

**LETTER**

**COVID-19: ensuring continuity of TB services in the private sector**

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Dear Editor,

As the COVID-19 pandemic unfolds, a major concern is continuity of essential services for other infectious diseases and chronic health conditions.<sup>1</sup> COVID-19 is expected to have a significant impact on TB elimination efforts and the Stop TB Partnership predicts an additional 6.3 million new cases of TB and 1.4 million TB-related deaths by 2025.<sup>2</sup> Pakistan has the fifth largest global burden of TB, and in response to COVID-19 a lockdown was imposed on all commercial and economic activity on 26 February 2020. TB services were severely disrupted, in particular in the private sector, which provides over 70% of healthcare delivery. This threatened to undermine recent gains in private-sector engagement and TB elimination efforts.

To ensure continuity of essential TB services, we obtained waivers from provincial and district health authorities for continued operation of 51 specialised diagnostic and treatment centres for TB, known as *Sehatmand Zindagi* (SZ). These centres are part of The Indus Hospital (TIH) network, which received a Global Fund-supported grant for scale-up of TB case detection in the private sector. In several districts and major cities, these centres were among the few private-sector TB treatment facilities that remained functional.

Each facility was designed to meet airborne infection control (AIC) standards for TB, which has allowed continued operations during the COVID-19 pandemic. These standards include large open fronts, exhausts for ventilation and air circulation, ultraviolet germicidal irradiation (UVGI) lights and designated sputum expectoration areas. To further reduce exposure during the current crisis, staff were rotated in shifts, operating hours were reduced, N-95 masks were provided for routine use, physical distancing was enforced in waiting areas and visitors were also provided surgical masks. The centres were also given additional disinfectant materials, and regular hand-washing and cleaning of surface areas was encouraged.

Because of the perceived risk, staff were initially reluctant to provide services at the centres, but internal communication and messaging using social media played a critical role in supporting staff morale and instilling a sense of pride in their work. Social media posts highlighted the efforts of staff on World Health Day and Labour Day, and individual successes were recognised and widely circulated.<sup>3</sup> Infographics for basic infection control and hygiene guidelines were also shared with staff,<sup>4</sup> and managers and supervisors ensured strict enforcement of these measures. As a result, routine services were continued across all 51 facilities with minimal disruption.

An immediate priority was to ensure that the supply and uptake of medication for people with TB remained unaffected. Existing protocols and procedures were adapted from guidelines on service delivery to TB patients during COVID-19 by the Stop TB Partnership and TIH.<sup>5</sup> People already enrolled for TB treatment and those newly registered were provided with 2 months' medication to reduce the frequency of visits and risk of exposure. People providing treatment support (who were under 50 years of age) were asked to visit centres on behalf of people with TB. Visits were scheduled at different times to ensure that there were no more than four visitors present at any one time. To further reduce exposure, counsellors and medical officers provided counselling by phone for all people enrolled for treatment. A helpline was also provided in case of emergencies, reminders for adherence to medication and reporting of early signs of adverse reactions. Some patients were supported through home delivery of medicine by community workers free of cost. When contact could not be established with patients, partnering private general practitioners (GPs) (who referred people with TB to the centres) were also engaged and their clinics were used as satellite treatment sites for delivery of TB medication.

Data management was carried out using electronic medical records software to track patient diagnostic testing and treatment. The software generates automated reports for due drug-

collections based on registration dates. A total of 10,063 patients had been registered for TB treatment during the period from September 2019 to April 2020, of whom 356 (3.5%) had died during treatment (Table) and 405 (4%) had transferred out to other sites (including for second-line treatment). A total of 7,099 patients received TB drugs during the lockdown (76.3% of those due for drug collection). Variations were observed between regions, with urban Sindh (including Karachi) reporting the highest drug collection rate (84.6%) and urban Khyber Pakhtunkhwa (Peshawar) reporting the lowest drug collection rate (55.3%). This variation was attributable to the absence of inter-city public transport: while the majority of patients in Karachi reside within the city, other urban centres receive a large number of referrals from smaller towns and villages. In Peshawar, an additional constraint was the need to provide services to Afghan patients due to border closures. Some large rural districts also proved challenging, including Tharparkar, a sparsely populated and impoverished district spread over 19,500 km<sup>2</sup>. Efforts are being made to transfer remaining patients to operating TB facilities closer to their homes and to increase delivery of medication through community workers.

