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Review Article

The History of Leprosy in Italy: From Ancient Origins to Modern Challenges

A Di Guardo

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Leprosy, or Hansen's disease, is a chronic infectious condition caused by *Mycobacterium leprae*, historically prevalent in Europe but now considered a rare, imported disease in many regions. In Italy, leprosy has undergone a remarkable transformation, from endemic prevalence during the medieval period to near eradication by the 20th century. This article examines the historical, medical, and social factors that have influenced leprosy's trajectory in Italy, highlighting its ancient origins, medieval peak, and gradual decline due to cross-immunity with tuberculosis and evolving public health measures. During the early modern period, urbanization, improved hygiene, and the dominance of tuberculosis contributed to a significant reduction in leprosy cases. By the mid-20th century, the introduction of multidrug therapy and the establishment of specialized leprosy treatment centres further facilitated control efforts. However, the global epidemiology of leprosy has shifted due to migration from endemic areas, presenting new challenges for Italy. Since the 1980s, most cases reported in Italy have been imported, primarily from Asia, Africa, and Latin America. This resurgence of leprosy, although limited in scale, underscores the need for enhanced public health strategies, including targeted screening for high-risk populations and improved access to healthcare for migrants. Delays in diagnosis and treatment, stigma, and underreporting remain significant barriers to effective management.

Keywords: Leprosy, History of Medicine, Public Health, Infectious Disease, Migration

Background

Leprosy, also known as Hansen's disease, is a chronic infectious condition caused by the obligate intracellular bacterium *Mycobacterium leprae* (Britton & Lockwood 2004, Rodrigues & Lockwood 2011). This pathogen primarily affects the peripheral nervous system, particularly the extremities, and can lead to significant disfigurement and disability due to nerve damage (Aridon et al. 2010). Leprosy presents in a spectrum of clinical forms, ranging from paucibacillary (with a strong immune response and few bacilli) to multibacillary (with a weak immune response and extensive bacterial presence) (Nunzi & Massone, 2011). The disease is not highly pathogenic, meaning that while it is contagious, only a small proportion of individuals exposed to the bacteria develop clinical symptoms, due in part to genetic and immunological factors influencing host susceptibility. Transmission occurs primarily through respiratory droplets, and the disease has a long incubation period, often taking years to manifest (Britton & Lockwood 2004). In Italy, leprosy was once widespread, especially during the medieval period, with its prevalence slowly

Antonio Di Guardo, MD, Department of Clinical Internal, Anesthesiological and Cardiovascular Sciences, "Sapienza" University of Rome, Rome, Italy & IDI-IRCCS, Dermatological Research Hospital, 00167 Rome, Italy

Corresponding Author: Dr Antonio Di Guardo; **Email**: antonio.diguardo@uniroma1.it

declining after the 14th century (Rubini et al 2012). In nineteenth-century Italy, leprosy was widely regarded as a hereditary disease, a view strongly influenced by the seminal Norwegian work *Om Spedalskhed* (On Leprosy, 1847) by Daniel Cornelius Danielssen and Carl Wilhelm Boeck. Danielssen, in particular, sought to identify the cause of leprosy and was firmly convinced of its hereditary rather than infectious nature (Danielssen & Boeck, 1874). In an effort to support this theory, he conducted multiple unsuccessful attempts to inoculate leprosy into himself and other hospital staff, failing each time to induce transmission. This reinforced his belief that the disease was non-contagious. However, the discovery of *Mycobacterium leprae* by Gerhard Armauer Hansen in 1873 marked a turning point in medical thought, ushering in the bacteriological paradigm that framed disease as the result of specific microbial agents. In Italy, Hansen's findings catalyzed a rethinking of long-standing hereditary models, prompting new public health debates and a gradual shift toward contagionist interpretations, which by the late nineteenth century began to influence both medical discourse and public health policies concerning leprosy. By the 1980s, Italy had largely eradicated indigenous cases, with foci of leprosy in regions like Liguria, Puglia, Sicily, and Sardinia becoming extinct (Beltrame et al 2020). The reduction of cases is attributed to a complex interplay of medical, social, and environmental factors, including the possible cross-infection between leprosy and tuberculosis (Ravindra et al 2010). However, the disease has not disappeared entirely. Since the late 20th century, Italy has experienced a resurgence of leprosy cases, primarily in immigrants from endemic countries. Between 2007 and 2022, 340 cases were diagnosed in the European Union (WHO 2024). More recently, the occurrence of leprosy in native Italians has become increasingly rare, with only sporadic cases reported. The history of leprosy in Italy reflects broader trends in Europe, where the disease, once endemic, became virtually absent by the modern era (Ricco et al 2019). Leprosy is now considered a rare, imported disease in Europe, with the majority of cases in Italy arising from foreign-born migrants or those returning from endemic areas. Despite the decrease in local transmission, the disease remains a public health concern, particularly with the ongoing migration crisis. Italy's geographic location as a gateway between Africa, the Middle East, and Europe has contributed to its continued presence, albeit in a fragmented manner (Trovato et al 2016, Massone et al 2012). Public health efforts have focused on identifying and treating imported cases, though leprosy has not been included in standard screenings for migrants, unlike more common infectious diseases like tuberculosis and HIV (Pottie et al 2017). Globally, the World Health Organization's efforts, including the provision of multidrug therapy, have led to a significant decline in leprosy prevalence, though new cases are still reported each year in high-burden countries (WHO-SEARO 2018). In Europe, the incidence of leprosy has been increasing slightly, with most cases affecting foreign-born individuals. As a result, leprosy continues to be a neglected disease in many parts of the world, with ongoing efforts needed to control its spread and improve awareness, particularly in regions that are no longer endemic but still vulnerable due to migration and global interconnectedness.

