

Public-Private Partnership for Tuberculosis Care and Prevention in Korea

<https://doi.org/10.4046/trd.2024.0022>

ISSN: 1738-3536(Print/)

2005-6184(Online)

Tuberc Respir Dis 2024;87:543-546

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The importance of engaging all providers in tuberculosis (TB) care and prevention has been recognized for well over a decade. Over 3 million people with TB are missed each year by health systems and thus do not get the care they need and deserve. A large proportion of these patients are diagnosed and managed in the private sector but not reported to national health systems. Failure to engage with the public sector can result in long delays in diagnosis and treatment, resulting in further TB transmission and poor-quality diagnosis and treatment, leading to the development of multidrug-resistant TB. The public-private partnership, an important component of the End TB Strategy, was first introduced by the World Health Organization (WHO) to improve the quality of essential TB care in the private sector.

Despite a rapid decline in TB incidence between 1950 and 2000, the TB incidence rate remained stagnant from 2001 to 2010¹. Recognizing its public health burdens, the Korea Disease Control and Prevention Agency (KDCA) initiated various forms of TB eradication efforts. Among these, the Public-Private Mix (PPM) TB Control Project has been actively implemented and expanded nationwide since 2011². Here, we aim to introduce the PPM TB control project, summarize its progress and achievements, and outline its future plans.

In 1955, the Ministry of Health formulated a 5-year plan for TB control centered on public health centers. With the amendment of the Public Health Center Act in 1961, the National TB Control Program was enforced from 1962, focusing on early detection and treatment in public health centers. During times when treatment facilities were insufficient, TB were managed primarily through public health centers. With economic growth between 1970s and 1980s and universal health coverage in 1989, patients preferred treatment at private hospitals and proportion of TB cases managed at private sector continued to increase. However, anti-TB treatment outcome were unsatisfactory within private sectors. Surveys conducted in private clinics in Korea revealed that the treatment success rate was only 49.2% in 1987 and rose to just 62.7% by 1993, with a loss-to-follow-up rate of 30%³.

The first initiative of the public-private collaboration model was introduced by the Korean Institute of Tuberculosis in 2001, with improved treatment success rates among patients with new smear-positive pulmonary TB⁴. In September 2006, the Ministry of Health and Welfare formulated the 2030 TB Elimination Plan and introduced a PPM model. In 2007, a pilot PPM project supporting 16 TB specialist nurses was implemented in 11 university-affiliated hospitals, each having over 250 reported TB cases annually. As the treatment success rate in the private sector improved through the pilot project, a legal basis for the PPM TB control project was established under Article 7 of the TB Prevention Act in January 2009. In February 2009, 22 hospitals participated⁵. This initiative expanded to 45 hospitals in 2010. By 2011, the PPM project had expanded nationwide, and 97 hospitals with over 100

