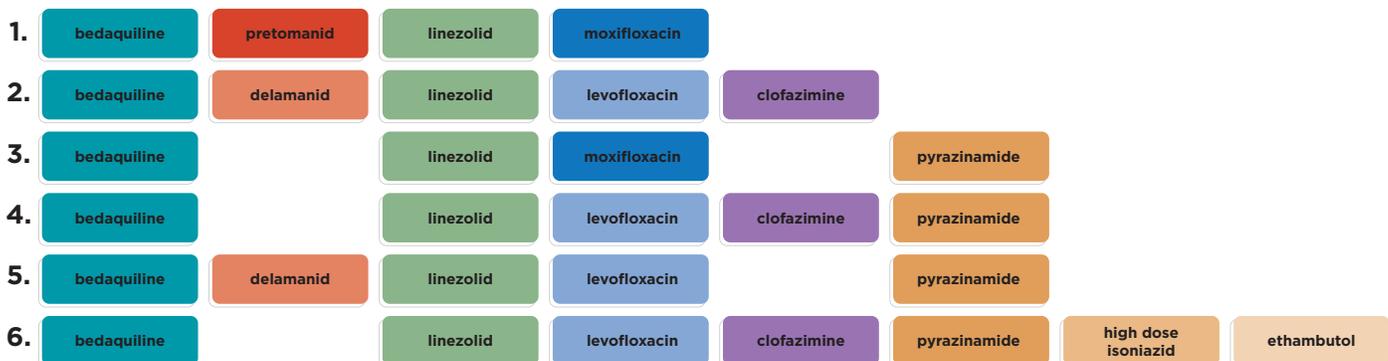


OPTIONS FOR TREATING DRUG-RESISTANT TUBERCULOSIS: WHICH REGIMEN IS RIGHT FOR ME?

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The World Health Organization (WHO) recommends six shorter regimens for the treatment of drug-resistant tuberculosis (DR-TB). People who are diagnosed with DR-TB and their providers thus have several options to choose from when starting a treatment regimen.

FIGURE 1. SHORTER REGIMENS RECOMMENDED BY THE WHO FOR DRUG-RESISTANT TB



1. **“BPaLM”**: A six-month regimen of bedaquiline, pretomanid, and linezolid given with moxifloxacin for rifampicin-/multidrug-resistant TB (RR-/MDR-TB) and without moxifloxacin for pre-extensively drug-resistant TB (XDR-TB).
2. **“BEAT tuberculosis”**: A six-month regimen of bedaquiline, delamanid, and linezolid, given with levofloxacin for RR-/MDR-TB or clofazimine for pre-XDR-TB.
3. **“endTB regimen 1”**: A nine-month regimen of bedaquiline, linezolid, moxifloxacin, and pyrazinamide for RR-/MDR-TB.
4. **“endTB regimen 2”**: A nine-month regimen of bedaquiline, clofazimine, linezolid, levofloxacin, and pyrazinamide for RR-/MDR-TB.
5. **“endTB regimen 3”**: A nine-month regimen of bedaquiline, delamanid, linezolid, levofloxacin, and pyrazinamide for RR-/MDR-TB.
6. **“9-month standardized regimen”**: A 9-to-11-month regimen of levofloxacin, clofazimine, pyrazinamide, and ethambutol, supplemented by bedaquiline for the first six months, linezolid for the first two months, and high-dose isoniazid for the first four to six months for RR-/MDR-TB.

The decision about which treatment regimen to use should be a shared decision that considers the medical risks and benefits of the different regimens as well as the preferences and needs of the person undergoing treatment. These shorter regimens have never been directly compared to one another and most of them were able to successfully treat 90 percent of people diagnosed with DR-TB. In spite of the regimens not being compared to one another, the WHO guidelines put the regimens in a ranked order considering duration, number of drugs, and cost. The regimens are listed above in the ranked order given by WHO.

