

History of Tuberculosis Treatment in Argentine until the 1970s Tuberculosis: our experience

Historia del tratamiento de la tuberculosis en la Argentina hasta la década de 1970

Tuberculosis: Lo vivido

Rey, Darío Raúl¹; Sivori Martin²

The specialty called “Tisiology” arose from the attention given to Tuberculosis (TB), hence its name. Doctors who had been trained until the first half of the 20th century were tisiologists, and it wasn’t until the appearance of anti-TB drugs, mechanical ventilation, and advances in respiratory physiology, combined with more thorough knowledge of obstructive diseases (especially bronchial asthma and COPD [chronic obstructive pulmonary disease]), that Pulmonology emerged as a specialty, encompassing the management of TB and other respiratory diseases.

Certainly, TB is among the main infectious causes of morbidity and mortality among indigenous peoples between the 15th and 19th centuries. As a matter of fact, Blessed Ceferino Namuncurá (1886-1905), grandson of the great chief Callvucurá, died of TB.

Since the Argentinian territory is vast, the health situation of TB management in the 19th century and the first half of the 20th century will be explained with examples of some geographical regions of some provinces. During that time, contagious TB patients were handled in isolation centers. One of the factors that contributed to high TB mortality rate was the non-existence of an effective cure method until well into the first half of the 20th century. Meanwhile, the strategies used by medicine to contain TB were sanatoriums and dispensaries where sick people were treated using various therapies, including hygienic-dietary

cure or rest cure, as well as other methods with insufficient results such as surgeries (exeresis, thoracoplasties, pneumothorax), fortifying tonics, gold salts, etc.¹⁻² Mortality in the first two decades of the 20th century was between 130 to 140 patients per 100,000 inhabitants, with peaks of 160/100,000, but then it decreased to 60/100,000 by 1947 (pre-antibiotic era) due solely to preventive and isolation measures generated by Public Health efforts. After the introduction of streptomycin (S) and then the remaining antibiotics, mortality dropped drastically in the following ten years.³

The World Health Organization considers TB to be the 13th leading cause of death in the world. In 2020, 1.5 million people died from TB, including 214,000 people with Human Immunodeficiency Virus (HIV).⁴ During that period, 9.9 million people got sick with TB, and the 30 nations with high burden of TB accounted for 86% of the new cases of the disease.⁴ The incidence of TB is decreasing around 2% per year. Between 2015 and 2020, the cumulative reduction was 11%. Thanks to the diagnosis and treatment of TB, 66 million human lives were saved.⁴

In Argentina, 10,896 cases of TB were reported in 2020, of which 10,268 were new cases and the rest were relapses.⁵ The national rate was 24.01/100,000 inhabitants, and the highest rate corresponded to Salta (42.4/100,000). The highest number of TB cases was reported in the province of Buenos Aires and CABA (Autonomous City of

¹Director of the Specialization Career, UBA (University of Buenos Aires), Academic Unit, Hospital Tornú.

²Director of the Specialization Career, UBA, Academic Unit, Hospital Ramos Mejía.

Buenos Aires), accounting for 65.94% of the reported cases in the country. In 2020, there were 656 deaths due to TB in Argentina, representing a rate of 1.45 per 100,000 inhabitants.⁵

BUENOS AIRES AND SURROUNDING AREAS

Around 1880, in the City of Buenos Aires (CABA), there were four adult hospitals in addition to the Casa de los Niños Expósitos: the Hospital de Hombres (next to the Convent of Santa Catalina), the Hospital de Mujeres (now located at Tacuarí and Bartolomé Mitre), and the Lazareto de San Roque (which also housed patients with TB after the cholera and yellow fever epidemics, now called Hospital JM Ramos Mejía).⁶⁻⁸ That hospital was the first one associated with the Faculty of Medicine of the University of Buenos Aires (UBA), and as such, the first multispecialty hospital created within the city of Buenos Aires. The fourth hospital was created for the War of Paraguay: the Hospicio de los Inválidos (for severely wounded soldiers from regional fratricidal wars and psychiatric patients) in Barracas, where the old Hospital Rawson was then created.⁶⁻⁸

