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## Scientific Letter

### COVID-19 Hampered Diagnosis of TB Infection in France, Italy, Spain and the United Kingdom



To the Director,

We are still getting to grip with the impact that COVID-19 pandemic has had on the tuberculosis (TB).<sup>1–3</sup>

The Global Tuberculosis Network (GTN) described the first small cohort of patients with COVID-19 and TB,<sup>4,5</sup> which set the basis for a larger global study.<sup>6</sup> These studies showed that (a) TB can be diagnosed before or after COVID-19, or, quite often, during the same week following radiological examinations and (b) the case fatality rate was rather high (approximately 12%). The evaluation of treatment outcomes of TB of this global cohort and whether there is an interaction is still ongoing as more than half of the patients were still undergoing anti-TB treatment.<sup>6</sup>

The World Health Organization (WHO) in its 2020 Global TB Report<sup>7</sup> predicted, a decrease in TB incidence but increase in TB deaths as a result of the COVID-19 pandemic. In its 2021 Global Report, WHO confirmed the increase in deaths, decrease in notifications, as well as a reduction in access to TB Infection (TBI) treatment. In 2020, 7 million contacts of bacteriologically confirmed pulmonary TB patients were reported to WHO by 126 countries.<sup>8,9</sup> Of these, 3.9 million (55%) in 118 countries were reported as evaluated for both TBI and TB. These numbers were lower than those reported in 2019, by 29% and 31%, respectively.<sup>8,9</sup>

A global GTN Study<sup>10</sup> involving 43 TB centres located in 19 countries in all continents provided further evidence; a decrease in TB disease cases diagnosed: from 32,898 in 2019 to 16,396 in 2020, with reductions in other related metrics during the same period (TB patients discharged from hospital, managed as outpatients, diagnosed with multi-drug resistant TB, etc).

Overall, more information is available for TB disease than for TBI.

Management of TBI is one of the core interventions in the pursuit for TB elimination, as it is focused in preventing the occurrence of active disease and further transmission.<sup>11</sup>

Information on the effects of COVID-19 on diagnosis of TBI in low TB incidence countries is very limited.

The aim of this study was to compare the number of individuals diagnosed with TBI and the number of TBI tests performed in 2020 vs 2019 in 4 low TB incidence European countries: France, Italy, Spain, and the United Kingdom.

Invitations were sent to the GTN TB reference centres previously involved, based on a standardized form (8 in Spain, 5 in Italy and one each for France and the UK).<sup>10</sup>

The coordinating centre and the participating centres had ethics clearance in accordance with their institutional regulations.<sup>10</sup> Data were collected from 1 January 2019 to 31 December 2020 using a standardized form.

The number of new TBI diagnoses and the number of tests performed to diagnose TB infection (tuberculin skin test and interferon- $\gamma$  release assays) were collected monthly.

The results are summarized in [Figs. 1 and 2](#).

Overall, 2397 individuals were diagnosed with TBI in 2019 and 1484 in 2020, as follows: in France 213 and 106, in Italy 1649 and 1023, in Spain 278 and 164 and in the UK 257 and 191, respectively.

The total number of TBI diagnostic tests administered was 16,154 in 2019 and 12,168 in 2020: in France 553 and 341, in Italy 7263 and 5587, in Spain 1323 and 708 and in the UK 7015 and 5532, respectively.

In France, from March 2020 onward the number of individuals diagnosed with TBI was lower than those of 2019 with a marked decline in spring 2020 ([Fig. 1](#)). In October 2020 the number of TBI tests administered had surpassed 2019 figures ([Fig. 2](#)).

In Italy the number of individuals diagnosed with TBI was reduced in spring and autumn 2020 ([Fig. 1](#)), the period corresponding with the first 2 COVID-19 waves, although in autumn 2020 (September and October) more TBI tests were performed than in 2019 ([Fig. 2](#)).

In Spain, a marked decline in the number of individuals diagnosed with TBI was evident during the spring 2020, although in June more diagnoses were done in 2020 than in 2019 ([Fig. 1](#)). The number of TBI tests performed in 2020, with the only exception of June, never exceeded those performed in 2019 ([Fig. 2](#)).