The aim of this article is to offer a comprehensive exploration of the history of leprosy in Italy, examining its evolution within the context of medical, social, and anthropological factors. Furthermore, the article aims to provide an understanding of the changing patterns of leprosy incidence in Italy, from its widespread

presence in the medieval period to its decline in the post-medieval era and eventual reemergence in the modern era due to immigration.

1. *Ancient Origins of Leprosy in Italy*

Leprosy, known since ancient times as a debilitating and contagious disease, is believed to have arrived in Italy during the early Roman period (Browne 1975). Its introduction likely occurred via trade routes and military expeditions, with the Roman Empire serving as a conduit for the spread of various infectious diseases. Archaeological evidence, such as skeletal remains found in Casalecchio del Reno dating back to the 5th century BCE, provides some of the earliest signs of leprosy in northern Italy, suggesting that the disease had already reached the Mediterranean region by this time (Rubini et al 2014, Rubini & Zaio 2014). The spread of leprosy in Italy is thought to have been facilitated by the extensive trade and military networks of the Roman Empire, which connected Europe to Central Asia and beyond, regions already familiar with the disease. As the disease spread along the Mediterranean basin, it became prevalent in both urban and rural populations across the Roman Empire, as evidenced by findings in burial sites such as Palombara and Martellona in Central Italy (Rubini et al 2014). While leprosy was recognized in ancient texts, it was often difficult to distinguish it from other skin diseases, and early Roman writings rarely made a clear distinction between leprosy and other conditions such as "elephantiasis." Roman physicians, including Galen, described chronic skin conditions that resembled leprosy, but the term "leprosy" itself was not always used with the precision we apply today (Galen 2024). Ancient texts instead referred to "elephantiasis" or "leontiasis" as terms for skin conditions like leprosy, though these descriptions were often vague and imprecise. Nonetheless, the disease, in its various forms, was recognized and its impact on affected individuals was significant. The Roman response to leprosy was likely shaped by its understanding of sanitation and public health; the advanced Roman infrastructure, including public baths and sanitation systems, may have helped mitigate the widespread impact of the disease in urban areas. The earliest references to leprosy in the Mediterranean are often linked to the spread of the disease by Alexander the Great's soldiers during his campaigns in the East (Santacroce et al 2021). This connection was further emphasized by the writings of Pliny the Elder, who noted that leprosy was rare in Italy, though it was present in the Mediterranean region. In the first century CE, the term "lepra" began to be associated with chronic skin diseases, including leprosy, and its social and medical implications were becoming increasingly recognized. By the fourth century, hospitals dedicated to the care of leprosy affected persons (LAPs) were established, marking the beginning of organized efforts to manage the disease within Roman society (Browne 1975).

2. *Leprosy in the Early Middle Ages*

Leprosy was a widespread disease in medieval Italy, reaching its peak between the 11th and 14th centuries (Santacroce et al 2021). Its prevalence can be linked to several historical, social, and environmental factors. Leprosy is believed to have spread to Italy during the earlier centuries, notably with the movements of various peoples, such as the Lombards, and was further exacerbated by the Crusades. With the fall of the Western Roman Empire, Italy underwent significant societal upheaval. These disruptions, alongside increased migration, likely contributed to the spread of diseases, including leprosy, across Europe (Fornaciari 2020). Archaeological evidence, such as the skeletal remains from the 6th to 8th centuries found in

Fig. 1 : Official preventing leprosy affected persons from entering the city, from a 13th-century miniature (Bibliothèque de l'Arsenal, Paris).

Campochiaro, Molise, indicates that leprosy was already present in Italy at this time, with the most severe forms showing characteristic facial and bone deformities associated with lepromatous leprosy (Belcastro et al 2005, Rubini & Zaio 2009). Leprosy in the early Middle Ages often appeared as a debilitating and stigmatizing disease. It was particularly feared because of its disfiguring effects and belief of its association with spiritual punishment. In Christian doctrine, leprosy was often seen as a manifestation of divine wrath, a punishment for sin (Fornaciari 2020) (Fig. 1). As result, the disease carried a heavy social stigma. The strong stigma surrounding leprosy in the early Middle Ages coexisted with the first medical attempts to define and manage the disease. While Christian interpretations framed leprosy as divine punishment, this did not fully negate early medical inquiry. Later scholars, such as Browne, would argue that Biblical leprosy differed from Hansen's disease, highlighting a historical misunderstanding that had long reinforced exclusion and fear (Browne 1975). Thus, even as early scientific perspectives began to emerge, they were often subordinate to or blended with religious ideology, resulting in a dual system in which leprosy was both a medical condition and a theological signifier of sin. Therefore, it is important to clarify that the term "leprosy" as it appears in ancient sources—especially in the Hebrew Bible—does not refer to the infectious disease known today as Hansen's disease. In the Old Testament, the term *tzaraat* was used to indicate a broad spectrum of skin conditions, as well as afflictions affecting clothing and even houses. Far from being a medical diagnosis in the modern sense, *tzaraat* signified a state of ritual impurity and was perceived as a divine punishment for moral or spiritual transgressions (Grzybowski & Nita 2016, Kaplan 1993). Chapters 13 and 14 of the Book of Leviticus detail how priests—not physicians—were responsible for