At the end of the 19th century, at the national level, Dr. Gregorio Aráoz Alfaro (1870-1955) assigned a general prophylaxis plan for tuberculosis. This plan had two main characteristics: one direct and one indirect. The direct one consisted in working mainly with dispensaries located in strategic places whose function was the home visit of the doctor, to detect infected persons and treat them. Then, disinfecting the dwelling and the clothes used, and isolating the sick. Patients who were critically ill were referred to a hospital. With the indirect prophylaxis, the focus was on strengthening the healthy body, mainly in children: school hygiene, education for mothers, physical education, open-air schools, summer camps, all aimed at improving child health, because it was believed that TB was acquired during childhood, but manifested in adulthood.⁹

Due to the large number of patients with TB, a Municipal Isolation House for contagious patients was created. It was located at the corner of Paraguay and Azcuénaga streets. It later transformed into the Hospital de Clínicas, affiliated with the Faculty of Medicine, in 1881. It was supervised by Ignacio Pirovano, Cleto

Aguirre, and Pedro Arata, Dr. José Penna created an isolation center in CABA in 1883, known as the Hospital de las Barracas, for contagious patients, with more than 300 beds, where the Hospital Muñiz is now located. By 1900, the Hospital Muñiz began to be built, and it was promptly assigned to the Faculty of Medicine. Built as pavilions separated by wide internal streets, it is the model that has been used and still exists today.^{8,10} In 1904 it was called Hospital Francisco Javier Muñiz. In 1936, the modern Koch Pavilion with 200 beds was inaugurated, and its majestic architecture continues to amaze us to this day. In 1938, the Tuberculosis Dispensary, with access from Vélez Sarsfield Avenue; the Experimental Tuberculosis Laboratory, and the three areas that depended on the Chair of Tisiology and the Faculty of Medicine of the UBA were founded, giving rise to the central figures in the history of Argentinian Tisiology: Raúl Vaccarezza, Oscar Croxatto (pathologist), Alfredo Lanari and Abel Cetrángolo (bacteriologist).^{8,10} The first Full Professor of the Chair of Tisiology was Raúl Vaccarezza, in 1938. The University Institute and its three premises bear his name.¹⁰ Then came until the 1970s, professors Dr. Juan Carlos Rey (1950-1971), José María Leston (1972-1973), Jorge Pilheu (1974), Rubén Sampietro (1975), Francisco Dubra (1976) and Luis Julio González Montaner (1977-1995).¹⁰ Professor Raúl Vaccarezza opened in 1939 the University Anti-Tuberculosis Center, directed by Dr. Benjamín Enquin, to preventively evaluate students entering the UBA.⁹

Another important center for the care of patients with tuberculosis was created in CABA in 1904, first as a dispensary in Villa Ortúzar and later as a public hospital, currently known as Dr. Enrique Tornú.^{6,7} The founding figures of this Center were Doctors Samuel Gache, Emilio Coni and Enrique Tornú. Dr. Alejandro Raimondi, well-known tisiologist, created the Nursing School for this Center. Then in 1934, the Center for Tisiological Research was created within the facilities of the Hospital Tornú, and in 1955 it became part of the UBA. Dr. Alfredo Lanari was appointed as the first Director, and later the Center became known as Instituto Alfredo Lanari.^{6,7}

In 1901, the Argentine League for the Fight against Tuberculosis (*Liga Argentina de Lucha contra la Tuberculosis*, LALT) was created as a pri-

vate institution with several dispensaries located throughout the city, and with its headquarters in the Palermo neighborhood of CABA.^{6, 7}

Other renowned figures of the first half of the 20th century were doctors Jorge Loro Marchese (1924-2021) and Oscar Vaccarezza (1906-1985), both chest surgeons, and Pedro Rubinstein (1914-1984). In ward 3 of the Hospital Rawson, Dr. Zelasco established the Respiratory Tract Office, and Rubinstein worked there. That center was also a hub for the care of patients with tuberculosis, and the Hospital Rawson received support from the surgical team of the Finochietto brothers.

