In children with certain forms of extrapulmonary TB disease, particularly TBM and TB-related pleural or pericardial effusions, the inflammatory response to disease can cause severe deleterious clinical consequences. Corticosteroids reduce the exuberance of the inflammatory response but may also diminish the immune response to disease. Evidence strongly suggests that adjunctive treatment with corticosteroids reduces mortality and disabling neurologic deficits in patients with TBM[112,113]; one systematic review has suggested that corticosteroids may reduce mortality in any form of TB,[148] but additional evidence is needed. While a mortality benefit has not been clearly demonstrated for other forms of TB disease, adjunctive corticosteroids have been shown to reduce constrictive pericarditis in patients with TB pericarditis and are associated with more rapid symptom resolution in TB pleural effusion.[114,115,127,149] There are limited data on the use of corticosteroids in children, and these recommendations are largely based on studies involving adults.

XIV. Among children <15 years old who are diagnosed with MDR-TB disease, does the use of individualized treatment regimens based on DST results compared to a standardized regimen result in better treatment outcomes?

Expert consultation should be obtained for clinical management of suspected and laboratory-confirmed MDR-TB (i.e., resistance to both isoniazid and rifampin) **(expert opinion).** Whenever possible, treatment regimens for MDR-TB should be individualized **(expert opinion);** considerations include phenotypic and molecular DST results for the child or the presumed source case (when results of DST are not available for the child) **(strong, moderate).**

For treatment of drug-resistant TB, a minimum of five drugs to which the isolate is susceptible should be administered, including two or more bactericidal drugs **(strong, moderate).** Fluoroquinolones can be used to treat MDR-TB in children **(strong, moderate).**

For treatment of TB that is resistant only to isoniazid, isoniazid should be discontinued, and the patient should be treated with 6 to 9 months of a rifampin-containing regimen (e.g., rifampin, pyrazinamide, ethambutol, and levofloxacin or moxifloxacin) **(expert opinion).**[137]

Treatment of drug-resistant TB disease can be complex, and consultation with an expert in drug-resistant TB is important. When the disease-causing organism is resistant to both isoniazid and rifampin, the two most active agents against *M. tuberculosis*, treatment requires multiple alternative agents, which often have compounding toxicities and are less effective, requiring prolonged therapy for up to 24 months. Using agents that have been shown by DST to have efficacy is clinically meaningful and associated with better treatment success allowing clinicians to tailor regimens appropriately.[102,104,105,137] For these reasons, clinicians are advised to treat drug-resistant TB based on DST results for the infecting organism or the DST results from the organism of the presumed source case.[23,137] In all cases of MDR-TB in children with HIV, at least five drugs to which the infecting organism is known or presumed to be susceptible should be used, including two or more bactericidal drugs.[23,137] For children with a TB strain resistant to only isoniazid, isoniazid should be discontinued, and experts recommend the use of rifampin, pyrazinamide, and ethambutol for six months or up to nine months; a late-generation fluoroquinolone should also be added to the treatment regimen.[137] Late-generation fluoroquinolones are key components of current MDR-TB treatment approaches, and in almost all cases should be included as part of a treatment regimen for MDR-TB, in consultation with a clinical expert.[85]