identifying and managing these conditions, which included bright spots, swellings, crusts, alopecia, and discolorations (Bennet 1887). The affected individuals were declared "impure" and isolated from the community, not for fear of contagion but to preserve the spiritual integrity of the group. Modern scholarship has emphasized that the biblical *tzaraat* bears no clinical resemblance to Hansen's disease. In fact, the identification of *tzaraat* with leprosy in the modern sense arose only through a double mistranslation: first, when *tzaraat* was rendered into Greek as *lepra*—a general term for scaly skin diseases—and then into Latin and other languages as "leprosy." This semantic conflation, which became deeply entrenched in theological and popular discourse, had significant historical consequences (Browne 1975, Kaplan 1993). From late antiquity through the Middle Ages, individuals afflicted with Hansen's disease were viewed through the lens of biblical impurity, leading to widespread stigma, social exclusion, and the construction of leprosaria outside urban centers. Such attitudes were shaped not by contemporary medical understanding, but by religious interpretations rooted in ancient texts. The enduring confusion between *tzaraat* and Hansen's disease thus not only misrepresents the historical reality of biblical skin diseases, but also illustrates how religious and cultural narratives have profoundly influenced the societal response to leprosy across centuries. Leprosy affected Person (LAPs) were frequently ostracized from society, and, consequently, their presence in urban areas became increasingly undesirable. By the 7th century, laws such as those enacted by King Rotari of the Lombards required individuals with leprosy to be expelled from cities, reinforcing the notion of the "social death" of lepers (Rubini & Zaio 2009). The fear of contagion led to strict measures of isolation, and LAPs were relegated to leprosaria, special hospitals or communities designated to isolate and care for them. These establishments were typically situated outside city walls, often on the outskirts of towns, to reduce the risk of transmission. The inhabitants of these leprosaria were not only physically separated but also socially marginalized, marked by specific clothing or even bells, as required by various medieval regulations, to announce their presence in public and avoid close contact with others. The medical understanding of leprosy was heavily influenced by the teachings of ancient scholars such as Oribasios of Pergamum, whose work was preserved and transmitted to medieval physicians in Western Europe (Prioreschi 1996). Although the condition was recognized as being incurable, various treatments were attempted, mostly ineffective remedies like cauterization of the lesions or frequent bathing, as noted in medical texts from the period. The Salerno Medical School, active in southern Italy from the 9th century, was one of the leading centres of medical knowledge, where leprosy was understood as a complex condition, but a definitive cure remained elusive (Demaitre 2007).

3. *The High and Late Middle Ages: Peak Prevalence*

The 13th and 14th centuries marked the peak of leprosy in medieval Italy (Rubini et al 2012). The spread of leprosy throughout Italy accelerated during the Crusades. The movement of people—soldiers, pilgrims, and traders—across the Mediterranean likely contributed to the transmission of the disease (Mitchell 2011). As a result, leprosaria were established in cities such as Genoa, Venice, and Rome, which became central to the medieval efforts to manage the disease (Massone et al 2012) (Fig. 2). In the 12th and 13th centuries, these institutions became critical in both isolating lepers from the general population and providing them with care, albeit

Fig. 2 Franciscan monks treating victims of leprosy. Miniature from La Franceschina, circa 1474, codex by Jacopo Oddi (15th century). Italy, 15th century. Perugia, Biblioteca Capitolare/DeAgostini/ Getty Images.

rudimentary. The Crusades also prompted the establishment of institutions such as the Order of St. Lazarus, which not only cared for LAPs but also played a military and administrative role in managing the disease, particularly in the Holy Land (Fornaciari & Fornaciari 2019). This order, founded in the 12th century, was instrumental in providing care for LAPs in Jerusalem and the surrounding territories, where the disease was endemic (Cassar 1965). Late medieval Italian society's attitude toward leprosy was ambivalent (Santacroce et al 2021, Rubini & Zaio 2009). While leprosy was seen as a mark of divine punishment, it was also considered a potential path to spiritual redemption. Leprosy affected persons were sometimes viewed as martyrs of sorts, suffering for their sins in ways that could bring them closer to God. Leprosaria reflected the dual nature of medieval attitudes toward the disease. While leprosy was stigmatized as a sign of divine punishment, it was also viewed as a spiritual trial, offering opportunities for redemption. Notably, the Leper Mass, celebrated after the diagnosis of leprosy, symbolized the social death of the afflicted individual, reinforcing their alienation from the rest of society. However, Carole Rawcliffe, in her study of medieval Britain, argues that the Leper Mass was not a widely practiced ritual but rather an infrequent and rare event. She suggests that the significance of this ritual, often portrayed as a common occurrence, may have been exaggerated by later historians, particularly those in the nineteenth century (Rawcliffe 2006, Brenner & Touati 2021). Rawcliffe contends that these historians, influenced by the rising fears of contagion, overstated the level of stigma associated with leprosy in medieval times. Yet, despite these harsh conditions, some LAPs

were able to attain a revered status, especially in religious contexts where their suffering was seen as an embodiment of Christ's own suffering. In some instances, saints such as Francis of Assisi or Louis of France are depicted as embracing LAPs, a sign of the spiritual significance of their affliction (Robinson 1909). As leprosy reached its zenith in the 14th century, its eventual decline in the following centuries. Nonetheless, the legacy of leprosy in medieval Italy left an indelible mark on both the healthcare system and the social fabric, shaping the way in which diseases were managed and how those afflicted by them were treated. The leprosaria, hospitals, and social policies of the time offer a glimpse into the medieval understanding of disease, isolation, and the interplay of medical, religious, and social responses.