Another traditional center for the management of TB in the northern area of Greater Buenos Aires is the Hospital Antonio Cetrángolo, in Vicente López, which was established in 1937 as a specialized dispensary for TB and later transformed into a hospital in 1952, investigating and treating other diseases under its current name.^{6, 7} Dr. Ángel Bracco was the prominent figure in chest surgery.

CENTER OF OUR COUNTRY

With the argument that “air cure” or “climate cure,” which had already been used with some success in cases of non-severe TB, was the preferred choice of Argentinian medicine, sanatoriums and care centers in Córdoba, located in regions with dry and high-altitude climates, became the chosen destination “for sick-chest patients.” However, other areas of the country such as the Atlantic coast, the Andes mountain range, La Pampa, and even the surrounding areas of Buenos Aires or some of its neighborhoods, were possible destinations for the “rest cure” treatment.² As early as 1906, in his report on the working class, Juan Biale Massé offered a perspective that linked the “purest air” of the mountains of Córdoba with the ability of the so-called “Mecca of tuberculosis” to cure 5000 tuberculous patients per year.^{2, 13} One noteworthy place in the Sierras Chicas mountain range is Santa María de la Punilla, in Córdoba, created by Dr. Fermín Gutiérrez in 1900. It was an enormous building that is now a hospital.

Regarding epidemiological medical information, the First Pan-American Congress on Tuberculosis was held in Córdoba in 1927, where foreign and national doctors presented their first scientific communications.¹¹⁻¹³ In the case of Córdoba, a large

number of establishments were created from 1920 onwards, which housed patients or just treated them on an outpatient basis. In 1915, it had 400 beds and by 1925, that number had quadrupled, bringing it to 1,500 beds.^{11, 12} There were also a large number of private sanatoriums, such as the Sanatorio Mieres, Clínica Berna, Hogar Japonés, Sanatorio de la Marina, Sanatorio Laënnec, and Centro Universitario. Two more sanatoriums, the Sanatorio de Nuestra Señora de la Misericordia and the Hospital Tránsito Cáceres de Allende, were established around 1922.^{11, 12} In the mid-1930s, these facilities added approximately 500 beds, in addition to those that treated patients on an outpatient basis, such as the Dispensario de la Sociedad Tránsito Cáceres de Allende (1918), the Dispensario Antituberculoso, part of the Hospital Rawson (1926), and the Dispensario Central Antituberculoso, dependent on the government of the province of Córdoba (1931).^{11, 12} The preventive testing of university students began in 1936 at the Instituto de Tisiología de Córdoba, under the direction of Prof. Gumersindo Sayago.⁹ In 1937, the University Antituberculous Dispensary was created in the same institute, under the direction of Prof. José F. Verna.⁹ In 1942, the Hogar Universitario was created in the city of Cosquín, Córdoba, for the treatment of university students with tuberculosis, under the direction of Dr. Luis C. Vauthier. It had branches in La Plata, Rosario, Buenos Aires, Tucumán and Cuyo.⁹

NORTHWESTERN AREA

In October 1850, thanks to the priest Escolástico Zegada, the Hospital de Jujuy began to operate with 14 beds. Today it is known as the Hospital San Roque.^{14, 15} Doctors Sabino O'Donnell, Arias, and Luis Cuñado were the first physicians at one of the oldest hospitals in the country.¹⁴⁻¹⁵ It served as a place of isolation for patients with tuberculosis. Wealthy patients paid for board and lodging, thus allowing the care of people in need and promoting the cooperative approach advocated by Zegada. After 13 years of providing care to 1,400 patients, the hospital closed temporarily due to lack of funding. In 1868, the priest managed to reopen the hospital.^{14, 15}

