



ASAP-GxNet project in Burkina Faso: fulfil country capacity gaps to ensure efficient utilisation of GeneXpert instruments in tuberculosis care and cascade

To the Editor:

In the *European Respiratory Journal*, ALBERT *et al.* [1] reviewed the lessons learnt from the global roll-out of Xpert MTB/RIF (Cepheid, Sunnyvale, CA, USA) highlighting the need, among others, to build country capacity to ensure an impactful introduction of new diagnostic technologies.

Since the launch of the assay in 2010 [2], >42 000 instrument modules and >34 million Xpert MTB/RIF cartridges had been procured in 130 of the 145 countries eligible for concessional pricing, as of December 31, 2017 (personal communication; Cepheid).

Although smears still dominate tuberculosis (TB) testing landscape in many high-burden countries [3], the increased number of Xpert MTB/RIF tests performed on TB patients in recent years suggests the increasingly key role of this assay in TB diagnosis. Over the past 7 years, the introduction of this test into the national TB diagnostic routines have been widely supported by an extensive number of guidance and strategy documents [1]. Overall, uptake of World Health Organization guidelines on Xpert MTB/RIF has been relatively quick compared to other TB diagnostic guidelines [4, 5].

However, the global roll-out of the test has highlighted gaps that have limited impact on the TB care cascade [1].

The roll-out had also demonstrated that the efficient and impactful introduction of Xpert MTB/RIF should not be merely limited to aligning local policies with international diagnostic guidelines, but it is also conditioned by national capacities to ensure the delivery of high-quality of diagnostic services. In this context, high managerial skills and appropriate allocation of resources through evidence-based decision-making are essential to achieve the expected outcomes.

Firstly, high managerial skill is critical to ensure that all centres run efficiently. The national GeneXpert focal point plays an essential role in collaborating with the national TB programme (NTP) to coordinate efforts and needs, to monitor that national guidelines are followed at all levels, and to guarantee continuity of test services in term of reagents supplies, training, maintenance, quality assurance and supervision. In many settings, national GeneXpert networks are generally guided by managers with technical background but weak managerial skills. The results are suboptimal diagnostic services of low quality and high discontinuity.

Secondly, appropriate allocation of resources requires knowledge of the real performances of national diagnostic services. This knowledge has to be acquired to inform the NTP whether the current network is achieving the expected results. At present, expansions of national GeneXpert networks are rarely guided by



@ERSpublications

Improving availability, accessibility and quality of national GeneXpert networks through ASAP-GxNet <http://ow.ly/umaZ30mGRpE>

Cite this article as: Alagna R, Sawadogo TL, Combarry A, *et al.* ASAP-GxNet project in Burkina Faso: fulfil country capacity gaps to ensure efficient utilisation of GeneXpert instruments in tuberculosis care and cascade. *ERJ Open Res* 2019; 5: 00150-2018 [<https://doi.org/10.1183/23120541.00150-2018>].

Copyright ©ERS 2019. This article is open access and distributed under the terms of the Creative Commons Attribution Non-Commercial Licence 4.0.



estimating the impact of already available instruments. The overall results are networks that absorb most of disease funding resources, and cause concerns over accessibility and sustainability.

In 2018, the STOP TB Partnership's TB REACH initiatives have funded the Applying a Standardized Approach to Strengthen Performances of GeneXpert Networks (ASAP-GxNet) project to strengthen local managerial skills and conduct a standardised impact assessment of the network [6].

The proposed project, which will be developed along the same lines as the Strengthening Laboratory Management Toward Accreditation (SLMTA) curriculum with specific application to GeneXpert, is based by two main pillars: a training curriculum and an assessment tool. Together, these components aim to develop a standardised phase-to-phase approach for strengthening national management skills, identifying gaps through standardised impact assessments and continuously improving quality of the national GeneXpert networks. The ASAP-GxNet programme will last for 6 months. A standardised assessment tool will be conducted at the beginning (baseline) of the programme to identify strengths and weaknesses of 1) managerial capacities and 2) quality and outcomes of diagnostic service provision. The baseline score will be used to identify key priority areas to be addressed during the training curriculum composed of six management topics covering key components of the national GeneXpert network (figure 1). The training programme will be conducted in a series of three workshops every 2 months, with improvement projects carried out by the national GeneXpert focal point in the time frame between workshops. During the 2 months of improvement projects, the national GeneXpert focal point will be supported by the external mentor to supervise the ongoing progress. At the end of 6 months, the NTP will take the final assessment (exit). The difference between baseline and exit scores will represent the ASAP-GxNet effect (figure 1).

This pilot project will be developed and implemented in collaboration with the NTP of Burkina Faso where the limited number of GeneXpert machines (15 instruments in 2018) represent the perfect environment to accomplish the project.

With the upcoming validation of new diagnostic point-of-care platforms [7] and the implementation next-generation sequencing-based diagnostic tools [8, 9], there is an unprecedented need to fulfil the mentioned gaps, and develop a tool to build managerial capacities in the countries and assess quality of diagnostic provision. The ASAP-GxNet may represent a major step forward toward the effective utilisation of decentralised instruments by allowing NTPs, technical partners and funding agencies/donor in identifying the needs for strengthening the network, as well as appropriately allocate resources through evidence-based decision-making.