4. *Decline of Leprosy in the Early Modern Period*

The decline of leprosy in Western Europe during the early modern period, particularly between the 14th and 15th centuries, is often attributed to a combination of biological and epidemiological factors (Rawcliffe 2006). Initial theories posited that the catastrophic mortality caused by the Black Death of 1348 played a role in reducing leprosy transmission by decreasing the pool of infected individuals (Girard 1975). However, this perspective is now regarded as less influential compared to biological and epidemiological factors such as cross-immunity between tuberculosis and leprosy. Improvements in hygiene and living conditions during this period likely had a limited impact, as significant advancements in sanitation were still centuries away (Fornaciari 2020). In isolated regions, such as Sardinia and Southern Italy, leprosy persisted longer, influenced by local social and cultural factors (Coppola et al 2018). The hypothesis that cross-immunity between *Mycobacterium tuberculosis* and *Mycobacterium leprae* played a significant role has gained considerable attention (Grmek 1985, Sansarricq 1985). The theory of cross-immunity suggests that exposure to tuberculosis could confer partial protection against leprosy. Lurie demonstrated that the tissue response to these pathogens is fundamentally similar, and subsequent studies have shown that individuals affected by tuberculosis appear less susceptible to leprosy (Lurie 1955, Manchester 1984, Donoghue et al 2005). The Bacille Calmette-Guérin vaccine, developed for tuberculosis, has demonstrated varying levels of efficacy in preventing leprosy, further supporting the idea of cross-immunity (Lietman et al 1997). Epidemiological models by Lietman et al. highlighted that the low reproductive rate of leprosy, combined with the increasing dominance of tuberculosis in densely populated urban centers, may have led to the gradual exclusion of leprosy in Europe (Lietman et al 1997). Paleopathological evidence also provides insight: children exposed to tuberculosis often survived initial infections, potentially gaining immunity to leprosy (Manchester 1984). Urbanization and population aggregation, which facilitated the spread of tuberculosis via the respiratory route, likely contributed further to leprosy's decline (Fine 1984, Lechat 1981). These findings align with Chaussinand's earlier works on competitive exclusion between the diseases (Chaussinand 1948, Chaussinand 1966). While the precise role of cross-immunity remains debated, it provides a biologically plausible explanation for leprosy's decline, complementing other factors such as urbanization, population dynamics, and improved living conditions.

5. *The Cultural Weight of Leprosy in Italian Art and Literature*

Throughout Italian history, leprosy has occupied a central place not only in medical and religious discourse, but also in the artistic and literary

imagination, reflecting its profound societal impact. From the medieval period onwards, leprosy came to symbolize both physical suffering and moral decay, serving as a visual and narrative tool to explore themes of sin, redemption, and human fragility. Italian painters of the 14th and 15th centuries, particularly those associated with the Florentine and Tuscan schools, frequently depicted leprous individuals in religious scenes, often placing them at the margins of society or at the feet of saints performing miracles. These images, such as the frescoes in the *Cappella degli Spagnoli* at Santa Maria Novella in Florence—attributed to Taddeo Gaddi or Andrea di Firenze—include detailed portrayals of figures with ulcerated faces, mutilated limbs, and characteristic deformities like claw hands, starkly emphasizing the devastating effects of the disease (Grön 1973). One of the most striking examples is the fresco *The Triumph of Death*, attributed to the School of Giotto and located in the Campo Santo in Pisa. Painted around 1340, this work presents a grim panorama of human mortality and includes a group of visibly leprous figures: some with missing noses, others blind or with amputated limbs (Fornaciari et al 2018). These depictions were not merely documentary but carried heavy symbolic weight, associating physical disfigurement with spiritual impurity or divine punishment. Similarly, in the *Brancacci Chapel* in Florence, Masaccio's *St. Peter and St. John Healing the Sick with Their Shadows* includes a leprous figure with severe facial deformities, situating the miracle of healing within a realistic and deeply human context (Grön 1973, Long 2023). Leprosy also found resonance in religious art as a marker of sanctity and charity. Pietro del Donzello's *La Carità di San*

Fig. 3 : The Sermon on the Mount and Healing of the Leprosy Affected Persons. Cosimo Rosselli, fresco, c. 1481. Sistine Chapel, Apostolic Palace, Vatican City.