In San Miguel de Tucumán, different governments such as the one of Marcos Paz (1858) invested in education on hygiene and different

measures to improve public health.¹⁶ In 1887, the Council of Public Health was created. It was the predecessor of the Ministry of Public Health that was established in the 1940s. Some of the outstanding doctors in the treatment of TB were Benigno Vallejo, Julio González Lelong, Guillermo Paterson, and Lozada Echenique. The Instituto Microbiológico was created under the direction of G. Paterson and Pedro García.¹⁶ At the end of the 19th century, hospitals with modern conception began to operate. In 1883, the Hospital Nuestra Señora de las Mercedes was inaugurated. That name that would be replaced in 1912 by Hospital Ángel C. Padilla, located in its current location. There were four pavilions, two for men and two for women.¹⁶ In 1900, the Hospital San Miguel was inaugurated with two pavilions for women, which would later be named Zenón J. Santillán. The most important sugar mills had their own hospitals.¹⁶ The Tucuman deputy, former Dean of the Faculty of Medicine of the UBA, and former head of Gynecology and Obstetrics at Hospital Ramos Mejía, Dr. Eliseo Cantón, incorporated important measures in hygiene and public health. Dr. Ernesto Padilla's government (1912-1915) introduced mandatory education in the province on elementary notions of child hygiene and childcare. At the private level, Alfredo Guzmán established La Granja Modelo between 1910 and 1920, which was unique in its kind in Latin America at that time. It was a factory that pasteurized milk under strict safety and efficacy standards. As a consequence, bovine TB was completely eliminated.¹⁶

In Cuyo, specifically in Mendoza, it was known for its “dry, sunny climate (*heliotherapy*), and high altitude above sea level.” That's why Dr. Julio Lemos referred to it as a “city-sanatorium,” as patients would come from abroad to alleviate their ailments.¹⁷ By the 20th century, in 1924, Dr. Carlos Puga published an article called *Dispensarios antituberculosos. Necesidad de su implantación en Mendoza*, in the *Revista Médica de Cuyo*, where he warned about the urgency of approaching the fight against this disease in a systematic and effective manner.¹⁷ In July 1926, through the LALT, presided over by Dr. Gregorio Alfaro, Dr. Puga, Dr. José Palma, and Mr. M. Jankowski founded the Antituberculous Dispensary of the LALT. They summoned other professionals such as Salomón Miyara, Pedro Notti, and Carlos Guerra, who provided free assistance to over 2,000 people within a

period of 6 months.¹⁷ By 1940, assistance was being provided to more than 43,000 patients. In 1929, at first, patients were hospitalized at the Hospital Lencinas, which had 200 beds, but it quickly became overcrowded. In August 1940, the publication *Acción Antituberculosa* began to be published on a monthly basis (director: Dr. Salomón Miyara, with a crucial role in providing information about TB).¹⁷ In 1942, Law 1472 was enacted, which mandated the establishment of a radiological registry in the Province. All these actions, still in the pre-antibiotic era, managed to reduce the morbidity rate in 1941 from 10.4 TB patients per 1,000 inhabitants to 6.59 per 1,000 inhabitants. In 1940, the BCG vaccine (Bacille Calmette-Guérin) began to be used for newborns through the LALT, and in 1949, S began to be used.¹⁷

LITTORAL AREA

There is little information available about the history of TB management in the provinces of the littoral area. Public health control took place in Rosario, Santa Fe, and it was provided by the Public Assistance, the first municipal-level institution established in 1890.¹⁸ In 1897, the Casa del Aislamiento (Isolation House, now called Hospital Carrasco) was created, intended for patients with infectious and contagious diseases; and in 1898, the Hospital Rosario was established (currently the Criminal Justice Center). Dr. Clemente Álvarez (1872-1949), a local figure in the fight against TB and the “dissemination” of health issues, spread the emergence of social medical dramas, the life stories and living conditions of TB and leprosy patients, as well as the articles published by Dr. Rubén Vila Ortiz.¹⁸

PATAGONIA

There is very little specific information about the situation in Patagonia, but it is likely that it followed the general guidelines mentioned earlier, regarding assistance focused on the first public hospitals serving as isolation centers. In one of those public hospitals (Viedma, Río Negro), nurse Artémides Zatti (1880-1951), who has been declared a saint by the Catholic Church, worked at the TB dispensary taking care of all patients (he had been a patient himself), including Ceferino Namuncurá.¹⁹

TUBERCULOSIS: OUR EXPERIENCE

One of the authors of this work (DRR) describes his experiences in the field, which include his work at Hospital Muñiz (1965-1979) and Hospital Tornú (1979-2007), until he retired as Head of the Pulmonology Unit.

