Epidemiological Report

Tuberculosis
Historic Series 2010 – 2021

Ana Angélica Bulcão Portela Lindoso, Eugênia Aparecida de Oliveira, Fernando Pereira, Giovanna Mariah Orlandi, Maria Cecília Vieira dos Santos Ribeiro, Maria de Lourdes Viude Oliveira, Maria Josefa Penon Rujula, Renata Silva de Azevedo, Sidney Bombarda, Suzi Furlan Pratti

Tuberculosis Division
Epidemiological Surveillance Center "Prof. Alexandre Vranjac"
Disease Control Coordination
Sao Paulo State Health Department

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Correspondence
E-mail: dvtbc@saude.sp.gov.br
Institution: ESC|DCC/SHD-SP
Address: Av. Dr. Arnaldo, 351 - 6th floor. CEP: 01246-000. Sao Paulo-SP, Brazil

BRIEF HISTORY OF THE DISEASE

Tuberculosis (TB) is an infectious disease of cosmopolitan distribution that has accompanied man since antiquity. Known as pulmonary phthisis; white plague and, finally called TB, it had its agent identified in 1882 by Robert Koch. Mortality figures were high in the Ancient and Middle Ages. However, after the Second World War (1939-1945), there were advances in strategies to eliminate it. In many areas there were effective control actions with a decrease in cases. In the 1980s, in the AIDS era, the disease reappeared and brought with it a new face, drug resistance. The World Health Organization (WHO) fights to eliminate TB as a public health problem. This disease involves social determinants that need to be controlled in order to reach acceptable goals of incidence and mortality in the new society.

ETIOLOGICAL AGENT

The etiologic agent of TB belongs to the family *Micobacteriacea*, integrating the *Mycobacterium tuberculosis* complex with high genetic similarity between the subspecies. They are: *M. tuberculosis, M. bovis, M. microtti, M. caprae, M. pinnipedii, M. africanum*, and *M. tuberculosis* is the one of sanitary importance causing the disease in humans, also known as Koch's bacillus.

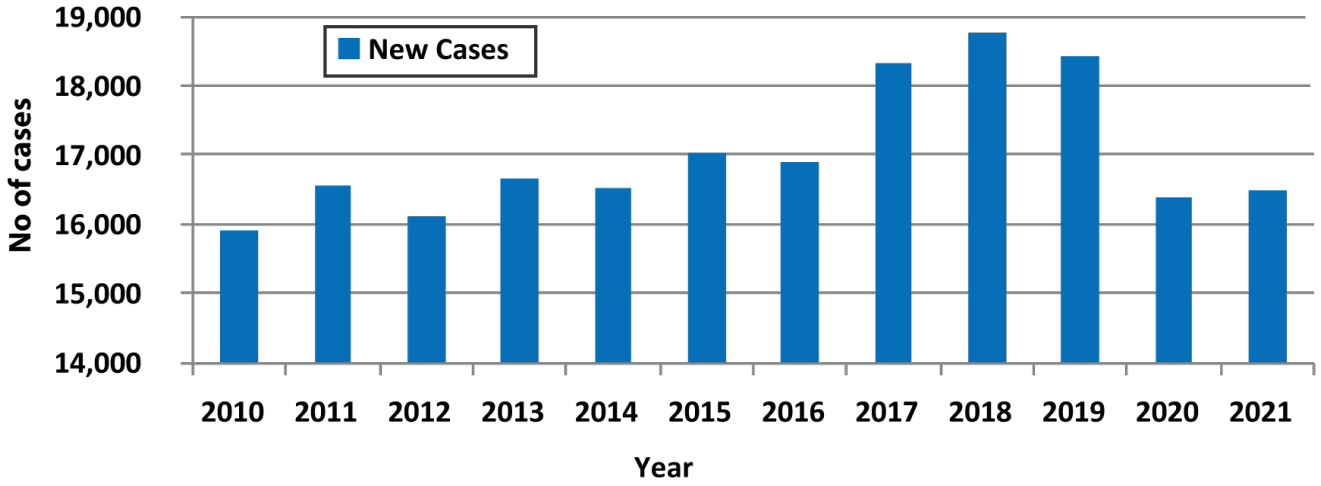
TRANSMISSION MODE

In the chain of transmission of TB, the source of infection, the causal agent and the susceptible host are necessary, and the transmission mechanism is respiratory and by the air. The sick individual is able to release the bacillus through droplets through coughing, sneezing or talking, and the lightest ones are transformed into aerosols (which may contain three to five bacilli) that will be inhaled by a healthy individual and will find in the alveoli lungs their site of insertion to initiate infection.

