Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

COVID-19 effect on tuberculosis care in Sierra Leone: are we in the recovery phase?

Danilo Buonsenso , Francesco Mariani , Joshua Sorba Biala , Delia Goletti

PII: S2531-0437(22)00255-0
DOI: https://doi.org/10.1016/j.pulmoe.2022.10.008
Reference: PULMOE 1814

To appear in: *Pulmonology*

Received date: 2 July 2022
Accepted date: 18 October 2022

Please cite this article as: Danilo Buonsenso , Francesco Mariani , Joshua Sorba Biala , Delia Goletti , COVID-19 effect on tuberculosis care in Sierra Leone: are we in the recovery phase?, *Pulmonology* (2022), doi: https://doi.org/10.1016/j.pulmoe.2022.10.008

COVID-19 effect on tuberculosis care in Sierra Leone: are we in the recovery phase?

Danilo Buonsenso[1,2], Francesco Mariani[3], Joshua Sorba Biala[4], Delia Goletti[5]

[1] Department of Woman and Child Health, Fondazione Policlinico Universitario A. Gemelli IRCCS, Rome, Italy

[2] Centro di Salute Globale, Università Cattolica del Sacro Cuore, Roma, Italia

[3] Pediatric Resident, Università Cattolica del Sacro Cuore, Rome, Italy

[4]Tuberculosis Unit, Tombo Community Health Centre, Western Rural Area, Sierra Leone.

[5]Translational Research Unit, Department of Epidemiology and Preclinical Research, National Institute for Infectious Diseases-IRCCS L. Spallanzani, Rome, Italy.

Corresponding author: Danilo Buonsenso,
Department of Woman and Child Health and Public Health, Fondazione Policlinico Universitario A. Gemelli IRCCS, Rome, Italy
Largo A. Gemelli 8, 00168, Roma, Italy.
Email: danilobuonsenso@gmail.com
Tel: 0039 063015 4390

More than two years after the beginning of the COVID-19 pandemic, the direct clinical consequences of the global spread of SARS-CoV-2 and the indirect ones related to non-pharmacological interventions and public reactions are better recognized. On one hand, millions of people died or are suffering from long-term sequelae of the disease; on the other, social restrictions and "stay-at-home" mandates had a negative impact on the global economy and probably contributed to an important rise in mental health issues, particularly in young people. In addition, fears of catching SARS-Cov-2 infection in the healthcare settings, or the need of shifting resources from routine health services to COVID-19 emergency responses, had a negative impact on important screening or preventive programs, such as immunization campaigns (1, 2) or detection of new cases of HIV or TB (3).

In particular, TB is still the number-one infectious disease killer in the world with African countries having the highest rate of contagion. The importance of a well-conducted clinical surveillance for this pathology ~~stands~~ rests on the necessity of identifying people with the disease to offer access to treatment early, and to offer preventive therapy to those with latent infection and at higher risk to progress to TB (eg HIV infection or exposed children) (4). In our previous pilot study (5) available

online already in 2020, we evaluated the impact of COVID-19 on active TB screening in the Community Health Post of Tombo, a village of Western Rural Area in Sierra Leone. We compared the number of patients tested with sputum smear and confirmed Acid Fast Bacilli (AFB)-positive during the first 4 months of the year 2020 (January, February, March, April) with the cases reported in 2018 and 2019. Although with the limitations of a retrospective study restricted to a small region, we showed a significant drop of confirmed TB cases in April 2020, the first month of lockdown in Sierra Leone; additionally, the number of TB suspected cases decreased in March and April 2020. This was the first description of a drop of new TB suspected or confirmed cases, which unfortunately was confirmed later by several international studies (6-8). However, as restrictions have lifted with the beginning of vaccinations and public awareness on the transmission routes, our aim in the present study was to assess the potential change of this trend in the setting of Sierra Leone. Therefore, we continued collecting aggregated anonymized data about the number of patients tested for TB and those who tested positive in the Community Health Post of Tombo until April 2022. The study was approved by the authorities for the TB unit of the local health centre (J.S.B.). As shown in Fig.1 the number of patients tested and diagnosed with TB in the first quarter period of 2021 compared to that of 2022 was similar to that recorded in the pre-Covid period. In particular, we tested 119 patients in the first 4 months of 2018 (50 resulted positive, 42%), 224 patients in the first four months of 2019 (58 resulted positive, 25,9%), 132 patients in the first four months of 2020 (40 resulted positive, 30,3%), 122 patients in the first four months of 2021, (65 resulted positive, 53,3%), 168 patients in the first four months of 2022 (60 resulted positive, 35,7%). This evidence, with the constraint of this small and retrospective study, suggests that local TB services in very resource-limited settings are returning to pre-pandemic activity standards and that patients are recovering trust in the health services and seeking medical advice when needed. This has important consequences because if true, we may contain the previously missed TB diagnoses that otherwise can lead to an additional increase of cases in the community and we may lose decades of progress in TB control programs. A similar trend of recovery of outpatient TB services has also been reported by Rodrigues and colleagues in Portugal (9), which reported that TB diagnosis, treatment, and prevention services were only affected during the 1st State of Emergency. However, as Covid-19 cases still keep rising across the globe, given the possible interactions of TB and Covid-19 (reactivation or worsening of TB during SARS-CoV-2 infection, use of steroids during Covid-19) (10), it is of primary importance to further reinforce TB preventive programs globally.