Martino and Botticelli's *The Cleansing Sacrifice of the Leper* portray acts of compassion toward the afflicted, emphasizing the Christian duty to care for the most marginalized (Grön 1973). *The Sermon on the Mount and Healing of the Leper* by Cosimo Rosselli, located in the Sistine Chapel, stands out as one of the most clinically accurate artistic representations of leprosy. The depiction of the LAP reflects characteristic features of the disease, including visible skin lesions and deformities, offering a rare and realistic portrayal of a medical condition in Renaissance art (Fig. 3). This attention to clinical detail suggests a direct observation or informed understanding of the disease by the artist. In this vein, the figure of Saint Francis of Assisi holds particular importance: in his *Testament*, Francis recounts how his revulsion toward LAPs transformed into spiritual joy through divine inspiration. His choice to embrace and care for the leprous became a cornerstone of his radical rejection of worldly values and a symbol of divine grace found in the outcasts of society (Francis of Assisi ca. 1226/1999). In literature, the metaphorical and moral implications of leprosy are perhaps most powerfully articulated in Dante Alighieri's *Divine Comedy*. In *Inferno* Canto XXIX, Dante places counterfeiters—those who corrupted the substance of things—in the tenth bolgia of the eighth circle, where they are afflicted by leprosy and other disfiguring diseases. The punishment reflects the medieval concept of *contrappasso*, where the physical degradation of the sinners mirrors the moral corruption of their crimes (Alpert 2024). Leprosy here is not merely a disease, but the outward manifestation of inner rot, a punishment that makes visible the invisible crime of falsification. The theme reappears in Giovanni Boccaccio's *Decameron*, where leprosy, like the plague, underscores the fragility and contingency of human life. The tale of "Poor Heinrich"—originally a German legend retold in Italian sources—recounts the story of a nobleman disfigured by leprosy and abandoned by society, evoking both pity and existential reflection (Alpert 2024, Long 2023). The disease in this context serves as a narrative vehicle to explore social exclusion, the limits of love and loyalty, and the redemptive possibilities of suffering. Leprosy also features in popular religious literature such as miracle stories and *exempla*, where it often functions as a test of Christian virtue. One such story, told by Pietro Cantore, recounts a man who unknowingly hosts a LAP who is later revealed to be Christ in disguise—an allegory of divine judgment and the virtue of charity (Alpert 2024). Similarly, in the *Legenda Aurea*, saints are frequently depicted as healing or embracing lepers, signaling their holiness through proximity to the abject (Voragine 1260/1993). Collectively, these artistic and literary representations reveal how leprosy functioned as a cultural touchstone in Italian society—simultaneously feared and sanctified, repellent and redemptive. Its imagery provided a powerful language to discuss sin, virtue, death, and salvation, embedding the disease not only in the medical history of Italy but also in its moral and spiritual imagination. Far from being a mere historical curiosity, the presence of leprosy in Italy's cultural artifacts testifies to its deep psychological and symbolic resonance across centuries.

6. *Leprosy in Modern Italy*

The modern history of leprosy in Italy reflects a progressive evolution in public health management and medical treatment. Over time, earlier misconceptions and the stigma surrounding leprosy began to diminish, particularly with the advent of modern medicine and scientific advancements. However, the decline in stigma was not immediate nor uniform. For many years, the societal perception

of leprosy remained tied to notions of contagion and isolation, contributing to the suppression and concealment of cases. While some patients actively sought treatment, others avoided medical intervention due to the fear of being stigmatized or forcibly confined. With the gradual disappearance of leprosy from Europe at the end of the sixteenth century, a significant shift in the paradigm of exclusion takes place: leprosaria, once reserved for the contaminated and marginalized bodies of LAPs, begin to house a new figure of the outcast—the madman (Sabia 2024). As Michel Foucault notes, what endures beyond the disease itself are the symbolic values once attached to the LAP—the fear, the alterity, the necessity of isolation. These are now projected onto the mentally ill. The madman thus inherits the role of the ultimate outsider, confined to a separate space—both physical and symbolic—that reinforces his estrangement from societal norms. The establishment of the National Leprosy Register in 1923 marked the beginning of systematic tracking and control efforts (Greco & Galanti 1983). This initiative coincided with the enactment of key legislation, such as the "King Carlo Alberto Leprosy Law," followed by the National Leprosy Act of 1923 and the completion of modern legislation in 1954, which provided compensation to those affected. Unlike in Japan, where patients organized protests against the "Leprosy Prevention Law", no significant movements of protest or resistance by people affected by leprosy were recorded in Italy. In Japan, leprosy patients protested against the "Leprosy Prevention Law" which enforced forced isolation in sanatoriums, even after treatment became available. The Leprosy Prevention Law was ultimately repealed and patients won a lawsuit claiming the law was unconstitutional (Yokota 2014). Specialized centres, like the Genoa Leprosy Institute, were established to offer care and conduct research (Barabino et al 2020). By 1978, the decentralization of health services under the new Italian National Health Service enabled autonomous regions to monitor incidence rates, which declined significantly from 28.2 cases/year in the mid-20th century to 6.3 cases/year by the 1980s (Ricco et al 2019, Greco & Galanti, 1983). Advances in treatment, particularly the introduction of multidrug therapy (MDT) in 1981, significantly improved outcomes by shortening treatment durations and preventing resistance. Historical reliance on sulfone therapy (dapsone), which often spanned a lifetime, was replaced by MDT, incorporating rifampicin and clofazimine, which is now the WHO-recommended regimen (Browne 1965, WHO Guidelines 2018). Historically endemic in Liguria, Sardinia, Puglia, Calabria, and Tuscany, the disease became localized and was progressively eradicated through effective control measures. By 1980, the prevalence dropped to 0.95/100,000 inhabitants, with a growing proportion of cases being imported, particularly from South America and later from Africa and Asia (Massone et al 2012).