EPIDEMIOLOGICAL SITUATION

In the period from 2010 to 2021, the number of new cases reported in the state of São Paulo (SSP) ranged from 15,923 to 18,773. The covid-19 pandemic had a direct impact on TB indicators. In 2019, before the pandemic, 18,433 were reported, falling to 16,393 in 2020 and 16,471 in 2021. There was a drop of 11.1% in 2020 and 10.6% in 2021 (Graph 1).

Graph 1. Number of new cases of TB. SSP, 2010 to 2021.*

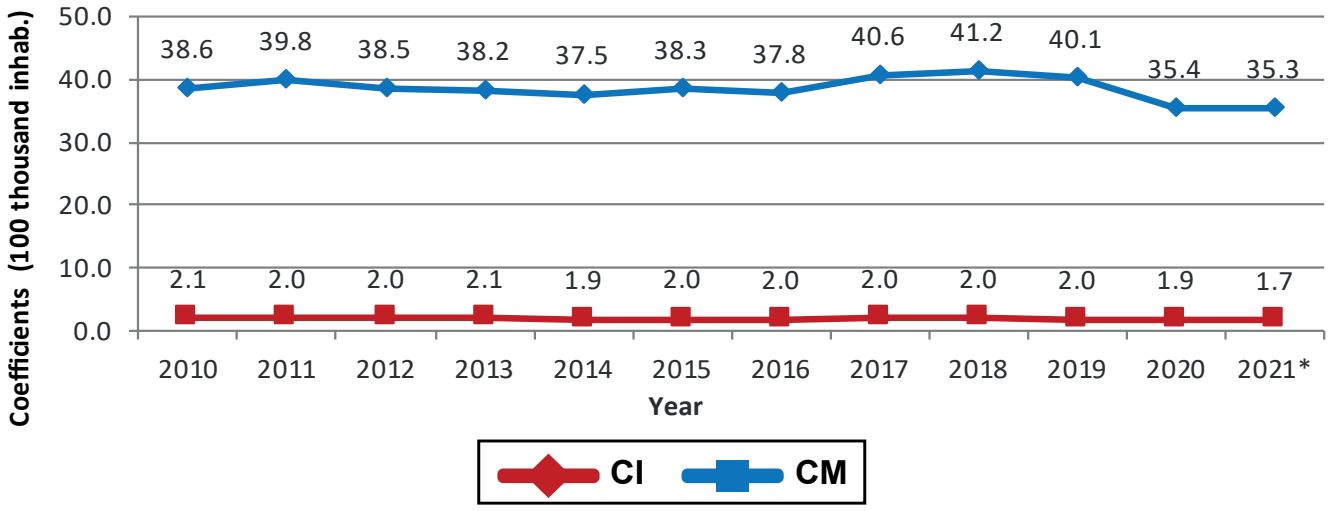


Source: TBWEB/Datasus. *Data extracted on May 27, 2022.

EPIDEMIOLOGICAL INDICATORS

From 2010 to 2021, the incidence coefficient (IC) of TB in the SSP ranged from 38.6 to 35.3 per 100,000 inhabitants. This fall is artificial and can be justified by the impact of covid-19 on health services and systems. In the same period, the TB mortality coefficient (MC) in São Paulo ranged between 1.7 and 1.9 per 100,000 inhabitants. So far, the MC has been following the trend of recent years (Graph 2).

