand trends of changes of tuberculosis burden to aid policymakers in planning, implementing, and evaluating the national tuberculosis control program. Herein, we analyzed the tuberculosis notification and incidence in Korea based on Korea's tuberculosis notification reports and the WHO's Global Tuberculosis Report.

In 2022, the total number of tuberculosis cases in Korea was 20,383 (39.8 per 100,000 population), which decreased by 11.0% compared to 2021 (22,904 cases, 44.6 per 100,000 population)². The number of new tuberculosis cases also decreased, reaching 16,264 (31.7 per 100,000 population). This represents a 58.9% decrease compared to 2011. The notification rate among males (37.5 per 100,000 population) was 1.4 times higher than among females (26.0 per 100,000 population). Among the new tuberculosis cases, individuals aged 65 years and above accounted for 9,069 (100.6 per 100,000 population), comprising more than half (55.8%) and indicating a growing proportion annually. The notification rate of new tuberculosis cases among medical aid beneficiaries in 2022 was 99.7 per 100,000 population, which is 3.5 times higher than among health insurance subscribers (28.3 per 100,000 population). Foreign nationals accounted for 5.3% (1,072 cases) of the total tuberculosis cases. There were 560 individuals (2.7%) had multidrug/rifampicin-resistant tuberculosis.

The coronavirus disease 2019 (COVID-19) pandemic has disrupted tuberculosis care and prevention around the world³. In 2022, there was a major global recovery in the number of people diagnosed with tuberculosis and treated. The estimated global tuberculosis incidence rate was 133 cases per 100,000 population per year and global tuberculosis cases reached an estimated 10.6 million, increasing from 10.3 million in 2021 and 10.0 million in 2020⁴. The upward trend may revert to a pre-pandemic decline by 2023 or 2024. Approximately 7.5 million people were newly diagnosed with tuberculosis in 2022, potentially including delayed cases due to COVID-19-related disruptions. The gap between estimated incident cases and reported diagnosed cases narrowed to about 3.1 million in 2022, down from 4 million in 2020 and 2021, returning to 2019 levels. Globally, tuberculosis caused an estimated 1.30 million deaths in 2022. Colombia had the highest tuberculosis incidence rate among Organization for Economic Co-operation and Development

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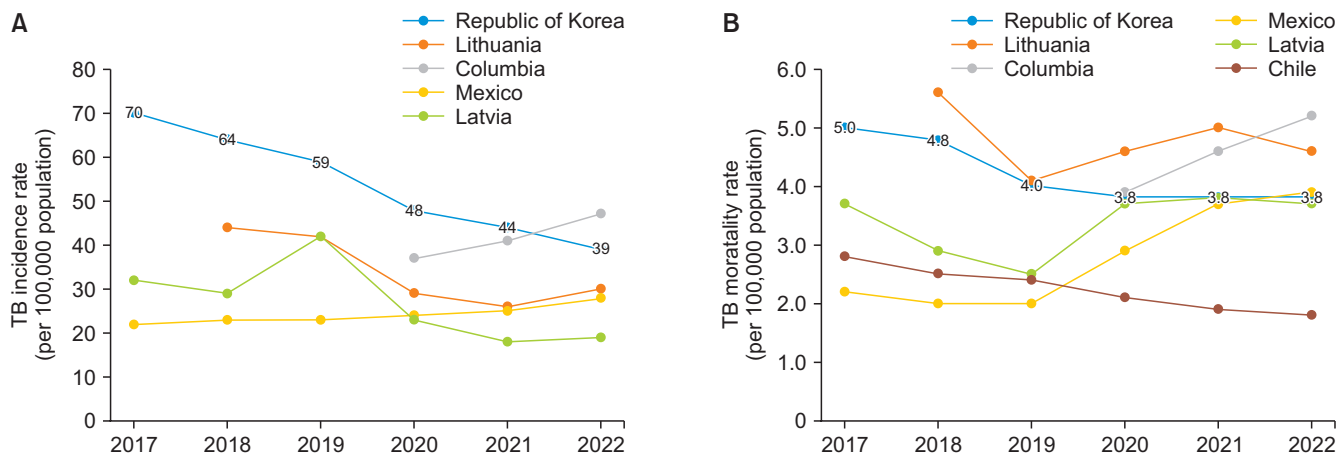
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Figure 1. Estimates of tuberculosis (TB) burdens in the Republic of Korea and other member countries of the Organization for Economic Co-operation and Development countries between 2017 and 2022; (A) TB incidence rate, and (B) TB mortality rate. TB, tuberculosis.



