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## EDITORIAL

# The adolescent tuberculosis care cascade: an urgent need to address high rates of loss to follow-up from diagnosis to cure

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Adolescence and early adult life presents a period of heightened risk during the life course with respect to the acquisition of a new tuberculous infection and subsequent progression to tuberculosis.<sup>1</sup> Tuberculosis in this age group is also more likely to be infectious than in children, and as such, adolescents and young adults are considered an at-risk group for onward tuberculosis transmission in the community.

Although the importance of the adolescent age group in human immunodeficiency virus (HIV) control is increasingly appreciated, tuberculosis among adolescents has been neglected to date.<sup>2</sup> This is changing, however, and tuberculosis in adolescence has recently been recognised as a priority on the adolescent health research agenda.<sup>3</sup> The paucity of data on the burden of disease in this overlooked population has also been exacerbated by the nature of programmatic reporting, which splits the group between children (age 0–14 years) and adults (age  $\geq$ 15 years).<sup>4</sup>

Due to the demographic structure of many high-burden settings,<sup>5</sup> adolescents and young adults represent a significant proportion of patients who initiate anti-tuberculosis treatment,<sup>6</sup> and thus improving the treatment outcomes in this demographic group is of great importance to global tuberculosis control.<sup>7</sup> However, assessment of the quality of tuberculosis care provided to patients has received very little attention, apart from a few exceptions,<sup>8</sup> with national tuberculosis programmes more focused on improving 'coverage', such as increasing the availability of free tuberculosis diagnostic and treatment services.<sup>9</sup> This is in stark contrast to the HIV community, which has extensively used cascade of care analyses to assess the quality of care and identify and address major deficiencies in the continuum of care from diagnosis through to effective treatment for many years.<sup>10</sup>

In this issue of *Public Health Action*, Reif et al. adopt the cascade of care model to evaluate the tuberculosis care continuum among adolescents and young adults (aged 10–24 years) with microbiologically confirmed tuberculosis, in a specialist adolescent clinic providing integrated HIV and tuberculosis care in Port-au-Prince, Haiti.<sup>11</sup> The paper highlights the poor treatment outcomes in this high-risk population and addresses a critical gap in the TB literature. Importantly, it emphasises the vulnerability of adolescents with tuberculosis, with and without HIV co-infection, even in a clinical setting with enhanced clinical support services. The study captured critical data on the care cascade prior to

initiation of TB treatment, which is rarely reported. They found that this initial step of the care cascade was where the largest loss of adolescents with microbiologically confirmed tuberculosis, and therefore potentially infectious tuberculosis, occurred. However, it appears that providing same-day TB treatment initiation within the clinic may mitigate this loss, although this finding needs to be replicated in other settings. Worryingly, the outcomes were worse for HIV-positive than HIV-negative adolescents at each step of the continuum, despite a dedicated adolescent clinic setting providing a youth-friendly service with social support programmes, including HIV-positive peer educators, transportation vouchers and tracking patients who had missed clinic appointments. Older adolescents and young adults were more likely than younger adolescents to be lost from care after treatment initiation—a finding replicated within HIV care.<sup>12</sup>

As noted by the authors, the data are limited by the lack of information on the reasons for loss to follow-up, which would help to inform clinic- or even community-based interventions to facilitate engaging adolescents and young adults in TB care. However, this sub-population cascade does highlight the need for the TB community to improve and tailor services and counteract the period of biological and psychosocial vulnerability for this vulnerable, high-risk population.

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