Graph 2. IC and MC of TB (per 100 thousand inhab.). SSP, 2010 to 2021.*

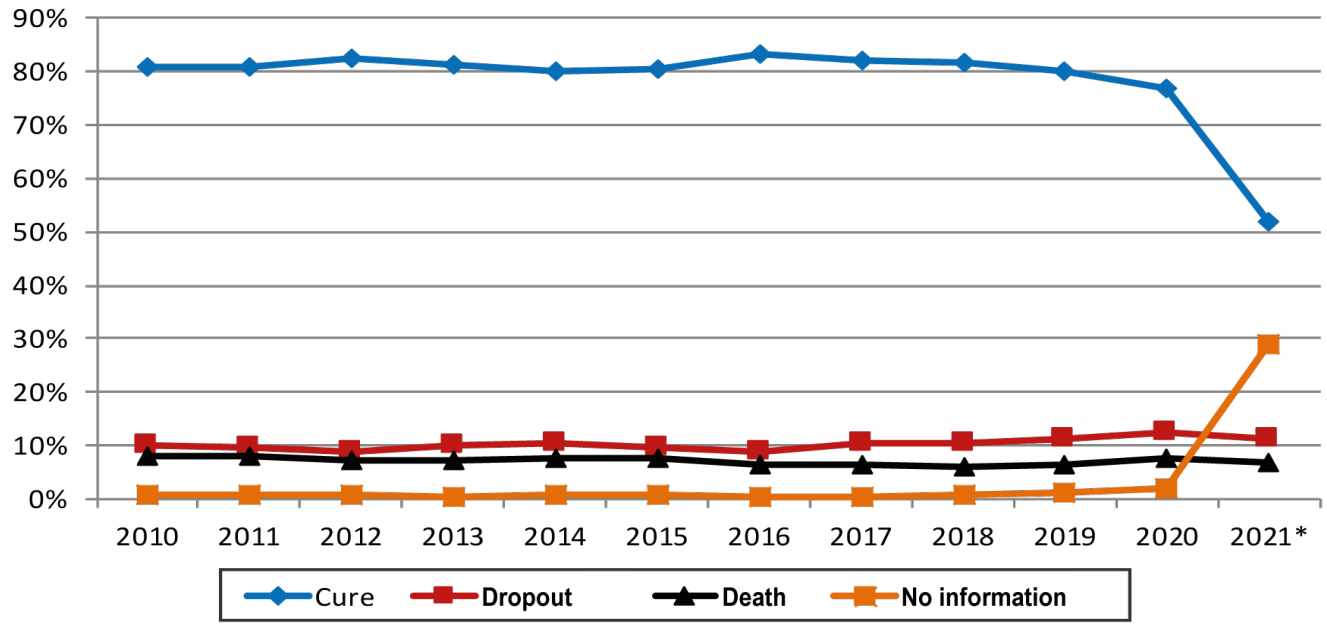


Source: TBWEB/Datasus. *Data subject to change. Data extracted on May 27, 2022; SIM/Datasus – data extracted on March 25, 2022.

OPERATIONAL INDICATORS

Due to TB being a disease with a long duration of treatment (six months, which can extend from 18 to 24 months when there is resistance to the Basic Scheme drugs), 29% of notifications in 2021 still do not have closing information. The result of the treatment is the best operational indicator, to have an impact on the control of this disease, it is necessary that at least 85% of cases have a cure. From 2010 to 2020, cure in the SSP ranged from 77% to 83% and dropout ranged from 9% to 11% (Graph 3).