With the easing of lockdown measures, we now anticipate a surge in COVID-19 and TB cases to impact on the private sector. Given the overlap in symptoms of COVID-19 and TB, it is likely that many people with COVID-19 will visit TB facilities over the coming months. The health and safety of health care workers is a priority and urgent approvals from the Global Fund were obtained to reprogramme funds to provide personal protective equipment (PPE) for staff. Private donors continue to be approached to support the provision of PPE for private GPs, who are on the front line in the health system, and the main source of TB referrals from the community.

Recent studies report on the emergence of COVID-19 and TB co-infection,<sup>6-8</sup> signifying the need to integrate screening and testing services for both conditions to prevent mortality. In addition, to ensure that TB care services are maintained, it is vital that people with suspected COVID-19 are also tested, traced and quarantined. Private sector TB centres provide the ideal setting to carry out such service integration in low-income countries. Strengths of this approach include the staff familiarity and expertise in dealing with respiratory diseases, experience in contact tracing, availability of chest X-rays and GeneXpert (Cepheid, Sunnyvale, CA, USA) systems and the AIC design of centres. In addition, an established network of referral providers for TB in the private sector can be leveraged to support case identification of COVID-19. Private primary healthcare facilities can also be equipped with pulse oximetry and low-cost oxygen

support systems in case public sector hospitals struggle to meet the case load of COVID-19 patients.<sup>9</sup>

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**Table** Overview of people enrolled for TB treatment and drug collection rates during COVID-19 pandemic lockdowns (April 2020) with a comparison to pre-COVID period (January 2020) at 51 TB diagnostic and treatment centres in the private sector, Pakistan

	People with TB enrolled for treatment in April 2020		Died during treatment		Transferred out		People with TB due for drug collection in April 2020		People with TB receiving drugs* in April 2020		Proportion of patients receiving drugs* in January 2020
	<i>n</i>		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	%
<b>Sex</b>											
Male	5,805		240	4.1	232	4.0	5,333	91.9	4,050	75.9	90.0
Female	4,254		116	2.7	173	4.1	3,965	93.2	3,047	76.8	90.5
Transgender	4		0	0.0	0	0.0	4	100.0	2	50.0	100.0
<b>Age, years</b>											
<15	829		14	1.7	19	2.3	796	96.0	597	75.0	92.0
15–34	3,618		50	1.4	142	3.9	3,426	94.7	2,685	78.4	90.8
35–54	2,800		98	3.5	133	4.8	2,569	91.8	1,953	76.0	90.5
>55	2,816		194	6.9	111	3.9	2,511	89.2	1,864	74.2	88.7
<b>Type of TB</b>											
MTB+	4,398		150	3.4	210	4.8	4,038	91.8	3,137	77.7	89.4
Clinical	4,293		166	3.9	138	3.2	3,989	92.9	3,016	75.6	92.0
EPTB	1,372		40	2.9	57	4.2	1,275	92.9	946	74.2	86.8
<b>Region</b>											
Sindh (urban)	3,593		95	2.6	222	6.2	3,276	91.2	2,771	84.6	90.5
Sindh (peri-urban/rural)	1,372		85	6.2	47	3.4	1,240	90.4	972	78.4	82.3
Punjab (urban)	2,214		70	3.2	47	2.1	2,097	94.7	1,546	73.7	94.7
Punjab (peri-urban/rural)	1,657		70	4.2	88	5.3	1,499	90.5	1,126	75.1	93.5
KPK (urban)	661		9	1.4	1	0.2	651	98.5	360	55.3	62.2
KPK (semi-urban/rural)	566		27	4.8	0	0.0	539	95.2	324	60.1	96.4
<b>Total</b>	<b>10,063</b>		<b>356</b>	<b>3.5</b>	<b>405</b>	<b>4.0</b>	<b>9,302</b>	<b>92.4</b>	<b>7,099</b>	<b>76.3</b>	<b>90.2</b>

\*Proportion of people with TB receiving drugs among people due for drug collection.

MTB+ = *M. tuberculosis*-positive; EPTB = extrapulmonary TB; KPK = Khyber Pakhtunkhwa.