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Received Feb. 19, 2024

Revised Mar. 15, 2024

Accepted Apr. 7, 2024

Published online Apr. 9, 2024

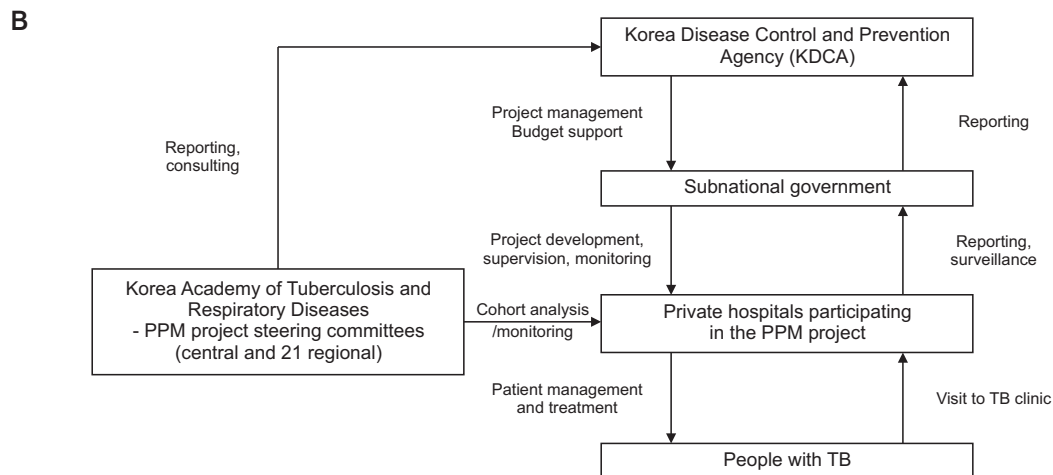
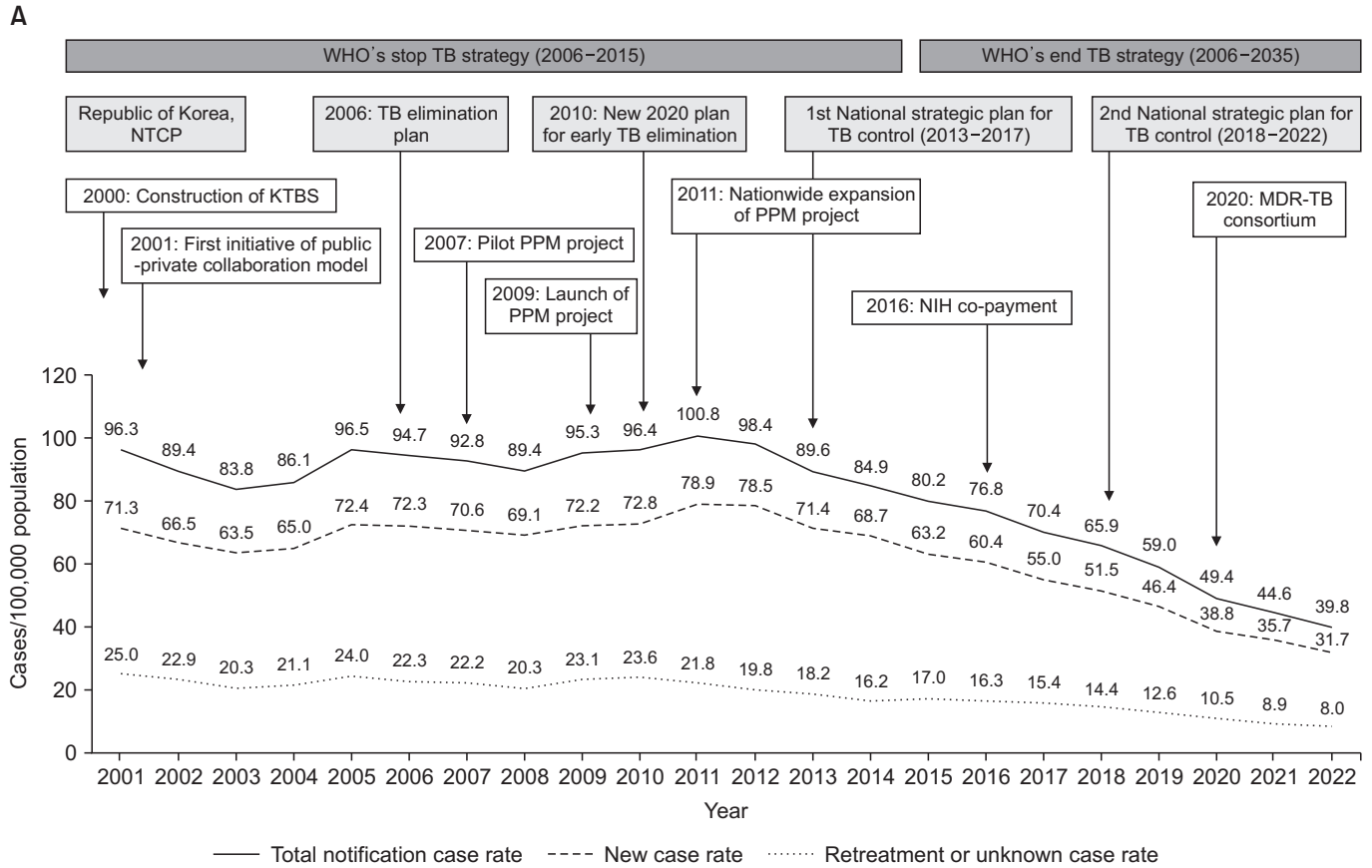