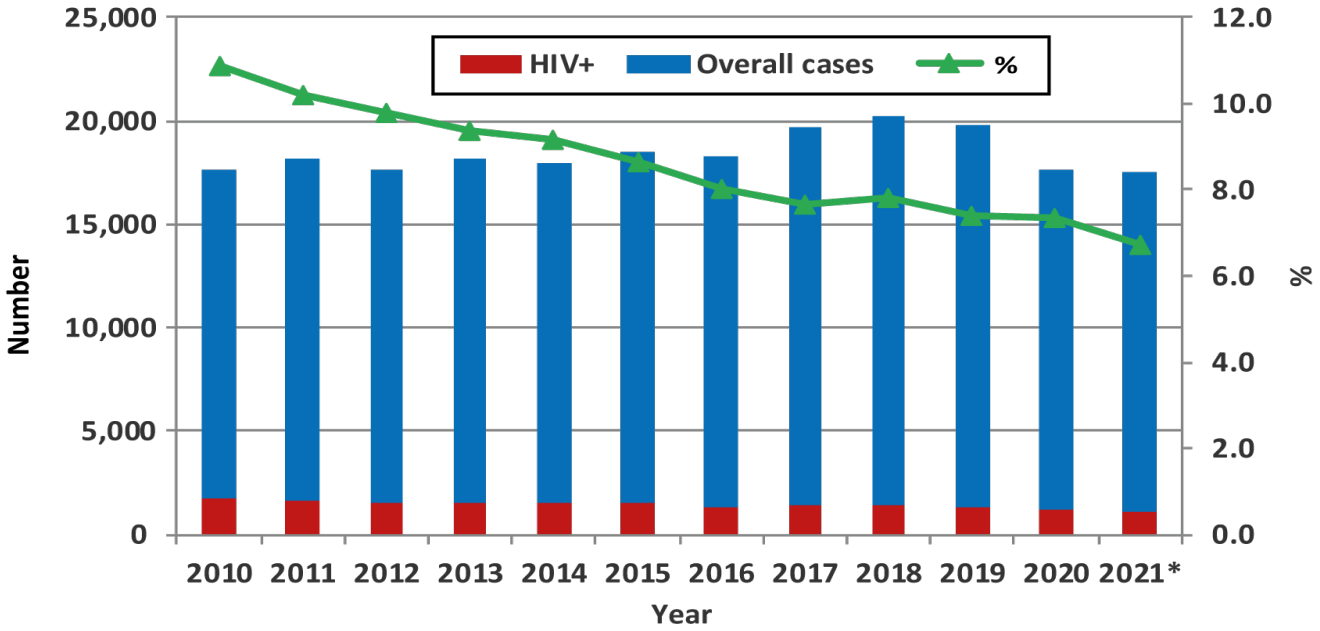
Graph 3. Situation of termination of treatment of new cases of pulmonary TB. SSP, 2010 to 2021.*



Source: TBWEB/Datasus. Data extracted on May 27, 2022. *Data subject to change.

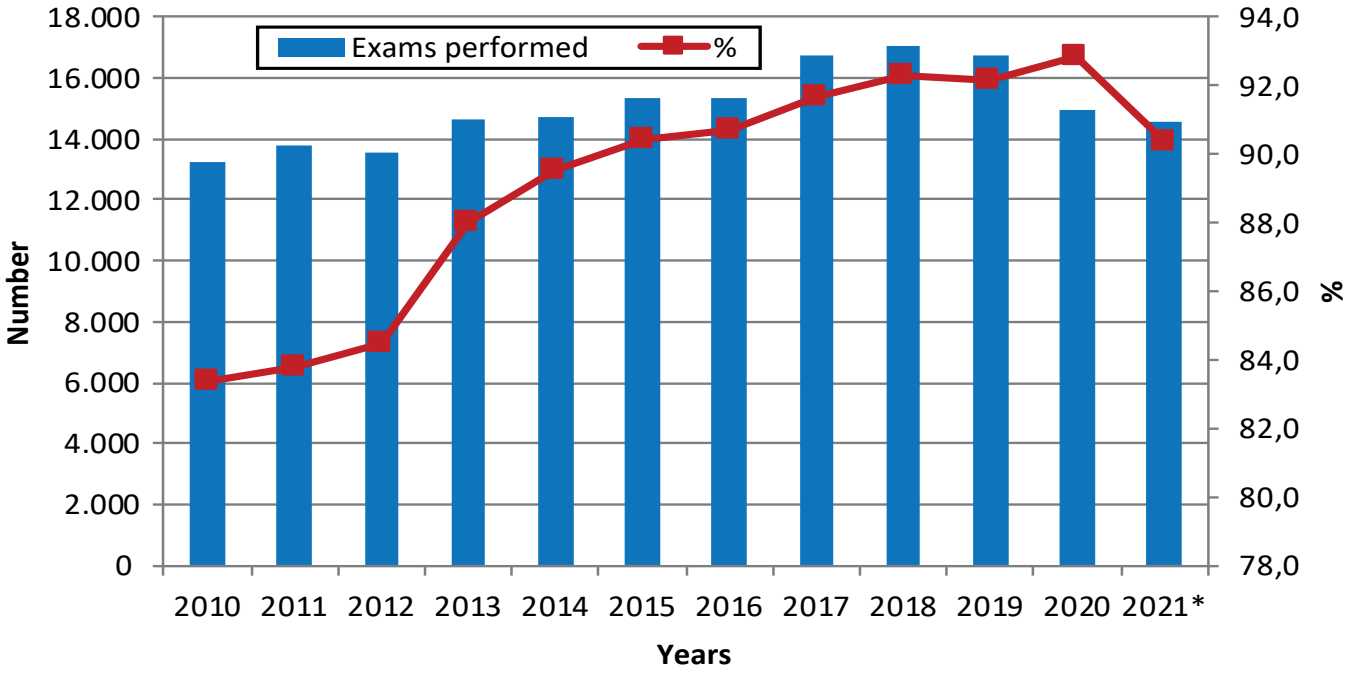
HIV infection is among the greatest risk factors for illness and death from TB. The proportion of TB/HIV co-infection dropped, ranging from 10.9% to 6.7% in the period from 2010 to 2021 (Graph 4), a period in which there was an improvement in HIV testing, ranging from 83.4% to 92 .9% (Graph 5).

