Abstract S28 Figure 1 First diagnosis for TB-HIV co-infected patients, 2000–2014.

Results 106,829 TB cases aged ≥ 15 years were notified to PHE between 2000 and 2014, of which 5792 (5.4%) were co-infected with HIV. The absolute number of HIV-TB diagnoses rose between 2000–2004, and then decreased from 543 (8.0%) in 2004 to 205 (3.2%) in 2014. Overall, 2,787/5,792 (49%) were diagnosed with TB and HIV simultaneously, whilst 549 (9%) were diagnosed with TB before and 2456 (42%) after HIV diagnosis. The relationship between TB and HIV diagnosis changed over time (figure 1). The absolute number of TB cases in people with known HIV rose from 75/224 (33%) in 2000 to 210/454 (46%) in 2007, then fell to 117/205 (57%) by 2014, but increased as a proportion of all HIV-TB cases from 2000 to 2014. There were corresponding declines in the proportion diagnosed simultaneously with TB and HIV from 298/543 (55%) in 2004 to 79/205 (39%) in 2014 and those first diagnosed with TB (51/224 (23%) in 2000 to 9/205 (4%) in 2014).

Conclusions Within an overall decline in HIV-TB co-infection there has been a change in the pattern of co-infection. A greater proportion of cases now occur in people with known HIV infection, and fewer HIV infections are diagnosed after TB diagnosis. This may be explained by more HIV testing, including in TB clinics, resulting in earlier HIV diagnosis. However, as the number of people with HIV in the UK increases, sustained success requires better management of latent TB infection to prevent the occurrence of TB disease in people diagnosed with HIV.

S29

A RANDOMISED CONTROLLED TRIAL COMPARING SMARTPHONE ENABLED REMOTE VIDEO OBSERVATION WITH DIRECT OBSERVATION OF TREATMENT FOR TUBERCULOSIS

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Background Directly observed treatment (DOT) has been the standard of care for tuberculosis since the early 1990s. In England DOT is targeted at those considered to be at high risk of poor adherence and clinically complex patients. We report the first randomised controlled trial of smartphone-

enabled video observation of treatment (VOT) for active tuberculosis compared to DOT.

Methods Tuberculosis patients eligible for selective DOT in England were randomised to an offer of asynchronous VOT (daily remote observation using a smartphone app) or DOT (3 or 5 times weekly observation in community or clinic settings).

Results 58% of 226 randomised patients had a history of homelessness, drug use, imprisonment, alcohol or mental health problems. Of the 112 patients randomised to an offer of VOT, 70% had over 80% of scheduled observations completed over two months (the primary outcome measure) compared to 31% of 114 patients randomised to an offer of DOT ($p < 0.001$). The effect was, in part, due to 51% of those randomised to DOT having less than one week of observation (compared to 10% of those randomised to VOT), and so not starting treatment with their allocated regimen. VOT patients sustained high observation levels throughout treatment, whereas this declined rapidly in DOT patients. We estimate that observation of a six month course of treatment with daily VOT cost £1645 per patient compared to £5700 for five times per week DOT.

Conclusions VOT is a more effective and cheaper approach to observation of tuberculosis treatment than clinic or community based DOT.

S30

IS THE NEW NATIONAL LTBI SCREENING PROGRAM REACHING THE TARGET POPULATION? A POPULATION-BASED COHORT STUDY

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In England (73%) of TB cases occur among foreign-born individuals due to reactivation of Latent TB infection (LTBI).¹ The cornerstone of the global strategy to eliminate TB in low-incidence countries is to target preventative therapy at high-risk groups of developing active disease. England is the first country implementing a £10 m/annum program to systematically provide LTBI screening and treatment for new entrant migrants.² The main challenge is how to identify migrants eligible for screening among the reservoir of migrants already registered and those unregistered with primary-care. We aimed to establish the most feasible and effective method to localise migrants eligible for LTBI screening and to estimate population size, TB incidence after arrival and LTBI service utilisation of the target population. We performed a retrospective population based cohort study of VISA-applicants aged 16 to 35 years screened for active TB before entry to UK in 72 high-burden countries between 2011 and 2014. We used data record linkage of the pre-entry screening, the NHS Personal Demographic Service (PDS), the Enhanced TB Surveillance system and LTBI service utilisation databases. 1 93 979 migrants eligible for LTBI screening entered the UK between 2011 and 2014. A low proportion 78 395 (40.4%) registered in primary-care in the year of arrival, of whom 30 838 (39.3%) registered in high TB incidence areas of London and Midlands. We estimated the number of delayed registrations of the same age group in these areas by record linkage;