In the UK the marked spring-time decline (first COVID-19 wave) in individuals diagnosed was also present, although more diagnoses were performed in some months of 2020 when compared to 2019 (January, August, September and December) ([Fig. 1](#)). The number of TBI tests performed in 2020 exceeded those performed in 2019 only in February and September ([Fig. 2](#)).

In summary, a marked decline in TBI tests performed and diagnoses was observed in 2020 compared with 2019 in all 4 of the low TB incidence European countries evaluated. This decline corresponded to the stringent lockdown measures and redeployment of healthcare services instituted by these countries during the first COVID-19 wave in 2020.<sup>12</sup> A tentative effort to diagnose TBI more aggressively ([Fig. 2](#)) was performed in autumn 2020, with slight differences relating to the different application of lockdown measures adopted by these countries and the differing characteristics of the reference centres participating.

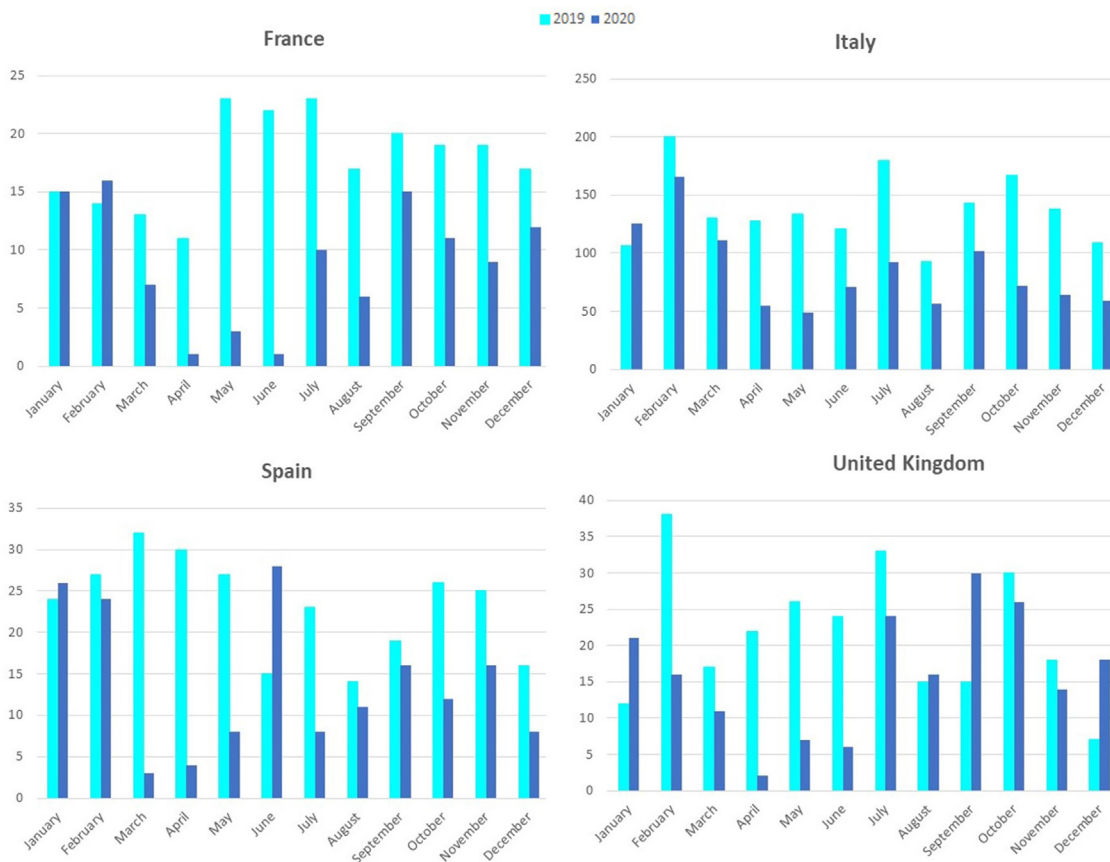


Fig. 1. Newly diagnosed individuals with tuberculosis infection 2019 vs. 2020, France, Italy, Spain and United Kingdom.