Graph 4. Distribution of total cases of TB and TB/HIV co-infection. SSP, 2010 to 2021.



Source: TBWEB/Datasus Data extracted on May 27, 2022. *Data subject to change.

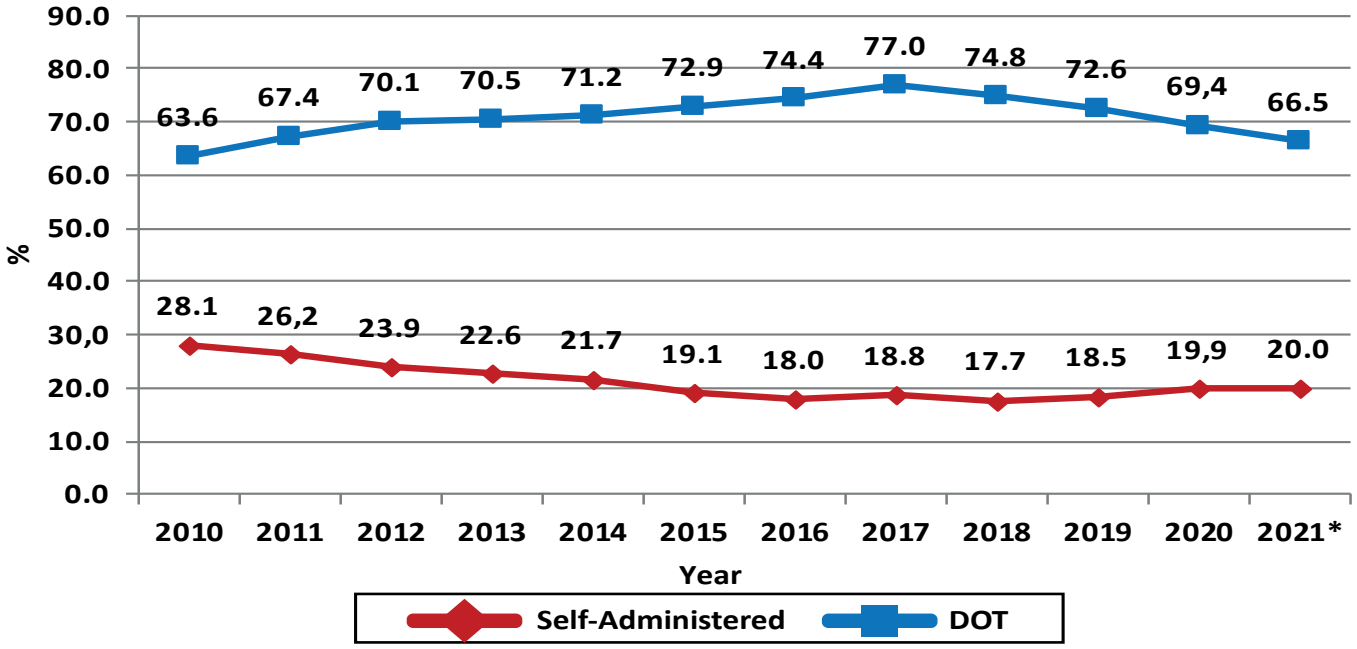
Graph 5. HIV testing in new cases of TB. SSP, 2010 to 2021.