Lithuania and Columbia became members of the Organization for Economic Co-operation and Development in 2018 and 2020, respectively.

(OECD) countries, rising from 41 to 47 cases compared to the previous year (Figure 1). Despite consistently holding the highest tuberculosis incidence rate among OECD members since joining in 1996, Korea's incidence rate continued to decline, placing it in the second position. Furthermore, Korea's tuberculosis mortality rate in 2022 decreased to 3.8 per 100,000 population, holding the fourth position among OECD members. Despite concerns about a decline in tuberculosis notification during the early stages of the COVID-19 pandemic⁵, Korea mitigated its deleterious effect on the healthcare system and witnessed a sustained decrease in tuberculosis incidence even after the pandemic.

Korea announced its 'third National Strategic Plan for Tuberculosis Control (2023–2027)' on World Tuberculosis Day, 2023, aiming to achieve a tuberculosis incidence rate of less than 20 cases per 100,000 people by 2027. Over the next 5 years, the plan intends to strengthen the foundation for tuberculosis prevention, diagnosis, and treatment, focusing on every stage of the tuberculosis life cycle. It plans to identify vulnerable populations for tuberculosis, such as elderly individuals, foreigners, patients at high risk of tuberculosis infection, and people in high-transmission congregate settings, and implement stratified strategies tailored to these populations. It aims to reinforce national policies to screen tuberculosis and expand medical infrastructure and multidisciplinary collaboration between public and private sectors.

However, the budget allocated for tuberculosis care

and prevention for the upcoming year, 2024, has decreased by 24.3% compared to this year⁶. Out of the 16 tuberculosis prevention, diagnosis, and treatment initiatives outlined in the third National Strategic Plan for Tuberculosis Control, budgets for 15 initiatives have been reduced or terminated. Particularly, the entire budget for the newly initiated latent tuberculosis infection screening program for this year has been cut. There has been a significant reduction in the salaries of tuberculosis specialist nurses and public health officers. The number of tuberculosis specialist nurses is projected to decrease by 26.7%, from 341 this year to 250 next year, and public health officers will reduce by 29.6%, from 668 to 470. The role of tuberculosis specialist nurses is to provide comprehensive patient management within the public-private partnership of the tuberculosis control project⁷. Furthermore, a preliminary count of notified tuberculosis cases until the third quarter of 2023 revealed a 0.1% increase compared to the same period last year⁸. Particularly, individuals aged 65 and above showed a noticeable increase of 5.0%. A growing tuberculosis burden among the elderly is an inevitable consequence of an aging population in Korea⁹. Tuberculosis cases had shown a consistent decline averaging 7.9% annually from 2011 to 2022. However, a slowdown in this decline and a potential upward trend have been observed since the beginning of this year, posing a significant challenge to the national tuberculosis control plan initiated in 2023.

Korea has been consistently reducing tuberculosis incidence through sustained efforts and political

wills and achieving the goal of the second National Strategic Plan for Tuberculosis Control, which was to decrease tuberculosis incidence to less than 40 cases per 100,000 people by 2022. The political declaration adopted at the 2023 UN High-Level Meeting on tuberculosis reinvigorated efforts for tuberculosis eradication¹⁰, of which had regressed due to the impact of the COVID-19 pandemic. It encompasses commitments aimed at achieving the goals of the End TB Strategy and Sustainable Development Goals by 2030. The declaration emphasizes accelerating efforts to achieve high-quality, timely, and equitable access to tuberculosis services in both low and high-burden countries. Along with this political declaration, the Korean government should implement supporting measures to reinforce and sustain these achievements during the last decade.

Ethics approval was waived because it involved anonymised data sets that exist in the public domain and did not contain any individual human data.

Authors' Contributions

Conceptualization: all authors. Formal analysis: Min J, Jeong Y. Data curation: Min J, Jeong Y. Funding acquisition: Min J. Writing - original draft preparation: all authors. Writing - review and editing: all authors. Approval of final manuscript: all authors.

Conflicts of Interest

Jinsoo Min is an editor of the *Tuberculosis and Respiratory Diseases*, but he was not involved in the peer reviewer selection, evaluation, or decision process of this article. No other potential conflicts of interest relevant to this article were reported.

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