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**Title:** Treatment outcomes and deaths among multidrug-resistant tuberculosis (MDR-TB) patients in Gomel region, Belarus – 2009-2010

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**Body:** Background: In Gomel, a region in south-east Belarus (country population 9.5 million in 2011; Gomel 1.5 million), TB patients with strains resistant to at least isoniazid and rifampicin (multidrug-resistance;MDR-TB) have been treated using standardised regimens with second-line drugs since 2009. Methods: We analyse factors associated with death in MDR-TB patients started on treatment in 2009-2010. Results: Of 514 confirmed MDR-TB patients, 436 (85%) started treatment. Median age was 45y (IQR:36-52), 84% were males, 15% were HIV-infected (40% on antiretrovirals) and 6% had additional resistance to ofloxacin plus a second-line injectable (XDR). 34% of patients were successfully treated, in 13% treatment failed, 35% died, and 18% interrupted therapy. Among the 152 deaths, 64% were attributed to pulmonary TB, 25% to HIV/AIDS, 6% to associated malignancy, and 5% to other causes. At multivariable regression, death was statistically-significantly associated with age>34 y (adjusted odds ratios: 2.2; 95% confidence limits:1.2-4.2), previous treatment with second-line drugs (2.5;1.3-5.0), HIV-infection (2.9;1.5-5.8); and protective effects were associated with ethambutol (0.5;0.3-0.9), ofloxacin (0.2;0.1-0.4) and prothionamide/ethionamide (0.4;0.2-0.6). Conclusion: In these first MDR-TB patients placed on standardised treatment, regimens were not optimised with negligible access to later-generation fluoroquinolones. Many patients had long-standing disease and more extensive lesions. No social support was provided to MDR-TB patients before 2011. With enhanced regimens, expanded access to antiretrovirals and social support, treatment outcomes are expected to improve.