Source: TBWEB/Datasus. Data extracted on May 27, 2022. *Data subject to change.

From 2010 to 2021, Directly Observed Treatment (DOT), an important strategy that ensures treatment adherence and reduced dropout rates, ranged from 63.6% to 77.0%. (Graph 6).

Graph 6. Proportion of type of treatment in new cases of TB. SSP, 2010 to 2021.*



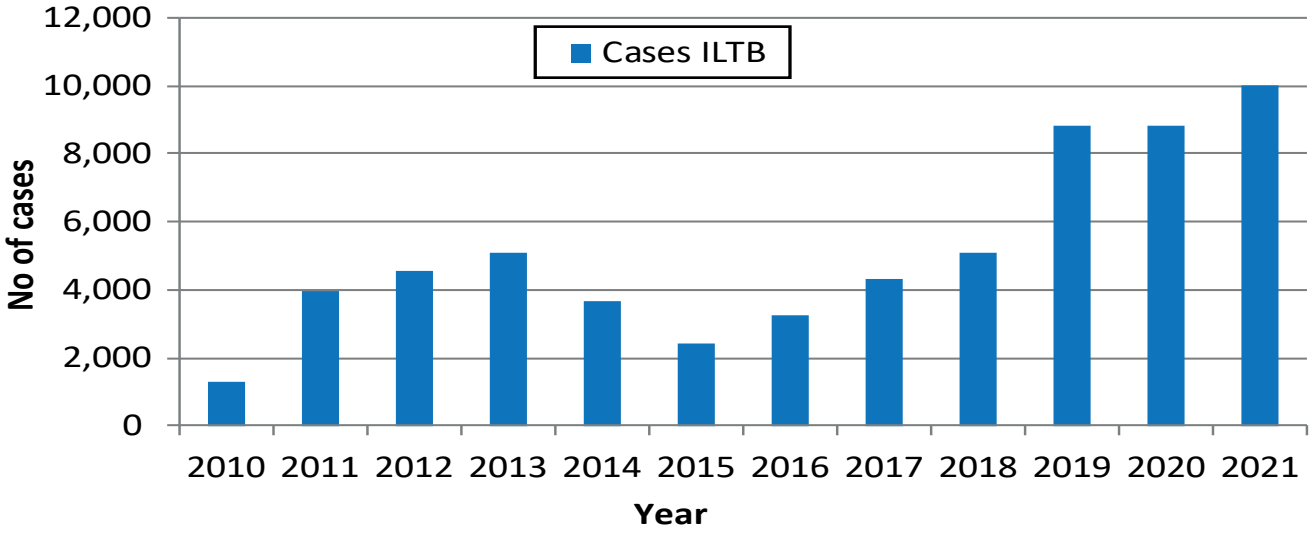
Source: TBWEB/Datasus. *Data subject to change. Data extracted on May 27, 2022.

STRATEGIES TO PREVENTILLNESS

The State Tuberculosis Control Program monitors through epidemiological and operational indicators, such as monitoring latent TB infection (LTBI), a situation that precedes active disease. The treatment of LTBI prevents the development and illness of the individual, especially in the most vulnerable populations such as: children in contact with bacilliferous TB and people living with HIV/AIDS. The treatment of latent TB (LTBI) prevents an infected individual from developing the active disease, interrupting the chain of transmission and, consequently, reducing the number of cases. Regarding the LTBI data, from 2009 to 2018 the SSP performed the control through the TB Chemoprophylaxis system. As of 2019, this action was carried out by the Ministry of Health. In 2021, the registration of LTBI became indispensable and, at the same time, a new therapeutic regimen was incorporated for latent infections.

