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The risk of multidrug- or rifampicin-resistance in males *versus* females with tuberculosis

C. Finn McQuaid[1], Katherine C. Horton[2], Anna S. Dean[3], Gwenan M. Knight[1] and Richard G. White[4]

Affiliations: [1]TB Modelling Group, TB Centre, AMR Centre and Centre for Mathematical Modelling of Infectious Diseases, Dept of Infectious Disease Epidemiology, London School of Hygiene and Tropical Medicine, London, UK. [2]TB Modelling Group, TB Centre and Centre for Mathematical Modelling of Infectious Diseases, Dept of Clinical Research, London School of Hygiene and Tropical Medicine, London, UK. [3]Global TB Programme, World Health Organization, Geneva, Switzerland. [4]TB Modelling Group, TB Centre and Centre for Mathematical Modelling of Infectious Diseases, Dept of Infectious Disease Epidemiology, London School of Hygiene and Tropical Medicine, London, UK.

Correspondence: C. Finn McQuaid, London School of Hygiene and Tropical Medicine, Keppel Street, London, WC1E 7HT, UK. E-mail: finn.mcquaid@lshtm.ac.uk

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Globally, the risk of drug resistance among those with TB is the same for males as for females. However, local differences in high-burden risk groups lead to a need for a sex-differentiated approach to TB case-finding and care in some settings. https://bit.ly/2Z7nJon

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ABSTRACT Males are at an increased risk of tuberculosis (TB) disease compared to females. Additionally, several risk factors for multidrug-resistant (MDR) or rifampicin-resistant (RR) TB disease are more common in males, hence male TB patients may have a higher relative risk of MDR/RR-TB than female TB patients.

We used sex-disaggregated data of TB patients reported to the World Health Organization for 106 countries to calculate male-to-female (M:F) risk ratios of having MDR/RR-TB.

There was no evidence of either sex being more at risk of MDR/RR-TB in 81% (86 out of 106) of countries, with an overall random-effects weighted M:F risk ratio of 1.04 (95% CI 0.97–1.11). In 12% (13 out of 106) of countries there was evidence that males were more at risk, while in 7% (seven out of 106), females were more at risk. The risk of having TB that was MDR/RR increased for males compared to females as MDR/RR-TB incidence increased, and was higher for males than females in the former Soviet Union, where the risk ratio was 1.16 (1.06–1.28). Conversely, the risk increased for females compared to males as gross domestic product purchase power parity increased, and was higher for females than males in countries where the majority of TB burden was found in the foreign-born population, where the risk ratio was 0.84 (0.75–0.94).

In general, the risk of MDR/RR-TB, among those with TB, is the same for males as for females. However, males in higher MDR/RR-TB burden countries, particularly the former Soviet Union, face an increased risk that their infection is MDR/RR-TB, highlighting the need for a sex-differentiated approach to TB case-finding and care.