designing combination HIV prevention interventions on the value of integration of non-HIV services. The challenge now is to replicate their success more broadly and to empower health systems in the region to provide the comprehensive care needed.

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# The tuberculosis emergency in eastern Europe

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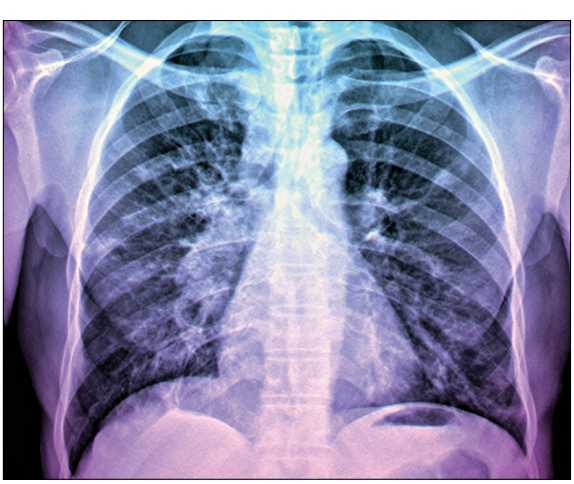
Recently, when it comes to tuberculosis, there has been no shortage of bad news. WHO announced in November that, once again, the disease has earned the dubious distinction of being the leading infectious killer of adults.[1] And, now, in *The Lancet HIV*, Daria Podlekareva and colleagues[2] show that almost one in every three people living with HIV in eastern Europe who is diagnosed with tuberculosis is dead within a year.

Although unsettling, there is nothing surprising about the results of this study. Once again, we are presented with evidence that two familiar stumbling blocks are killing people with tuberculosis at unprecedented rates: HIV co-infection and drug-resistant forms of the disease.[3] The noxious synergy[4] between tuberculosis and HIV has been well described, with many different solutions proposed for halting this mortality. However, this paper presents clear evidence that straightforward interventions—such as drug-susceptibility testing for tuberculosis and the prompt initiation of antiretroviral therapy in all patients with tuberculosis—are still not being implemented.

Drug resistance continues to be a formidable foe, with this study documenting a death rate three-times higher in those with drug-resistant tuberculosis than in those with fully susceptible disease. In western Europe, however, no such excess mortality was recorded, probably because effective interventions are part of routine tuberculosis practice, similar to those described in a recent *Lancet* Series on eliminating the disease.[5] Yet there has been great hesitation on the part of a tuberculosis community more comfortable with tradition than innovation to demand these interventions be implemented worldwide and urgently, even though similar outbreaks are also being reported in places as disparate as Papua New Guinea[6] and India.[7] Because most drug-resistant tuberculosis comes from primary transmission,[8] treatment as prevention must become the prevailing strategy to stop the spread of drug-resistant tuberculosis, as is the case for HIV.[9] This means



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rapid diagnosis of drug-resistant tuberculosis with expeditious initiation of effective therapy for everyone who presents with signs and symptoms of the disease.[10] Effective therapy must include, from the beginning, the most powerful drugs available to treat drug-resistant tuberculosis. Post-exposure management of people who come into contact with drug-resistant tuberculosis must also be implemented, not as an add-on contact-tracing activity, but as an essential strategy for saving lives.[11] Finally, tuberculosis treatment is based on a fundamental mistrust between health-care providers and those living with the disease, including stigmatising language[12] and the patronising direct observation of pill taking—no wonder the model is failing.[13]

Recent reflections on shortcomings in the global management of deadly infectious diseases promise change to better respond when outbreaks and emergencies occur in the future.[14] The data presented by Podlekareva and colleagues reveal a health emergency with severe consequences that is happening now. We must respond not just with plans and words, but with measurable action. If not, we should be prepared for more bad news in the months and years to come.

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# First-line HIV therapy shall not fail

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In *The Lancet HIV* Janne Estill and colleagues[1] present the results of an extensive modelling study forecasting future needs for first-line and second-line HIV therapy in sub-Saharan Africa up to 2030. Questions could be raised about the datasets used, the assumptions made to generate the results, and the very large confidence intervals. Nevertheless, the results are very stimulating: with the first estimated numbers of patients needing second-line therapy and exploration of the potential determinants of future need.

The main finding of the modelling analysis is that the need for second-line treatment will definitely increase over time and reach 0·8–4·6 million people (6·6–19·6% of those treated) in 2020. The proportion of patients on second-line treatment will be two to three times higher if routine viral load monitoring is fully implemented than if there is no scale-up because it will reveal more true failures (which currently go undetected) and will help the differential diagnosis in cases of non-adherence; however, this detection will ultimately decrease the need for second-line therapy.

Another benefit of implementing viral load monitoring (and of its point-of-care version) is that it could lead to a decrease in the number of patients accumulating drug-resistant mutations[2] and help to preserve the efficacy of (cheaper) first-line regimens. In a published model we showed second-line therapy to be a cost-effective approach to prevent the spread of drug-resistant viruses.[3]

Two recent transformational events will affect, and hopefully decrease, the need for second-line therapy. First,