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reported TB cases per year participated. Joint committees involving local governments, public health centers, and private hospitals have operated for regional TB management since 2014.

The PPM project was maintained despite threats to

the healthcare system caused by the coronavirus disease 2019 (COVID-19) pandemic⁶. The TB notification rate has been continuously decreasing since 2011 (Figure 1A). After observing the successful management of patients with TB within the PPM project^{7,8}, the MDR-

Figure 1. Trends in tuberculosis (TB) notification rates between 2001 and 2022 (A) and structure of the Public-Private Mix (PPM) Tuberculosis Control Project (B) in the Republic of Korea. WHO: World Health Organization; NTCP: National Tuberculosis Control Program; KTBS: Korean Tuberculosis Surveillance System; NIH: National Health Insurance; MDR-TB: multi-drug resistant tuberculosis.



TB consortium was formed in 2020 to comprehensively manage patients with rifampicin-resistant TB.

The public sector is responsible for policy decisions, budgets, and administrative support for the PPM project (Figure 1B). The private hospitals hire and train TB specialist nurses, provide necessary equipment and patient's clinical information, and assist them in providing patient care and support. The primary focus of the PPM project is to enhance TB case management at private hospitals, thereby reducing follow-up losses and improving outcomes. TB specialist nurses are responsible for educating, supporting, and counseling patients along the care pathway. They register TB cases, explain the anti-TB treatment process, check treatment adherence, and encourage patient clinic visits. They counsel for social support and coordinate with other appropriate healthcare services. They also identify family contacts and explain the need for TB screenings and preventive therapy.

The PPM project is overseen by the Korean Academy of Tuberculosis and Respiratory Diseases under the supervision of the KDCA. A steering committee exists, comprising a central office and 21 regional offices, to monitor TB case management activities and improve the quality at private hospitals. In June 2017, a central statistics analysis team was established to host monitoring indicator analysis meetings and evaluate regional activities using the Korean PPM monitoring database (KPPMD)². In addition, a prospective observational registry database of notified patients with TB within the PPM project, the Korea TB cohort (KTBC)⁹, was constructed to facilitate TB research, generate new evidence, and support TB policy development.

In March 2023, the KDCA announced the third National Strategic Plan for TB Control, aiming to achieve a TB incidence rate of fewer than 20 cases per 100,000 people by 2027. One of the four key strategies is the "enhanced patient care and management," with a focus on strengthening the PPM project. The plan includes comprehensively evaluating the project, devising future strategies to adopt local TB epidemiology, and activating regional committees to monitor the activities of private hospitals.

Public-private partnerships play a vital role in the medical field, exemplified by the collaboration between governments, pharmaceutical companies, and research institutions during the COVID-19 pandemic to develop and distribute vaccines. However, differing interests among various entities have complicated TB community collaborations for a long time. Recently, WHO's emphasis on public-private partnerships for TB prevention and care has driven progress¹⁰. Korea has

refined the PPM model over a decade. While not directly replicable, its success could inspire other countries. Bold policies with political wills are crucial for harnessing the public and private sectors and promoting collaborative approaches to TB elimination.

Authors' Contributions

Conceptualization: all authors. Formal analysis: all authors. Data curation: all authors. 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 journal, 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.

Funding

This work was supported by the Research Program funded by the Korea National Institute of Health (grant number 2022E200100). The funder had no role in the study design, data collection and analysis, decision to publish, or preparation of the manuscript.

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