EDITORIAL

For better or worse, microscopy is here to stay . . .

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In this issue of PHA, Shah and colleagues reaffirm the utility of Xpert® MTB/RIF as a sensitive tool for the laboratory diagnosis of pulmonary tuberculosis.¹ Their study found that 38 of 560 (6.8%) smear-negative samples were Xpert-positive, almost doubling the percentage of samples that were smear-positive by traditional brightfield microscopy.

Importantly, Shah and colleagues reaffirm the cost implications and sustainability of Xpert in settings such as Pakistan, and by inference, the necessity of prioritising patients for Xpert testing. The policy statement by the World Health Organization for Xpert made a strong recommendation that 'Xpert MTB/RIF should be used as the initial diagnostic test in individuals suspected of MDR-TB or HIV-associated TB', and a conditional recommendation, recognising major resource implications, 'as a follow-on test to microscopy in settings where MDR and/or HIV is of lesser concern, especially in smear-negative specimens'.²

For Pakistan, and for most other high TB burden countries, sputum smear microscopy is, and will remain, the primary tool for the laboratory diagnosis of TB. In the present study, sputum smear microscopy detected 46/606 (7.6%). Although this much maligned diagnostic tool may miss nearly half of all cases, an optimised and quality assured smear microscopy network can approach 'point-of-care testing' for all TB suspects. It all starts with patient education and sputum collection. A study in Rawalpindi, Pakistan, found that for women, guidance on sputum collection increased smear positivity from 8% (control group) to 13% for the intervention group. In part, the intervention group were also more likely to submit multiple specimens.³ An Indonesian study found that simple instructions increased smear positivity by 15.1%.⁴ The microscopy laboratory involved in the Indonesian study continues to the present day to perform brightfield microscopy at a consistently high standard (multiple personal observations from 2003 to 2013). A good quality specimen handled by a good quality smear microscopy laboratory will identify the majority of pa-

tients at greatest risk of transmitting TB in the community, and may be useful in following up patients on treatment.

Fortunately, in this study only one TB suspect with presumptive pulmonary TB was identified as rifampicin-resistant by Xpert MTB/RIF. Depending upon the patient's history, the result may have created a dilemma for the clinician and the TB programme.⁵ Is the result true? As always, a careful taking of patient history is critical, especially regarding previous treatment(s) with anti-tuberculosis drugs in the public and/or private sector. Where the prevalence of rifampicin resistance is less than 5% among patients who have never previously been treated for TB, such 'naïve' TB patients with rifampicin resistance detected by Xpert require a confirmatory test (by line probe assay or phenotypic testing) to confirm the diagnosis.⁵

National TB programmes in high burden settings need *both* smear microscopy and Xpert MTB/RIF. Prioritising the testing of good quality samples using either technology in quality assured laboratories will achieve the best outcomes for the patient and the programme.

References

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