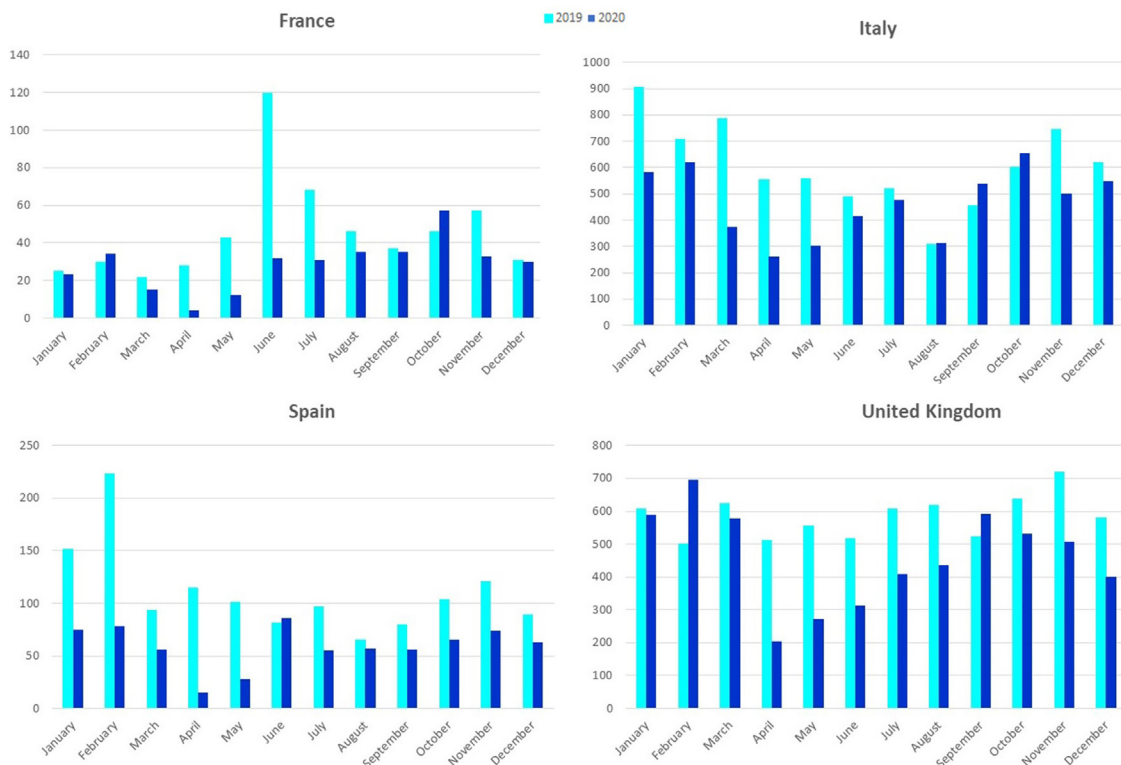


Fig. 2. Number of tests for tuberculosis infection 2019 vs. 2020, France, Italy, Spain and United Kingdom.

The results of this study show the disruption that COVID-19 had on TB services in 2020 (particularly during the first wave, in the absence of vaccines). The disruption included redeployment of human and financial resources to combat COVID-19, implementation of strict lockdown and social distancing measures, stock out of laboratory reagents, and patients fear of accessing health services or access severely restricted or denied due to redeployment of services and lockdown. This phenomenon was more evident for TBI than TB disease, where TBI was deprioritised in favour of managing TB and COVID-19 cases. Lockdowns and the use of masks may have reduced transmission of TB but conversely there may have been increased circulation of *Mycobacterium tuberculosis*, within confined spaces such as households. Because of the disruption of TB services occurred in 2020, more needs to be done to diagnose and treat TBI so that we do not see more TB cases in the years to come, and we can resume the downward trend in TB incidence to elimination.

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### Conflict of interest

The authors declare to have no conflict of interest directly or indirectly related to the manuscript contents.

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