7. *From Endemic to Imported: New Challenges in Managing Leprosy in Italy*

Leprosy in Italy has undergone significant changes over the decades, characterized by a reduction in autochthonous cases and an increase in imported ones. Since the 1980s, the epidemiology of leprosy in Italy has shifted markedly, with most cases now reported among immigrants from countries where the disease remains prevalent, such as Africa, Asia, and Latin America (Ricco et al 2019). According to the WHO, Italy recorded 35 cases of leprosy between 2005 and 2022, primarily involving individuals from India, Bangladesh, and other Asian countries (WHO Global Health Observatory Data

Repository, 2024). Data from the Italian Society for Hansenology (SIHAN) indicate an average of 9.5 to 9.8 new cases per year from 1970 to 2006. However, the actual prevalence of leprosy in Italy may be underestimated due to underreporting (Noto 2006). The demographic profile of leprosy patients has also shifted. Between 1925 and 1980, most cases involved men (59.0% to 69.5%) with a mean age between 36.5 and 37.7 years (Massone et al 2012). From 2003 onward, most cases have been reported among migrants, with 67.0% to nearly all cases involving individuals with a migration background, including refugees or individuals with irregular immigration status (26.1%) (Beltrame et al 2020, Ricco et al 2019, Massone et al 2012, Maritati & Contini 2016, Asperges et al 2024). By 2007, 47.8% of cases involved foreign-born patients. Italian-born patients now tend to be older, with a mean age of 39.7 years, and 34.8% aged 65 or older (Massone et al 2012). Geographically, leprosy remained endemic in certain areas, such as Northern Tuscany, Eastern Sicily, Calabria, Puglia, and Liguria, until 1980. Recently, new hotspots have emerged in metropolitan areas like Milan, primarily due to cases imported from high-risk countries (Beltrame et al 2020, Ricco et al 2019). Historically, South America was the largest source of imported cases (36.1% from 1920 to 1980), but this has shifted to countries in Asia and Africa, including Bangladesh, India, Nigeria, and Sudan (Ricco et al 2019, Massone et al 2012). Despite this trend, rare autochthonous cases are still occasionally reported in Italy (Cusini 2017). Official statistics often fail to capture the true number of cases, as many migrants avoid seeking medical attention due to stigma, discrimination, or fear of repercussions related to their immigration status (Beltrame et al 2020). This contributes to significant delays in diagnosis, with cases often identified only in advanced stages. For instance, multibacillary leprosy, which is highly infectious and challenging to treat, constitutes a large proportion of diagnosed cases. Delays of 2 to 20 years between symptom onset and diagnosis are reported in 52.2% of cases, even for multibacillary forms. Although leprosy is no longer endemic in Italy and autochthonous cases have disappeared, stigma remains a persistent burden for those affected. Two facilities stand as powerful reminders of Italy's recent past: a center in Genoa and, most notably, the still-active leprosarium in Gioia del Colle, Apulia (la Stampa 2008). Hidden among the countryside and originally established in 1958, the Gioia del Colle colony remains the only residential care facility of its kind in the country. For some patients, the social stigma of leprosy has led to lifelong isolation—even decades after effective treatment. Physicians there recount the story of a man who, at the end of his life, asked to be transferred to a general hospital ward to hide his diagnosis from relatives he had never met. Others speak of women who spent years hugging a pillow at night, imagining it was the child they were not allowed to raise. These personal accounts underscore how deeply entrenched stigma can be (la Stampa 2008). Even today, industrial laundries refuse to wash bedding from the colony out of fear that their business might suffer, despite the near-zero risk of transmission and the fact that no healthcare worker there has ever been infected—not even when the center housed 250 patients. While new medical treatments, especially MDT, offer the promise of full recovery and reintegration into society, many patients—particularly the older generation—continue to live with the psychological scars of exclusion and shame. Their stories serve as a stark reminder that the struggle against leprosy is not only medical, but also social

and emotional. Acknowledging their voices is essential to understanding the full legacy of the disease in Italy.

8. *Conclusion*

The history of leprosy in Italy underscores the dynamic interplay between health, society, and migration. From its ancient roots to its near eradication, the disease's trajectory reflects broader trends in public health and societal change. While leprosy no longer poses a significant threat to the native population, its persistence among migrants highlights the need for vigilance and proactive measures. By integrating historical insights with modern public health strategies, Italy can continue to address the challenges posed by this ancient disease. Despite remarkable progress in the biomedical management of leprosy, its psychological and social ramifications remain deeply entrenched. The persistence of over 100 discriminatory laws globally, as of 2023, highlights how legal frameworks continue to reinforce stigma and exclusion. Beyond legislation, societal misconceptions and deeply rooted prejudices exacerbate the emotional burden faced by those affected (Singh et al 2025). Depression, anxiety, low self-esteem, and reduced quality of life are disproportionately common among leprosy patients and their families, often driven not solely by the disease but by the social responses to it (Somar et al 2020). Stigma operates on multiple levels—from personal to structural—demanding a coordinated, multi-layered approach to intervention. While community-based mental health support, patient education, and interpersonal strategies offer vital tools for resilience and reintegration, broader systemic reforms are essential. The medical community, policymakers, and local leaders must work in concert to dismantle discriminatory practices, foster understanding, and restore dignity to those affected. Only through such comprehensive action can we truly address the enduring psychosocial impact of leprosy and move towards a future free from stigma and discrimination.