In the period from 2010 to 2013, there was an increase in the registration of people treating LTBI and the drop in 2014 is due to the lack of purified protein derivative (PPD) in the country. In 2015, the supply of this input was gradually resumed (Graph 7). In 2021, the number of cases in the system increased (10,001 cases), reflecting the obligation to notify people who are undergoing treatment.

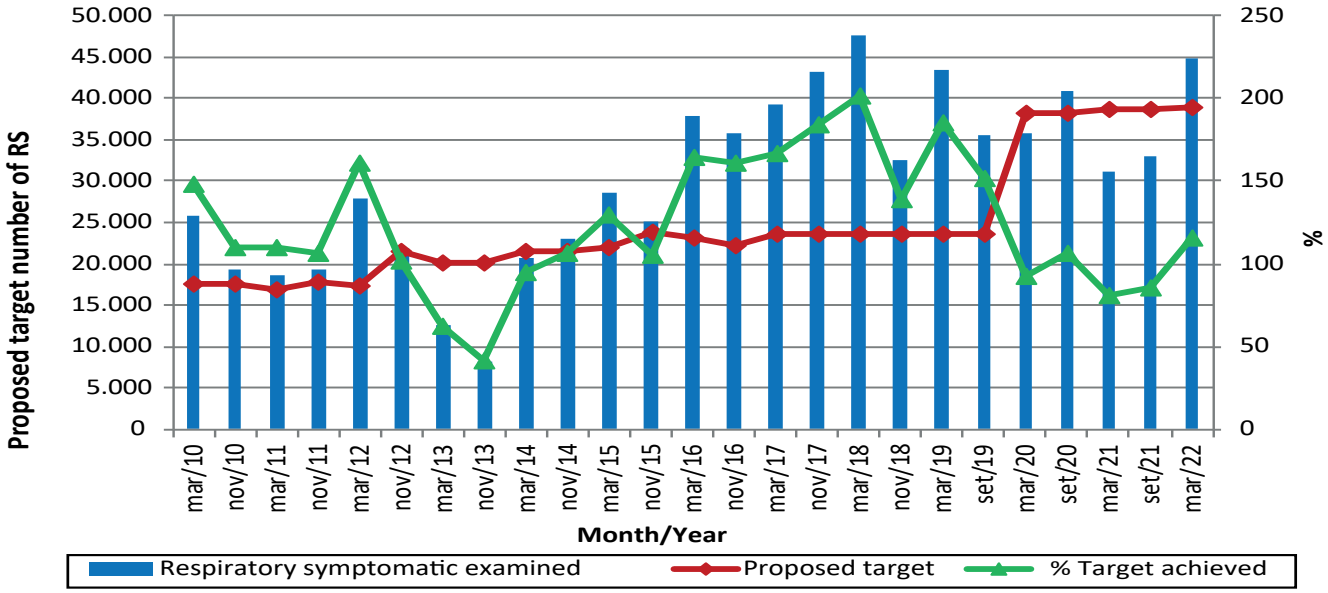
Graph 7. Total records of latent TB infection (LTBI). SSP, 2010 to 2021.*



Source: TB chemoprophylaxis system (2009-2018) and IL-TB System (2019-2021). *Data extracted on June 15, 2022.

The early discovery of cases of pulmonary TB through the active search (AS) of the respiratory symptomatic (RS) interrupts the chain of transmission of the disease, as long as it is accompanied by timely treatment. To improve AS activities in the SSP, two intensification campaigns are carried out a year. This measure significantly improved results from 2010 to 2019 (Graph 8).

Graph 8. Proposed target number of respiratory symptomatic (RS) and percentage of target achieved during intensification campaigns. SSP, 2010 to 2021.*



Source: Tuberculosis Division/CVE/CCD/SES-SP. *Data extracted on June 15, 2022.

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