Since there is not one regimen that is clearly better in terms of its ability to safely cure DR-TB, providers and people undergoing treatment should discuss and consider the following issues:



How long will the regimen last?



How many daily pills will the regimen contain?



How often will there need to be clinic visits for monitoring the regimen?



What kinds of tests will need to be done to monitor the safety of the regimen?



Are there any specific side effects seen with certain regimens that might be more worrisome to me?



Do I have any other health conditions that might make certain regimens more challenging for me?



Do I have to take any other medications that might make certain regimens more challenging for me?



Am I in an age group that might make certain regimens more challenging for me?



Am I currently (or planning) to be pregnant or breastfeeding and thus certain regimens might be more challenging for me?

Table 1 is designed to support providers and people undergoing treatment to compare the shorter regimens according to the following attributes: duration, pill burden, frequency of clinic visits, monitoring tests, side effects, drug interactions, contraindications, considerations for special populations, and cost. The decision of which regimen to use should be a joint one, based on the recommendations of the clinical provider and the preferences of the person being treated.

TABLE 1. ATTRIBUTES OF THE SHORTER, WHO-RECOMMENDED REGIMENS FOR DRUG-RESISTANT TB

Attributes	BPaLM	BEAT	endTB 1	endTB 2	endTB 3	Standardized
Duration	6 months	6 months	9 months	9 months	9 months	9–11 months
Pill burden	5–7 tabs	8–12 tabs	7–9 tabs	11–13 tabs	14–16 tabs	16–21 tabs
Visit frequency	Monthly	Monthly	Monthly	Monthly	Monthly	Monthly
Monitoring tests	ECG, blood draw for complete blood count, liver function, eye exam, nerve exam	ECG, blood draw for complete blood count, liver function, eye exam, nerve exam	ECG, blood draw for complete blood count, liver function, eye exam, nerve exam	ECG, blood draw for complete blood count, liver function, eye exam, nerve exam	ECG, blood draw for complete blood count, liver function, eye exam, nerve exam	ECG, blood draw for complete blood count, liver function, eye exam, nerve exam
Notable side effects	Changes in heart rhythm, low blood counts, peripheral neuropathy, vision changes, liver function changes	Skin pigmentation (when clofazimine used), changes in heart rhythm, low blood counts, peripheral neuropathy, vision changes, liver function changes	Changes in heart rhythm, low blood counts, peripheral neuropathy, vision changes, liver function changes, joint pain	Skin pigmentation (when clofazimine used), changes in heart rhythm, low blood counts, peripheral neuropathy, vision changes, liver function changes, joint pain	Changes in heart rhythm, low blood counts, peripheral neuropathy, vision changes, liver function changes, joint pain, nightmares	Skin pigmentation (when clofazimine used), changes in heart rhythm, low blood counts, peripheral neuropathy, vision changes, liver function changes, joint pain
Use with other health conditions	Caution with liver disease		Caution with liver disease	Caution with liver disease	Caution with liver disease	Caution with liver disease, alcohol use, existing nerve damage, existing vision problems
Use with other medications	Interactions with some anti-depressants, some cardiac medications	Interactions with some anti-depressants, some cardiac medications	Interactions with some anti-depressants, some cardiac medications	Interactions with some anti-depressants, some cardiac medications	Interactions with some anti-depressants, some cardiac medications	Interactions with some anti-depressants, some cardiac medications. Needs to be given with vitamin B6 (pyridoxine) to reduce risk of peripheral neuropathy from isoniazid
Age considerations	Cannot use in persons under 14 years old	None	None	None	None	None
Pregnancy or breastfeeding considerations	Cannot use in pregnancy or breastfeeding	Limited experience but likely safe	Limited experience but likely safe	Limited experience but likely safe	Limited experience but likely safe	Limited experience but likely safe
Cost (USD)	\$357 – \$382	\$1,091 – \$1,170	\$224	\$343	\$1,767	\$309



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