The "computer *janch*" for TB: Locating the Rolling out of GeneXpert in Nepal

Rekha Khatri and Ian Harper

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Introduction:

IH and I were at the NATA [National Anti-Tuberculosis Association] lab in Biratnagar. After a brief meeting with the clinic in-charge, he introduced us to the lab technician with whom we went to the microbiology lab. On entering the lab, we saw the GeneXpert machine at one corner of the room on a table. There were large batteries beneath the table to support the Xpert. In the lab, there was a bio-safety cabinet, microscope and a dysfunctional autoclave. A sink was at another corner of the room where the staining is done. There was a table near the cabinet where a person was doing some paper work. We learnt later that students studying lab assistant course come to do three months of internship at NATA [on the job training] and the person doing paper work was one of the students. This table was near the window from where people asked for their reports. We sat on the chairs to observe the lab technician performing tests in the GeneXpert. The lab technician, also the in-charge was explaining to us about how the samples are processed and what issues are faced in operating Xpert. A notice of Performance Based Overtime Payment for GeneXpert Centre Staff was pasted on the wall above the Xpert by IOM. We were observing how he processed the sample in the Xpert and were facing away from the window from where people were peeping in and also asking for their reports. We heard a man coughing at the window and peeping in to ask for his report. The intern who was at the table doing some paper work replied to him, "Your test is being done by a computer and it will take a while to get your report [tapain ko ***computer janch*** *bhairakheko chha..ekchhin ma report aaunchha*].

Fieldnotes, RK, December 1, 2013

The *computer test* as referred by the intern is the GeneXpert[1] technology which has recently been introduced in Nepal for early diagnosis and early treatment for the Tuberculosis (TB) patients under High Burden Disease Countries (HBDC) scheme. WHO defines GeneXpert as, "Xpert MTB/RIF is an automated, cartridge-based nucleic amplification assay for the simultaneous detection of TB

[1] Developed by Foundation for Innovative New Diagnostics (FIND) and Cepheid Incorporated

and rifampicin resistance directly from sputum in under two hours"[2]. For simpler understanding, GeneXpert, commonly referred as Xpert is a technology that detects TB and rifampicin resistance in just two hours of processing the sample. It is operated from a computer. The conventional method of TB diagnosis is sputum microscopy which takes at least two days to get the results. The Xpert is considered to have better sensitivity than sputum microscopy, i.e. even when the presence of bacteria is few in the sample, Xpert can diagnose the patient with TB unlike in sputum microscopy which is considered to have poor sensitivity and poor predictive value (Zeka et al, 2011). It is also considered better as it can detect the resistance of Rifampicin, one of the powerful drugs for treatment of TB.

This paper is an attempt to describe the process of introduction of the Xpert technology in Nepal. In doing so, we will discuss the actors involved in this process, i.e. National Tuberculosis Centre and its partners who are NGOs and INGOs. Through the issues raised in the process of establishing the Xpert, we present a discussion mainly on the nature of ownership of the programme in the context of demands for incentives to use this technology when government and I/NGOs are partners. We also discuss the sustainability of the technology in light of its requirement and maintenance and also the sustainability of the performance of the staff involved.

The context:

The national average for case finding of Tuberculosis in Nepal has remained between at 70%[3] for almost a decade now. Nepal Tuberculosis Programme (NTP) has an objective to reach the case finding rate of 82% by 2015 nationally. Accordingly, a new technology in detecting tuberculosis has been introduced in Nepal from 2011 under the TB REACH Programme supported by Canadian International Development Agency to increase early case detection of tuberculosis. So far, sputum microscopy has been used as the basic test to diagnose TB in people based on physician's recommendation. This new technology, called GeneXpert, endorsed by WHO in 2010 for implementation in resource limited settings (Lawn and Nicol, 2011), is considered powerful as it is considered to detect the tuberculosis bacteria even in the samples that are not diagnosed as positive from the sputum microscopy. It also determines whether the TB bacterium in the patient is Rifampicin resistant or sensitive, i.e. the test result determines the condition of the TB patient in advance so that they can be put on medication regime accordingly.

[2] http://www.who.int/tb/laboratory/mtbrifrollout/en/
[3] National Strategic Plan (2010-2015), Implementation of Stop TB Strategy

Currently there are 22 Xpert machines in the country. The technology was first introduced by International Organization of Migration (IOM) under TB REACH grant and has now been introduced by National Tuberculosis Centre (NTC) and Health Research and Social Development Forum (HERD). The Xpert machines have been functional in close co-ordination with the government body, National Tuberculosis centre and mostly are operated by the government lab staff in the district public health labs apart from two mobile vans with diagnostics and a laboratory of its own by HERD. The introduction of this technology is approved and facilitated by National Tuberculosis Centre.

