

Tackling drug-resistant TB through molecular methods

Rapid molecular techniques, such as generation sequencing, [spoligotyping](#) and mycobacterial interspersed repetitive units variable number of tandem repeats (MIRU-VNTR) typing, are the tools Dr Anneke van der Spoel van Dijk, a senior medical scientist in the Department of Medical Microbiology at the University of the Free State (UFS), uses to investigate the spread of TB in the Free State population. Her work also informs decisions about how best to treat patients with multidrug-resistant TB (MDR-TB).



Dr Anneke van der Spoel van Dijk is invested in contributing to the global effort of stopping TB by 2035. Photo: Charl Devenish

Van der Spoel van Dijk's work forms part of research in the faculty looking at resistance development in TB strains. She is currently also doing her doctoral thesis on the differences and incidence of MDR-TB among adolescents versus adults. "It is a complicated picture, but we hope to unravel it to support better diagnostic tools and patient care," she says.

This type of research helps the National Health Laboratory Service and Department of Health in trying to refine TB diagnostic tools. "Until recently, it took up to two years to fine-tune treatment decisions for patients with MDR-TB. Patients get a cocktail of anti-TB drugs, but it takes time to find the right combination. Re-infection and relapse (patients stopping treatment for several reasons) add to the diagnostic and treatment management challenges," says Van der Spoel van Dijk.

"Now doctors can reduce the time needed for diagnostic certainty to about seven days, while new drugs allow reduction of treatment from more than 18 to nine months. This can have an enormous impact on the life of many patients."

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