Coincidentally, at the beginning, the author had two prominent doctors who supervised him and established the initial steps: Dr. Pedro Rubinstein and his clinical supervisor, Dr. Eduardo Herrmann. They both taught the author how to examine patients adequately and with humanity, also to interpret a radiography and perform intradermal reactions using the Mantoux technique. During that time, the invaluable help of the chest computed tomography didn't exist.

Dr. Rubinstein would receive the patients' X-rays on a daily basis and describe the findings, as described by Raoof, from which valuable lessons were learned and developed over the years.²⁰ While TB was predominant among the admissions, he explained that if a patient had three negative bacilloscopies, the diagnosis had to be oriented towards other pulmonary diseases.

Dr. Herrmann, who later became the first Chief of the Pulmonology and Tisiology Unit at the Hospital Ramos Mejía, combined his teaching skills with strictness and high demands in both patient care and study. This sometimes caused annoyance, but he surely was strict when he sensed that the student had a strong dedication to patient care and teaching, and the ability to write about specialized topics.

TB was classified according to radiographic extent as *minimal* (when the lesion occupied one lung field), *moderately advanced* (if it occupied two lung fields), and *advanced* (if it exceeded that). The classification was used to recommend treatment duration: 12 months for minimal TB, 18 months for moderately advanced TB, and 24 months for advanced TB, *unless the patient had renal, skeletal, or meningeal TB, in which case the treatment duration was extended to 36 months.*

Initial treatment consisted of three drugs: streptomycin (S), isoniazid (H), and para-aminosalicylic acid (PAS), along with second-line drugs for retreatment (still in use) such as pyrazinamide (Z), kanamycin (Km), capreomycin (Cm), ethionamide (Et), and cycloserine (Cs), which increased the possibility of toxic effects.

In general, results were favorable due to the principles that stated a treatment should be: *early* (initiated as soon as possible), *intensive* (according to the patient's theoretical weight), *individualized* (taking into account existing comorbidities), *combination therapy* (using at least three drugs to prevent relapses or bacterial resistance), *continuous* (to avoid interruptions), *prolonged* (for the duration prescribed by medical indication), and *updated* (with regular bacteriological monitoring to ensure negative results).

During the Specialization Course, other figures were included in clinical, surgical, and pathological case conferences: Dr. Rey, known for his meticulous analysis of X-rays, scrutinizing them in detail; Dr. Sampietro, a thoracic surgeon, who provided precise indications tailored to each case; and Dr. Croxato, an exceptional pathologist, and young Dr. González Montaner, whose contributions were listened to with great respect.

From 1976 until the end of their medical careers, people working at Hospital Muñiz and Hospital Tornú had the privilege of being under the guidance of *Dr. Jorge Loro Marchese* and *Dr. Jorge Pilheu*. They both shared their professional and teaching practice, which were further passed down to younger generations of professionals.

Under the guidance of *Jorge Loro Marchese*, further lessons were learned regarding the treatment of patients with humanity, the performance of pleural and lung biopsies under his orientation, and participation in conferences and congresses as collaborators.

From *Jorge Pilheu*, valuable skills were acquired in perfecting pre and post-graduate talks, drawing conclusions, and using new guidelines for abbreviated treatment, which led to their inclusion in the book commemorating the 75th anniversary of the American College of Chest Physicians.²¹

All the people mentioned above are always held in high regard, and the teaching skills assimilated and shared over the years continue to be used.

REFERENCES

1. Carbonetti A. Historia Epidemiológica de la Tuberculosis en la Argentina. 1914-1947. Universidad Nacional de Cuyo. Estudios 2012;37-52
2. Armus D. La ciudad impura, salud, tuberculosis y cultura en Buenos Aires, 1870-1950. Editorial Edhasa, Buenos Aires, 2007.