References

1. Alpert JS (2024). Leprosy in literature and art: The covenant of water. *Am J Med.* **137(7**): 559–560.
2. Aridon P, Ragonese P, Mazzola MA et al (2010). Leprosy: report of a case with severe peripheral neuropathy. *Neurol Sci.* **31(1**): 75–77.
3. Asperges E, Bagnarino J, Ancarani C et al (2024). A case of leprosy in a nonendemic country. *Int J Infect Dis.* **143**: 107004.
4. Barabino G, Agnoletti AF, Parodi A (2020). Genoa and leprosy: from the Middle Ages to the present. *G Ital Dermatol Venereol.* **155(3**): 346–348.
5. Belcastro MG, Mariotti V, Facchini F et al (2005). Leprosy in a skeleton from the 7th century necropolis of Vicenne-Campochiaro (Molise, Italy). *Int J Osteoarchaeol.* **15(6):** 431–448.
6. Beltrame A, Barabino G, Wei Y et al (2020). Leprosy in refugees and migrants in Italy and a literature review of cases reported in Europe between 2009 and 2018. *Microorganisms.* **8(8):** 1113.
7. Bennett R (1887). Diseases of the Bible. London: Religious Tract Society; pp.19–37.
8. Brenner E, Touati FO (2021). Leprosy and identity in the Middle Ages : From England to the Mediterranean. Social Histories of Medicine Series. Vol 35. Manchester University Press, https://doi.org/10.7765/9781526127426. Available from: https://www.manchesterhive.com/display/9781526127426/9781526127426.xml
9. Britton WJ, Lockwood DN (2004). Leprosy. *Lancet.* **363(9416**): 1209–1219.
10. Browne SG (1965). Treatment of leprosy with B663: appraisal of the pilot trial after three years. *Lepr Rev.* **36**: 13–15.
11. Browne SG (1975). Some aspects of the history of leprosy: the leprosie of yesterday. *Proc R Soc Med.* **68(8**): 485–493.

12. Cassar P (1965). The medical history of Malta. Wellcome Historical Medical Library, London. p.210.
13. Chaussinand R (1948). Tuberculose et lèpre, maladies antagoniques. *Int J Lepr.* **16**: 431–438.
14. Chaussinand R (1966). Quelques remarques concernant la théorie de l'antagonisme entre tuberculose et lèpre. *Int J Lepr.* **28**: 484–485.
15. Coppola M, van den Eeden SJF, Robbins N et al (2018). Vaccines for leprosy and tuberculosis: Opportunities for shared research, development, and application. *Front Immunol.* **9**: 308.
16. Cusini M (2017). A case of autochthonous leprosy in an elderly Italian patient living in Milan province with peculiar clinical presentation. *J Am Acad Dermatol.* **76(6**): AB3.
17. Danielssen DC, Boeck CW (1847). Om Spedalskhed. Trykt i Prahls Lithographs.
18. Demaitre L (2007). Leprosy in premodern medicine. Johns Hopkins University Press, Baltimore. pp.220–223.
19. Donoghue HD, Marcsik A, Matheson C et al (2005). Co-infection of *Mycobacterium tuberculosis* and *Mycobacterium leprae* in human archaeological samples: a possible explanation for the historical decline of leprosy. *Proc Biol Soc.* **272(1561**): 389–394.
20. Fine PE (1984). Leprosy and tuberculosis - an epidemiological comparison. *Tubercle*. **65**: 137-153.
21. Fornaciari A, Gaeta R, Giuffra V (2018). Leprosy in the Pisan fresco "Triumph of Death" (1336-1341). *J Infect.* **77(1**): 75-81.
22. Fornaciari G (2020). Origine e diffusione della lebbra in Europa. *Atti Accad Lancisiana.* **64(3):** 226–232. Available from: http://www.attidellaaccademialancisiana.it/uploads/allegati_articolo/Fornaciari%20220920.pdf
23. Fornaciari G, Fornaciari A (2019). L'ordine degli Ospitalieri e la cura della lebbra nel Medioevo. In: Tuitio fidei et obsequiem pauperum (Benedetti L, Cecchini BM, Gemignani M, Rossi TM, editors). Viareggio: Edizioni La Villa; pp.51–64. Available from: https://arpi.unipi.it/handle/11568/1047803
24. Galen C. De compositione medicamentorum per genera. Available from: http://www.poesialatina.it/_ns/greek/testi/Galenus/De_compositione_medicamentorum_per_genera_libri_VII.html.
25. Girard G (1975). Quel fut le sort des lépreux au cours de la pandémie pesteuse du Moyen Age (1348–1350). *Bull Soc Pathol Exot.* **68**: 33–37.
26. Greco D, Galanti MR (1983). Leprosy in Italy. *Int J Lepr.* **51(4**): 495-499.
27. Grmek MD (1985). Le malattie all'alba della civiltà occidentale. Il Mulino,Bologna. p.298.
28. Grön JK (1973). Leprosy in literature and art. *Int J Lepr.* **41(1**): 86–92.
29. Grzybowski A, Nita M (2016). Leprosy in the Bible. *Clin Dermatol.* **34(1**): 3–7.
30. Kaplan DL (1993). Biblical leprosy: an anachronism whose time has come. *J Am Acad Dermatol.* **28(3**): 507–510.
31. La Stampa "Noi lebbrosi d'Italia" La Stampa 02 May 2008, accessed on 02.05.2025 https://www.lastampa.it/cronaca/2008/05/02/news/noi-lebbrosi-d-italia-1.37107164/
32. Lechat MF (1981). The torments and blessings of the leprosy epidemiometric model. *Lepr Rev.* **52 Suppl 1**: 187–196.
33. Lietman T, Porco T, Blower S (1997). Leprosy and tuberculosis: The epidemiological consequences of cross-immunity. *Am J Public Health.* **87(12**): 1923–1927.
34. Long V (2023). Dermatology and the visual arts: more than meets the eye. *Clin Dermatol.* **41(5**): 657–660.
35. Lurie MB (1955). A pathogenetic relationship between tuberculosis and leprosy: the common denominators in the tissue response to mycobacteria. In: Ciba Foundation Symposium on Experimental Tuberculosis. Little Brown, Boston, pp340–343.
36. Manchester K (1984). Tuberculosis and leprosy in antiquity: an interpretation. *Med Hist.* **28(2):** 162–173.