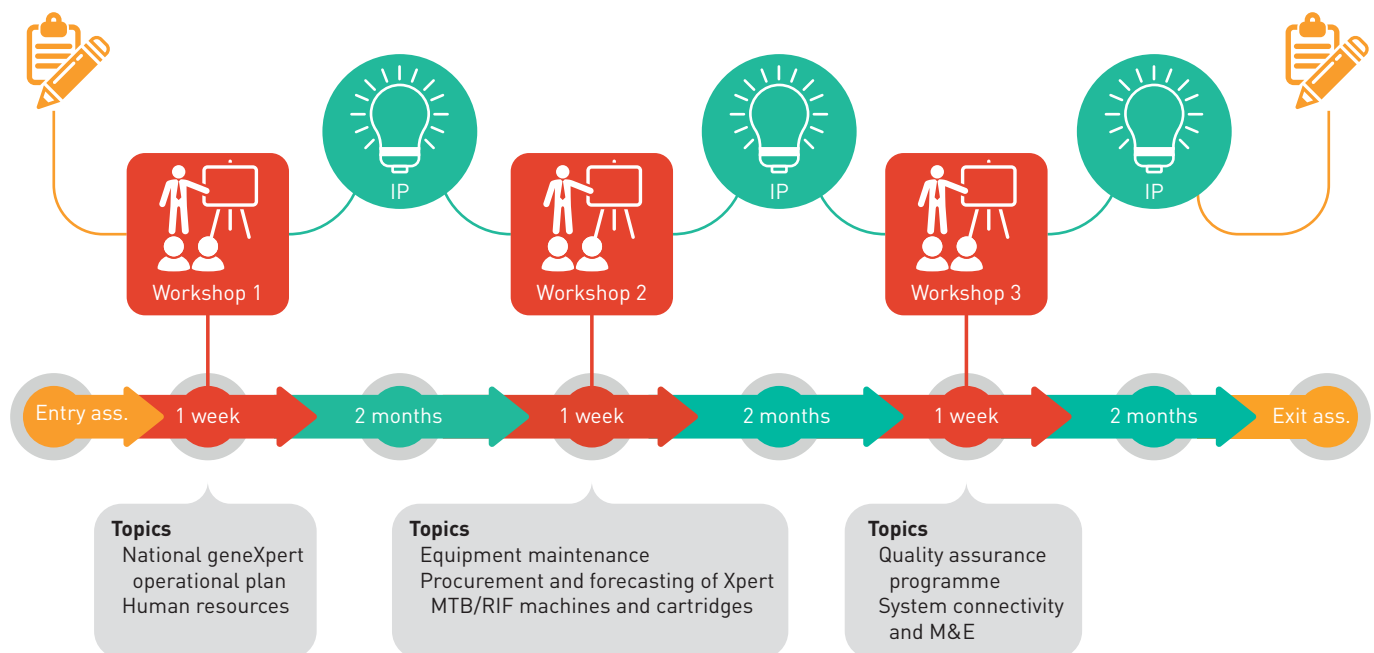


FIGURE 1 Applying a Standardized Approach to Strengthen Performances of GeneXpert Networks (ASAP-GxNet) implementation process. Orange: entry and exit assessments [ass.]; red: three workshops with related topics; green: 2-month improvement projects (IPs). The difference between the entry and exit assessments represents the ASAP-GxNet effect. M&E: monitoring and evaluation.

Riccardo Alagna¹, Tinnoga Lèon Sawadogo², Adjima Combarry², Souba Diandé² and Daniela Maria Cirillo¹

¹IRCCS San Raffaele Scientific Institute, Milan, Italy. ²National Tuberculosis Program, Ouagadougou, Burkina Faso.

Correspondence: Riccardo Alagna, IRCCS San Raffaele Scientific Institute, Via Olgettina 58, Milan 20132, Italy. E-mail: alagna.riccardo@hsr.it

Received: Sept 07 2018 | Accepted after revision: Oct 11 2018

Conflict of interest: None declared.

Support statement: ASAP-GxNet is supported by the Stop TB Partnership's TB REACH initiative, and is funded by the Government of Canada and the Bill and Melinda Gates Foundation.

References

- 1 Albert H, Nathavitharana RR, Isaacs C, *et al.* Development, roll-out and impact of Xpert MTB/RIF for tuberculosis: what lessons have we learnt and how can we do better? *Eur Respir J* 2016; 48: 516–525.
- 2 Weyer K, Mirzayev F, Migliori GB, *et al.* Rapid molecular TB diagnosis: evidence, policy making and global implementation of Xpert MTB/RIF. *Eur Respir J* 2013; 42: 252–271.
- 3 Pai M, Furin J. Tuberculosis innovations mean little if they cannot save lives. *Elife* 2017; 6.
- 4 Cazabon D, Suresh A, Oghor C, *et al.* Implementation of Xpert MTB/RIF in 22 high tuberculosis burden countries: are we making progress? *Eur Respir J* 2017; 50: 1700918.
- 5 Qin ZZ, Pai M, Van Gemert W, *et al.* How is Xpert MTB/RIF being implemented in 22 high tuberculosis burden countries? *Eur Respir J* 2015; 45: 549–554.
- 6 STOP TB Partnership. TB REACH Wave 6. www.stoptb.org/assets/documents/global/awards/tbreach/Wave%206%20Selected%20Projects.pdf
- 7 Unitaid. Tuberculosis Diagnostics Technology Landscape 2017. <https://unitaid.eu/assets/2017-Unitaid-TB-Diagnostics-Technology-Landscape.pdf>
- 8 Cabibbe AM, Trovato A, De Filippo MR, *et al.* Countrywide implementation of whole genome sequencing: an opportunity to improve tuberculosis management, surveillance and contact tracing in low incidence countries. *Eur Respir J* 2018; 51: 1800387.
- 9 Cabibbe AM, Walker TM, Niemann S, *et al.* Whole genome sequencing of *Mycobacterium tuberculosis*. *Eur Respir J* 2018; 52: 1801163.