Methodology:

This paper results from an ongoing ethnographic study being conducted to understand TB labs and the impact of new Xpert technology among the health workers and in the National TB programme in the country. We have closely followed and observed the roll out of the Xpert from HERD as we are also based there. We accompanied the Xpert team during installation of the machines, training and orientation of the field staff including district stakeholders, observed the operation of the Xpert in different labs and have interviewed the lab staff and District TB-Leprosy Officers (DTLO) in different sites. We also interviewed and interacted with managers who manage the implementation of Xpert in these different sites. We observed the interaction among the health workers, between health workers and HERD team during installation and orientation. In addition to the installation process and use of the Xpert, we have also interacted with the lab staff about their work and what introduction of Xpert means to them and the TB programme. Since the data collection phase is ongoing, the paper is limited in encompassing views from all the actors, especially from government officials at higher authority.

The social life of Xpert:

A technology comes to life after series of planning, engagement, co-ordination and negotiations. In this section, we attempt to understand how Xpert got its social life through these series of process. The introduction of this technology came as a result of intensive co-ordination and discussion between the partners and National Tuberculosis Centre (NTC). National Tuberculosis Programme governs all the TB related activities in Nepal. All the activities related to TB should be conducted in close co-ordination with National Tuberculosis Centre (NTC). This study was also presented at TB

Control Network [TBCN][4] meeting and was approved by the NTC. The introduction of the technology can be divided in two phases: Co-ordination and Installation.

Co-ordination phase: As mentioned earlier, the first organization to introduce Xpert in Nepal is International Organization for Migration through the TB REACH grant. During an interview, the manager of this project shared about the preparatory phase for the Xpert introduction. He shared, ".....Everything was discussed beforehand. From August, 2011, the discussions with NTP authorities had begun. There were meetings with Regional Health Directorate in Eastern Region. Meetings and discussions were also carried out with Regional TB Leprosy Officers. In every implementing district, a baseline was conducted to assess the microscopic centre."Similarly, a close observation of the TB REACH programme at HERD also revealed that a lot of time has to be invested in the co-ordination before the actual implementation of the programme. Unpacking these co-ordination efforts, an officer managing the TB REACH programme shared, "We visited NTC to discuss on how to launch programme and take it to district level…we discussed on identifying and informing target groups, finalize tools, forms and format for the programme and also planned for co-ordination." He further shared that NTC wrote letters to the region [Regional Health Directorate] and region wrote letters to the districts [District (Public) Health Office] for installation of Xpert. He also mentioned about the co-ordination meetings conducted at regional and district level informing about the plan for Xpert installation. As the partners have to essentially function within the government system, there has to be multiple levels of co-ordination with different layers in the TB programme as shared by our participants.

Installation process:

December 2011 was a hectic month as it took all the month to install the machine in the health facilities. We had to check for electric supply. We provided UPS and generators. Normally, microscopic centres are not spacious. Even though the GeneXpert doesn't take much space we had to make space for it in the existing labs.

Programme manager, IOM, TB REACH project

We travelled with TB REACH team from HERD for the installation of Xpert machine to Surkhet. The team comprised lab personnel from NTC, TB REACH co-ordinator from HERD and Cepheid's local agent. This team was scheduled for installation of Xpert in Far-western, Mid-western and western

[4] A network of NTP and its partners established in 1992
http://www.stoptb.org/countries/partnerships/np_npl.asp

region. There was also another team comprising people from HERD, IOM and NTC for installation of the Xpert in Central region and western region. These installation routes were finalized by NTC. For the installation in Surkhet, the team carried the Xpert machine and computer to Surkhet from Nepalgunj and the co-ordinator explained that they had the machines delivered earlier at Nepalgunj from NTC truck.

GeneXpert is a small machine, a size of a small regular printer which has modules in it where the automated cartridge with sputum sample are processed through instructions in computer and it gives results in two hours. The machine is linked with the computer and it can fit in small space but as mentioned in the quote above, spaces had to be created within the existing lab structures which depended on the willingness of the concerned authorities in the districts. The machines were being installed at government labs mostly and the team had varied experiences in generating interest in the authorities to install the machine in the labs. While some labs like Doti and Surkhet were welcoming to the team and provided space easily by rearranging different equipment in the lab, the team faced difficulties in installing the machine at Dhangadi despite the machine belonging to NTC. A member of the team shared, "There was no infrastructure for machine installation at the hospital, neither the hospital officials showed any interest to understand about the machine and prepare for its installation." The team also shared that they convened a meeting of the related stakeholders to explain about the machine and its importance and they thought that this meeting has created a kind of pressure for the hospital to prepare for Xpert installation.

In addition to the Cepheid's representative who installs the machines, the installation process also had to be co-ordinated with the local suppliers of the batteries and required electricians who could connect the batteries to the system so that there is uninterrupted power supply to the machine which is a mandatory requirement for the Xpert machine to function. And the system also required internet access so that the data could be accessed through central server.