37. Maritati M, Contini C (2016). A case of leprosy in Italy: a multifaceted disease which continues to challenge medical doctors. *J Immigr Minor Health.* **18(2**): 490–493.
38. Massone C, Brunasso AM, Noto S et al (2012). Imported leprosy in Italy. *J Eur Acad Dermatol Venereol.* **26**: 999–1006.
39. Mitchell PD (2011). The spread of disease with the crusades. In: Between text and patient. (Nance B, Glaze EF, editors). SISMEL, Florence, pp309–330.
40. Noto S (2006). Epidemiologia della lebbra. Bologna: Scuola Follereau AIFO; 2006. Available from: http://www.liber-rebil.it/wp-content/uploads/2012/01/lebbra-.pdf
41. Nunzi E, Massone C (2012). Leprosy: A Practical Guide. 1st Edition, Springer; Berlin/Heidelberg, Germany.
42. Pottie K, Mayhew AD, Morton RL et al (2017). Prevention and assessment of infectious diseases among children and adult migrants arriving to the European Union/European Economic Association: A protocol for a suite of systematic reviews for public health and health systems. *BMJ Open.* **7:** e014608
43. Prioreschi PA (1996). History of Medicine: Byzantine and Islamic medicine. Horatius press, pp. 1–49.
44. Ravindra K, Sugareddy TR, Ramachander T (2010). Coexistence of borderline tuberculoid hansen's disease with tuberculosis verrucosa cutis in a child—a rare case. *Indian J Lepr.* **82**: 91–93.
45. Rawcliffe C (2006). Leprosy in Medieval England. Boydell Press, Woodbridge, UK.
46. Ricco M, Vezzosi L, Balzarini F et al (2019). Epidemiology of leprosy in Italy (1920–2019): A comprehensive review on existing data. *Acta Biomed*. **90(3S9)**: 7–14.
47. Robinson P (1909). St. Francis of Assisi. Catholic Encyclopedia. Vol. **6**.
48. Rodrigues LC, Lockwood DNJ (2011). Leprosy now: epidemiology, progress, challenges and research gaps. *Lancet Infect Dis.* **11**: 464–470.
49. Rubini M, Zaio P (2009). Lepromatous leprosy in an early mediaeval cemetery in Central Italy (Morrione, Campochiaro, Molise, 6th-8th century AD). *J Arch Sci.* **36(12**): 2771–2779.
50. Rubini M, Dell'Anno V, Giuliani R et al (2012). The first probable case of leprosy in Southeast Italy (13th-14th Centuries AD, Montecorvino, Puglia). *J Anthropol.* **2012(1**): 262790.
51. Rubini M, Zaio P, Roberts C (2014). Tuberculosis and leprosy in Italy: New skeletal evidence. *Homo*. **65(1**): 13-32.
52. Rubini M, Zaio P (2014). Leprosy in Italy: pathological aspects and paleopathological perspectives. Congress of American Anthropologist Association. September 2014.
53. Sabia M (2024). Il folle-animale, il folle-morto, il folle-figura mistica: categorie della diversità nella letteratura di tema manicomiale del Novecento italiano. Paper presented at the conference Contacts and Conflicts. Ways and forms of representation of the other than self. Doctoral conference held in Rome, Italy). Available from: https://iris.uniroma1.it/handle/11573/1700868.
54. Sansarricq H (1965). La lèpre. Ellipses, Paris. Available from: http://leprev.ilsl.br/pdfs/1996/v67n3/pdf/v67n3a18.pdf.
55. Santacroce L, Del Prete R, Charitos IA et al (2021). *Mycobacterium leprae*: A historical study on the origins of leprosy and its social stigma. *Infez Med.* **29(4**): 623-632.
56. Singh S, Narang T, Dogra S (2025). Beating leprosy: Unmasking challenges, ending stigma, & prioritizing mental well-being. *Indian J Med Res.* **161(1**): 1-4.
57. Somar P, Waltz MM, van Brakel WH (2020). The impact of leprosy on the mental wellbeing of leprosy-affected persons and their family members - a systematic review. *Glob Ment Health (Camb).* **7**: e15.
58. Trovato A, Reid A, Takarinda KC et al (2016). Dangerous crossing: Demographic and clinical features of rescued sea migrants seen in 2014 at an outpatient clinic at Augusta Harbor, Italy. *Confl Health.* **10:** 14. doi: 10.1186/s13031-016-0080-y.

59. Voragine J de (1993). The Golden Legend: Readings on the Saints (WG Ryan, Trans.). Princeton University Press. (Original work published 1260).
60. WHO Global Health Observatory Data Repository (European Union). https://www.who.int/data/gho/indicator-metadata-registry/imr-details/47 (Accessed 29 December 2024)
61. WHO-SEARO (2018). Guidelines for the Diagnosis, Treatment and Prevention of Leprosy; WHO-SEARO: New Delhi, India, 2018. Available at https://www.who.int/lep/resources/9789290226383/en/. Last accessed January 04, 2025.
62. Yokota Y (2014). Leprosy and human rights: trends in Japan and in the world. *Nihon Hansenbyo Gakkai Zasshi.* 2014 Dec; **83(3):** 15-9. Japanese.

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