However, despite the positivity of this trend which gives us hope, there is still the need to be vigilant aboutthe problem of facing the need to maintain effective health surveillance and

management of TB programs. Considering what is observed, it is essential to promote and facilitate access to primary care to allow a broader and more accurate screening for TB.

Funding: the study was partially supported by the Italian Ministry of Health, Linea di Ricerca Corrente four.
Conflict of interests: nothing to declare

References:

1- Mariani F, Valentini P, Yamba M, Turay AS, Bulubisi H, Moscato U, Raffaelli F et al. Changes in Childhood Immunizations and Intermittent Preventive Malaria Treatment in a Peripheral, Referral Immunization Center During the First 12 Months of COVID-19 Pandemic in Sierra Leone, Western Africa. Front Pediatr. 2022 Mar 29;10:774281. doi: 10.3389/fped.2022.774281.

2- Buonsenso D, Cinicola B, Kallon MN, Iodice F. Child Healthcare and Immunizations in Sub-Saharan Africa During the COVID-19 Pandemic. Front Pediatr. 2020 Aug 6;8:517. doi: 10.3389/fped.2020.00517.

3- Ong CWM, Migliori GB, Raviglione M, MacGregor-Skinner G, Sotgiu G, Alffenaar JW et al. Epidemic and pandemic viral infections: impact on tuberculosis and the lung: A consensus by the World Association for Infectious Diseases and Immunological Disorders (WAidid), Global Tuberculosis Network (GTN), and members of the European Society of Clinical Microbiology and Infectious Diseases Study Group for Mycobacterial Infections (ESGMYC). Eur Respir J. 2020 Oct 1;56(4):2001727. doi: 10.1183/13993003.01727-2020.

4- Goletti D, Delogu G, Matteelli A, Migliori GB. The role of IGRA in the diagnosis of tuberculosis infection, differentiating from active tuberculosis, and decision making for initiating treatment or preventive therapy of tuberculosis infection. Int J Infect Dis. 2022 Mar 5:S1201-9712(22)00126-6. doi: 10.1016/j.ijid.2022.02.047.

5- Buonsenso D, Iodice F, Sorba Biala J, Goletti D. COVID-19 effects on tuberculosis care in Sierra Leone. Pulmonology. 2021 Jan-Feb;27(1):67-69. doi: 10.1016/j.pulmoe.2020.05.013.

6- Migliori GB, Thong PM, Akkerman O, Alffenaar JW, Álvarez-Navascués F, Assao-Neino MM et al. Worldwide Effects of Coronavirus Disease Pandemic on Tuberculosis Services, January-April 2020. Emerg Infect Dis. 2020 Nov;26(11):2709-2712. doi: 10.3201/eid2611.203163.

7- Migliori GB, Thong PM, Alffenaar JW, Denholm J, Tadolini M, Alyaquobi F, et al. Gauging the impact of the COVID-19 pandemic on tuberculosis services: a global study. Eur Respir J. 2021 Nov 11;58(5):2101786. doi: 10.1183/13993003.01786-2021.

8- Migliori GB, Thong PM, Alffenaar JW, Denholm J, Tadolini M, Alyaquobi F, et al. Country-specific lockdown measures in response to the COVID-19 pandemic and its impact on tuberculosis control: a global study. J Bras Pneumol. 2022 Apr 20;48(2):e20220087. doi: 10.36416/1806-3756/e20220087.

