

drugs were added to the 18- to 24-month WHO-recommended regimen for MDR-TB. Bedaquiline and delamanid are now being used increasingly for treatment of MDR-TB under specific conditions. In 2019, another new drug, pretomanid, was approved by the FDA as part of a new combination regimen with bedaquiline and linezolid for patients with MDR-TB caused by a strain with additional resistance to a fluoroquinolone or a second-line injectable drug, or were intolerant of therapy, or in whom treatment had failed.

DRUGS

Four major drugs are considered first-line agents for the treatment of TB: isoniazid, rifampin, pyrazinamide, and ethambutol. **Table 178-2** presents currently recommended dosages in adults and children. Some studies have suggested increased effectiveness when isoniazid, rifampin, and pyrazinamide are given at higher dosage; thus if these findings are confirmed, dosages may be revised in the future. These drugs are well absorbed after oral administration, with peak serum levels at 2–4 h and nearly complete elimination within 24 h. Isoniazid and rifampin, two key anti-TB drugs, are recommended on the basis of their bactericidal activity (i.e., their ability to rapidly reduce the number of viable organisms and render patients noninfectious). All four agents are recommended in light of their sterilizing activity (i.e., their ability to sterilize the affected tissues, measured in terms of the ability to prevent relapses) and the lowered risk that drug-resistant mutant bacilli will be selected when the drugs are used in combination. Two additional rifamycins, rifapentine and rifabutin, are also available; however, their level of cross-resistance with rifampin is high. For a detailed discussion of the drugs used for the treatment of TB, see **Chap. 181**.

TABLE 178-2 Recommended Dosage^a for Initial Treatment of Tuberculosis in Adults and Children