3. Herrero MB, Carbonetti A. La mortalidad por tuberculosis en Argentina a lo largo del siglo XX. *Hist Cienc Saude Manguinhos*. 2013;20:521-36. <https://doi.org/10.1590/S0104-597020130002000009>
4. World Health Organization. Tuberculosis profile: Global 2021. En: https://worldhealthorg.shinyapps.io/tb_profiles/?_inputs_&lan=%22EN%22&entity_type=%22group%22&group_code=%22global%22; consultado febrero 2022.
5. Boletín N° 5 Tuberculosis y lepra en la Argentina. Año V- Marzo 2022. Ministerio de Salud de la Nación. En: https://bancos.salud.gob.ar/sites/default/files/2022-03/boletin_n_5_tuberculosis_y_lepra_en_argentina_28-3-2022.pdf consultado julio 2022.
6. Visillac E. Pioneros de la Salud: Historia de los Hospitales Públicos de la Ciudad de Buenos Aires. Ediciones Olmos. Buenos Aires. 2017
7. Agüero A. Manual de Historia de la Medicina Argentina. Editorial AMA. Buenos Aires. 2014
8. Veronelli J, Veronelli Correch M. Los orígenes institucionales de la Salud Pública en la Argentina: Tomos I y II. Organización Panamericana de Salud. 2004.
9. Acerbi Cremades N. Tuberculosis, curiosidades y reflexiones. Cátedra Historia de la Medicina. Fac. Ciencias Médica. Universidad Nacional de Cuyo
10. Cragolini de Casado G. (octubre de 2011). Instituto Profesor Doctor Raúl Vaccarezza : Casi un siglo de lucha contra la tuberculosis. Universidad de Buenos Aires. Encrucijadas;52. Acceso el 2 de enero de 2023 en <http://http/repositoriouba.sisbi.uba.ar>
11. Carbonetti A. La ciudad de la peste blanca, historia epidemiológica, política y cultural de la tuberculosis en la ciudad de Córdoba, Argentina, 1895- 1914. Dirección de Fomento Editorial, Benemérita Universidad Autónoma de Puebla, Puebla, México. 2011.
12. Carbonetti A. Historia de la tuberculosis en América Latina: A modo de introducción. Centro de Estudios Avanzados Universidad Nacional de Cuyo. Estudios 2012:11-6.
13. Rodríguez M, Aizenberg L, Carbonetti M. Tuberculosis y migración hacia Córdoba a inicios del siglo XX: discursos y concepciones sobre la figura del migrante interno. *Quinto Sol* 2016; 20:1-19.
14. Diario El Tribuno de Jujuy. Luchas, esfuerzo y dedicación: así nació el Hospital San Roque. Nota periodística 28 septiembre 2017.
15. Fleitas M. La atención pública de la salud durante el siglo XX», en Teruel, A. y Lagos, M. (directores): Jujuy en la historia. De la colonia al siglo XX. Jujuy: UNIHR. Facultad de Humanidades y Ciencias Sociales. Universidad Nacional de Jujuy 2006.
16. Romero E. La salud pública en Tucumán: 1880-1920. Biblioteca Digital de la Universidad Católica Argentina.
17. De Pérez Guilhou M, Perinetti C, Perinetti Y. La lucha contra la tuberculosis en la provincia de Mendoza. V Congreso Historia de la Medicina Argentina. 123-141.
18. Raffo A. La tuberculosis en Rosario. Aproximaciones a una historia sociocultural de la enfermedad. *Rev Med Rosario* 2017; 83:128-32.
19. Reyes Alcaide H. ¿Quién fue Artémides Zatti, el santo enfermero de los humildes de la Patagonia? Acceso el 23 de Enero de 2023 en <https://www.telam.com.ar/notas/202210/606978-francisco-canonizara-a-artemides-zatti-el-tercer-santo-argentino.html>
20. Raoof S, Feigin D, Sung A, Raoof S, Irugulpati L, Rosenow EC 3rd. Interpretation of plain chest roentgenogram. *Chest*. 2012;141:545-58. <https://doi.org/10.1378/chest.10-1302>
21. Pilheu JA. Short-duration treatment of pulmonary tuberculosis. *Chest*. 1977;71:583-6. <https://doi.org/10.1378/chest.71.5.583>