9- Rodrigues I, Aguiar A, Migliori GB, Duarte R. Impact of the COVID-19 pandemic on tuberculosis services. Pulmonology. 2022 May-Jun;28(3):210-219. doi: 10.1016/j.pulmoe.2022.01.015.

10- Visca D, Ong CWM, Tiberi S, Centis R, D'Ambrosio L, Chen B, Mueller J, Mueller P, Duarte R, Dalcolmo M, Sotgiu G, Migliori GB, Goletti D. Tuberculosis and COVID-19 interaction: A review of biological, clinical and public health effects. Pulmonology. 2021 Mar-Apr;27(2):151-165. doi: 10.1016/j.pulmoe.2020.12.012.

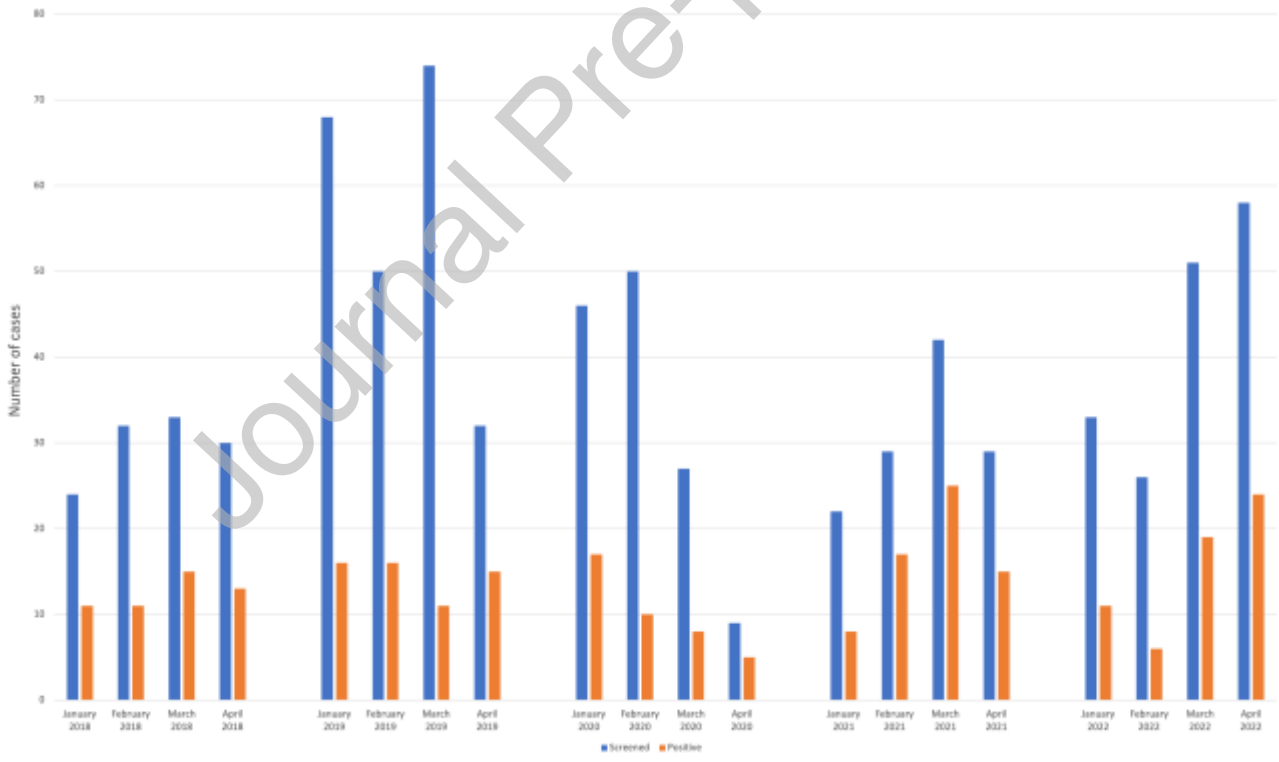

Figure 1 *The number of presumptive TB and confirmed TB cases in Tombo Health Centre, Sierra Leone, in the first months of 2018, 2019, 2020, 2021 and 2022. April 2020, the month of the beginning of the first lockdown in Sierra Leone, was the month with the lowest number of people tested and tested-positive while it is possible to observe a* positive trend in the number of the following two years.