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# Nationwide analysis of treatment outcomes in children and adolescents routinely treated for tuberculosis in the Netherlands

Fajri Gafar <sup>1,8</sup>, Natasha van't Boveneind-Vrubleuskaya<sup>2,3,8</sup>,  
Onno W. Akkerman<sup>4,5</sup>, Bob Wilffert<sup>1,2</sup> and Jan-Willem C. Alffenaar<sup>2,6,7</sup>

**Affiliations:** <sup>1</sup>University of Groningen, Groningen Research Institute of Pharmacy, Unit of Pharmacotherapy, -Epidemiology, and -Economics, Groningen, The Netherlands. <sup>2</sup>University of Groningen, University Medical Center Groningen, Dept of Clinical Pharmacy and Pharmacology, Groningen, The Netherlands. <sup>3</sup>Dept of Public Health TB Control, Metropolitan Public Health Services, The Hague, The Netherlands. <sup>4</sup>University of Groningen, University Medical Center Groningen, Dept of Pulmonary Diseases and Tuberculosis, Groningen, The Netherlands. <sup>5</sup>University of Groningen, University Medical Center Groningen, Tuberculosis Center Beatrixoord, Haren, The Netherlands. <sup>6</sup>University of Sydney, Faculty of Medicine and Health, School of Pharmacy, Sydney, Australia. <sup>7</sup>Westmead Hospital, Sydney, Australia. <sup>8</sup>Both authors contributed equally.

**Correspondence:** Fajri Gafar, University of Groningen, Groningen Research Institute of Pharmacy, Unit of Pharmacotherapy, -Epidemiology, and -Economics, Antonius Deusinglaan 1 (room: 3214.0450), 9713 AV Groningen, The Netherlands. E-mail: f.gafar@rug.nl



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**High success rates for TB treatment were achieved in children and adolescents in the Netherlands. To further optimise care in this population, several risk factors particularly associated with mortality and loss to follow-up have been identified.** <http://bit.ly/2ILJRTC>

**Cite this article as:** Gafar F, van't Boveneind-Vrubleuskaya N, Akkerman OW, *et al.* Nationwide analysis of treatment outcomes in children and adolescents routinely treated for tuberculosis in the Netherlands. *Eur Respir J* 2019; 54: 1901402 [<https://doi.org/10.1183/13993003.01402-2019>].

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## ABSTRACT

**Background:** As a vulnerable population, children and adolescents with tuberculosis (TB) are faced with many challenges, even those who live in low TB incidence countries. We aimed to evaluate factors associated with TB treatment outcomes allowing more focused interventions to support this population once diagnosed.

**Methods:** A retrospective cohort study using a nationwide surveillance database was performed in children and adolescents (aged 0–18 years) treated for TB in the Netherlands from 1993 to 2018. Logistic regression analyses were used to estimate adjusted odds ratios (aOR) for associated factors of mortality and loss to follow-up (LTFU).

**Results:** Among 3253 eligible patients with known outcomes, 94.4% (95.9% children and 92.8% adolescents) were cured or completed treatment, 0.7% died during treatment and 4.9% were LTFU. There were no reported treatment failures. Risk factors of death included children aged 2–4 years (aOR 10.42), central nervous system TB (aOR 5.14), miliary TB (aOR 10.25), HIV co-infection (aOR 8.60), re-treated TB cases (aOR 10.12) and drug-induced liver injury (aOR 6.50). Active case-finding was a protective factor of death (aOR 0.13). Risk factors of LTFU were adolescents aged 15–18 years (aOR 1.91), illegal immigrants (aOR 4.28), urban domicile (aOR 1.59), unknown history of TB contact (aOR 1.99), drug-resistant TB (aOR 2.31), single adverse drug reaction (aOR 2.12), multiple adverse drug reactions (aOR 7.84) and treatment interruption >14 days (aOR 6.93). Treatment in recent years (aOR 0.94) and

supervision by public health nurses (aOR 0.14) were protective factors of LTFU.

**Conclusion:** Highly successful treatment outcomes were demonstrated in children and adolescents routinely treated for TB. Special attention should be given to specific risk groups to improve treatment outcomes.