

## **Sustaining tuberculosis decline in the UK**

The re-emergence of tuberculosis in England began in the late 1980s increasing to a peak in 2011; since then incidence has fallen throughout the UK, in both the UK and non-UK born population and in children.<sup>1</sup> After 4 consecutive years of declining incidence of tuberculosis, sustained progress is finally being made with a 30% decline between 2011 and 2015. . However, tuberculosis incidence in the UK remains higher than in most other high-income European countries and more than four times higher than in the USA.<sup>2</sup>

The decline in tuberculosis follows a combination of local, national, and global action, as well as changes in migration patterns. A collaborative national tuberculosis strategy was developed by Public Health England and NHS England between 2013 and 2015, while concurrently implementing new local and national tuberculosis control initiatives, such as cohort reviews<sup>3</sup> and active case finding.<sup>4</sup> The collaborative strategy involved ten evidence-based areas for action backed up by new investment. Two particular priorities were latent tuberculosis testing and treatment for new entrants to the UK and targeted case finding and supported management for vulnerable groups, such as people who are homeless, drug and alcohol users, and those in contact with the criminal justice system. Monitoring has allowed continuous updating of the focus of the programme, but an evaluation and review of the effect of specific investments is also warranted in due course.

73% of individuals identified with tuberculosis in England in 2015 were born abroad, a population with a 15-fold higher tuberculosis rate than the UK born population.<sup>1</sup> While migration drives the overall trends, tuberculosis continues disproportionately to affect people with social risk factors such as homelessness and problem drug use. The rate of decline in incidence of tuberculosis among people with a social risk factor was more than 10-fold lower between 2011 and 2015 than the fall in overall incidence in England.<sup>1</sup> In 2015, tuberculosis patients with social risk factors had higher levels of drug-resistant tuberculosis, were twice as likely to have infectious tuberculosis, and were three times more likely to be UK born than people without social risk factors.<sup>1</sup> The ongoing north London isoniazid resistant tuberculosis outbreak, which began in 1995, suggests continuing transmission in this group.<sup>5</sup> Treatment outcomes in

individuals with social risk factors were worse than in those without social risk factors.<sup>1</sup> A greater focus on finding and treating patients with social risk factors is needed to achieve continuing decline in tuberculosis incidence in England.

Globally, the average rate of decline in tuberculosis incidence is 1·5% annually, with potential impact on the number of cases among migrants to the UK. In addition to other actions taken to improve tuberculosis control, the UK replaced port based, on-entry tuberculosis screening with pre-entry screening covering all high incidence countries from 2012, and this has contributed to early detection.<sup>6</sup> In 2015, the yield from the pre-entry screening programme was 149 cases per 100 000 screened applicants from high-incidence countries compared with 45 cases per 100 000 migrants from the on-entry programme in 2006.<sup>1</sup> The pre-entry screening programme has partly contributed to the observed decline in UK tuberculosis incidence.

Since the global effort is focused on ending the tuberculosis epidemic by 2035,<sup>7</sup> sustained action is needed to maintain the recent gains in tuberculosis control in the UK. Recent progress shows how bringing together UK expertise, knowledge, and political commitment can impact on the health of the public. Nevertheless, World TB Day reminds us that we must not become complacent. If we fail to sustain action, re-emergence is one of the few certainties in tuberculosis control, as shown by previous cycles of investment and disinvestment.<sup>8</sup>

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- 1 Public Health England. Tuberculosis in England: 2016 annual report. 2016.  
<https://www.gov.uk/government/publications/tuberculosis-in-england-annual-report> (accessed March 6, 2017).
- 2 Zenner D, Zumla A, Gill P, Cosford P, Abubakar I. Reversing the tide of the UK tuberculosis epidemic. *Lancet* 2013; **382**: 1311–12.
- 3 Anderson C, White J, Abubakar I, et al. Raising standards in UK TB control: introducing cohort review. *Thorax* 2014; **69**: 187–89.
- 4 Jit J, Stagg H, Aldridge R, White P, Abubakar I. Dedicated outreach service for hard to reach patients with tuberculosis in London: observational study and economic evaluation. *BMJ* 2011; **343**: d5376.
- 5 Maguire H, Brailsford S, Carless J, et al. Large outbreak of isoniazid-mono-resistant tuberculosis in London, 1995 to 2006: case-control study and recommendations. *Euro Surveill Bull Eur Sur Mal Transm Eur Commun Dis Bull* 2011; **16**: **19830**.
- 6 Aldridge R, Zenner D, Muzyamba M, et al. Prevalence and risk factors for active tuberculosis in migrants screened pre-entry to the UK: a population-based cross-sectional study. *Lancet Infect Dis* 2016; **16**: 962–70.
- 7 WHO. Implementing the end TB strategy: the essentials. Geneva: World Health Organization, 2015.
- 8 Reichman LB. The U-shaped curve of concern. *Am Rev Respir Dis* 1991; **144**: 741–42.