

Multidrug resistant TB (MDR-TB) and COVID19

Lockdown and COVID-19: nearly 400,000 drug-resistant patients at risk

Due to Coronavirus, more than three billion people in almost 70 countries and territories have been asked to stay at home, equivalent to more than a third of the world's population. These countries include the highest MDR-TB burdened countries: China, India, Indonesia, South Africa, Kenya, Russian Federation, Thailand, Ukraine and Peru – leading to roughly 70% of all people with DR TB (300,000 people) being caught in lock-down.

These MDR-TB patients are currently at risk of interrupting their treatment. If we don't get them back on treatment quickly, there is a huge risk of mortality and worsening of drug-resistance.

Key Messages for high MDR-TB burdened countries:

- 01 Ensure ongoing DR-TB and TB services continue;
- 02 Keep enough TB medication in stock for people who are already on treatment. Actively follow up with people who have stopped TB treatment. Keep enough medication in stock;
- 03 Continue testing for TB, including drug sensitivity testing (DST);
- 04 If you use GeneXpert for COVID tests, also run TB-testing in parallel with the same machine (for example day/ night shifts);
- 05 Switch to all-oral regimens, since injectables are simply not workable in this crisis;
- 06 Since oral regimens will require second-line drugs like Bedaquiline (BDQ), and since India who is producing the drugs, is in an extended lockdown, the whole world needs to worry about disruption of drug supply and shortages in the coming months;
- 07 Countries could advocate with the Indian government to resume production soon and give priority to TB medication.

Supporting DR-TB Patients in time of COVID-19

Treating drug-resistant TB poses particular difficulties within the COVID-19 pandemic, aggravated by varying levels of lockdown. Patients with drug-resistant TB need regular follow-up visits to a doctor as the drugs have severe side effects. Patients need to take about ten drugs, sometimes including injections, which can be intimidating and requires them to feel comfortable and confident about the treatment.

Sheetal Pawar, a multidrug resistant tuberculosis patient, had sufficient medicines, but getting someone to administer a daily Amikacin injection, became impossible. She found a private clinic in Farid Nagar where she would get her Amikacin injection, but found it closed during the lockdown. She then walked to the doctor's house to get injected, but he refused in the fear that she may catch an infection, and asked her to visit a government hospital, Pawar claimed. Two other hospitals under the Municipal Corporation of Greater Mumbai also allegedly denied her treatment. Staff at the TB centres claimed doctors were deployed on Covid-19 duty, she said. *"Missing even a single dose meant risk of developing resistance to the drug,"* Pawar said, adding that the anxiety added to her ill health. She said a van driver overheard her conversations with the hospital staff and put her in touch with a TB volunteer group, which then helped her get access to medicines.

With 70% of people with drug-resistant TB in lockdown, high MDR-TB countries are urgently advised to roll out the use of shorter oral DR-TB treatment*. Patients will be given several months' supply for use at home, and can self-administer with support of video/online counselling. Injectables and hospital supported treatment in the time of COVID-19 is likely very difficult for TB patients

“In the context of the COVID-19 pandemic, we need to pay special attention to people affected by TB, especially those with multidrug-resistant tuberculosis. On the one hand, they are at risk of coronavirus infection, and on the other, at risk of discontinuation of treatment due to quarantine restrictions and the situation in countries with the provision of patients with anti-TB drugs. In addition, patients with MDR-TB were left with almost no social support, which repeatedly proved its effectiveness in adherence to treatment and effective completion of treatment. It is also worth focusing on ensuring the proper diagnosis of TB, which has significantly deteriorated in recent months due to measures to overcome COVID-19 (absence or problems with the logistics of some diagnostic drugs, transport restrictions, strict access to medical facilities, etc.). We need to be very careful and vigilant about the possible spread of multidrug-resistant TB in such a way that one huge problem does not lead to an even bigger one.”

Interruptions of ongoing DR TB treatment in COVID-19 pandemic and lockdown

Following the general predictions of disruptions described by **Madhu Pai in Forbes**, we see many interruptions play out for the worst for drug-resistant patients. Every time treatment is interrupted, we risk negative outcomes such as recurrence of the disease and even mortality. Every time a patient starts and stops treatment, he or she risks drug resistance.

- A Replacement and deprioritization of DR-TB testing:** Many countries spent years building laboratory networks for TB testing, and installed GeneXpert machines to test for Rifampin resistance. This is an asset for COVID-19 testing, but should not come at the cost of TB testing in the endemic countries. There is a risk of MTB/RIF, the only drug sensitivity test (DST) that is widely used, getting replaced, which will greatly reduce global DR-TB detection. “Focus on production of COVID-19 tests destabilizes HIV and TB test production”, said **Catherine Boehme**.
- B Delayed TB diagnosis:** Almost every country is reporting a drop in lab-testing and case notification, India showing a **drop of 80%** in TB notification and is risking an **acute health crisis** in a few months. After the lockdown lifts, people will mix, seek care for TB symptoms after many weeks of delay—and might have advanced, smear-positive disease by then—and there is a likelihood of increased community transmission at that time, not just intra-household transmission (**Caravan**).
- C Reduced hospital wards:** As more wards are being utilized for COVID-19, this is heavily affecting MRD-TB patients. As we saw early on in the pandemic in South Korea, routine TB care has been disrupted especially in hospital care. Many countries around the world are now reporting that hospital wards are being converted into COVID-19 wards, while people diagnosed with DR-TB are being sent home due to lack of space.
- D Risk of interrupted Drug supply:** Global drug supply is at risk with manufacturing in India being under a risk of **export ban** due to the lockdown situation. Countries around the world are depending on India’s drug manufacturing, and a drug shortage would have disastrous effects for all TB patients.
- E Diversion of human and medical resources:** This is leading to poor quality of TB care, resulting in treatment interruptions and inadequate follow-up. Patient support is reported to be minimal and in addition there is an increased risk of spreading DR-TB to family members, the latter being exacerbated by countries in lockdown and families sharing small spaces together.
- F Risk of treatment discontinuation :** The COVID-19 pandemic is making it increasingly hard for TB patients to visit clinics and receive prescribed drugs, with barriers to transport in countries in lockdown exacerbating the problem. ‘At 27%, India has the world’s largest TB load. ‘Lack of adherence to the drug regimen was 15-17%. COVID-19 has spiked it to 40% in Mumbai,’ says Medical Research Foundation director **Nerges Mistry**.

* The latest evidence-based guidelines for the treatment of MDR/RR-TB were published by WHO in 2018, which were later disseminated as the consolidated [WHO guidelines on drug-resistant TB treatment](#). Since then, new evidence in various areas has become available, prompting WHO to initiate a guideline development process to rapidly and effectively assess these interventions and inform countries on their use and considerations for introduction. The [updated WHO drug-resistant TB guidelines](#) focus on the use of a modified all-oral shorter MDR/RR-TB regimen (i.e. less than 12-month duration); use of a novel regimen combining pretomanid, bedaquiline and linezolid; use of bedaquiline for more than 6 months and its concurrent use with delamanid. These guidelines are supported by [Frequently Asked Questions \(FAQ\)](#).