Managing different requirements of the installation process and installing the Xpert is some indicative of how things function in the government setting. The installation team shared that there was communication from NTC about the process which didn't seem to be enough. Our participants shared about the communication from centre to region and region to district and some co-ordination meetings; however the government agencies at district level didn't seem to quite co-operate in certain instances as they might not be aware of the technology and its importance. A team member reflected on this process as he said, "Letters are not enough....they do not understand the importance of this technology." The absence of adequate engagement of the district level

officials could have resulted in this problem and therefore there was no ownership to the process. Not undermining the importance of a new effective technology, the process of engaging the stakeholders for it also seem to be significant in bringing the technology to use and own it. Despite the issue, the machines did get installed and orientation programmes were organized and a significant factor contributing to this process in our observation was the use of individual relationships and network. One of the program managers of the TB REACH project was a government employee who worked as TB-Leprosy Officer at both district and regional levels for a long time.

Use of relationship/network: We had accompanied the manager during orientations of field staff for the TB Reach project in different districts in central and far western development regions. HERD has two mobile vans equipped with fluorescent microscope and a Gene Xpert enabling diagnosis services for people who do not have readily access to the health facilities. These vans operate mainly in two routes *viz* (i) Central Development region and (ii) Western, Mid-western and Far-western Development Region. The active case finding through this project is being implemented in 29 municipalities of 22 districts. Volunteers and outreach workers are recruited for the purpose in these districts under the aegis of District Public Health Office (DPHO) and the Regional Health Directorate. Since the project focuses in targeted groups[5], the volunteers and outreach workers are given a one day orientation focussing on screening the people in the target areas, screening them with four standard questions for TB and identifying suspects, collecting sputum samples from the suspected people and carrying them to the district laboratory for testing and again taking the results back to the people. The volunteers and outreach workers for the district are selected by the respective district public health offices and the orientation programmes are conducted under the chairpersonship of the District Public Health Officer and is conducted by the respective DTLOs. The technical aspect is covered by the HERD team. In addition to the volunteers, outreach workers, DTLO and DPHO chief, in some places, the orientation is also attended by staff from lab and DOTS centre so that they are aware of the programme. The lab personnel are expected to do the regular sputum microscopy for the samples brought by the outreach worker where there is no GeneXpert. The mobile vans travel to these districts in every 3 months to provide Xpert services for the people. The outreach worker and volunteers plan the van's schedule in liaison with the District TB-Leprosy Officers.

[5] The target areas for the project are urban slums, factories, prisons, people living with HIV/AIDS, household contacts, diabetics and migrants.

We followed this process as part of our fieldwork and observed how the manager organized these orientation meetings. Being one of them earlier, he had known almost all the District TB-Leprosy Officers and he first used to contact them to discuss about the programme and meet the District Public Health Officer through the DTLOs. The regional health directorate had written letters to the concerned district requesting for recruiting outreach workers and volunteers and also informing about the orientation programme on the introduction of Xpert technology. One evening after he came back meeting one of the DTLOs in a district in Central Terai, he said, "The 'system' doesn't work at all....everything depends on personal networks and relationships...bureaucracy should be run by a system irrespective of whoever person comes but it is not so....everywhere we go, we have to see whom we know...I have known the DTLOs and some DHOs as I had worked with them or studied with them before and that has been helpful as you have seen but one has to rely on personal networks to get things done....". He further said, "It either has to be your network and when you don't have network, you put forward money in the form of incentives to get things done and that is what other organizations implementing TB REACH had to do." This had come as a response as selection of field staff and their orientation was stalled in another district. This powerful expression from a former government employee reveals how difficult it is to get things done in the government system even in the programmes that come as a part of the government programme but is implemented by the NGOs.

Demands for Incentives: Understanding Ownership

TB is public health problem and this programme of active case finding is NTC's priority programme....the government alone cannot work towards controlling this problem and therefore it requires support from NGOs and INGOs.

RTLO, Far western region

The government of Nepal has made huge investment in TB but hasn't been able to control the disease...the resistant TB cases are on rise as well...This programme is also part of NTP and is supporting government through active case detection.

District Public Health Officer, Kanchanpur

Various literatures suggest importance of government and NGO collaboration or partnership. The engagement of NGO with public sector has been discussed as important to address issues of equity and quality improvement of the services while dealing with the issues of access and responsiveness

of the system (Ejaz et al, 2011). In discussing government-NGO collaboration in Bangladesh, Ullah et al (2006) argue that NGOs are considered to be having strong local reach to areas where health care services are either absent or inaccessible and thereby creating spaces for the growth of NGOs and other voluntary organizations and taking responsibility for providing much of country's health and social welfare services. While the importance and necessity of government and NGO can be discussed and examined, a critical issue of ownership and its subsequent implications to the programme also draws our attention and in this section we aim to locate the demand for incentives in using the Xpert within the realm of ownership.

The above quotes reflect the importance of NGOs/INGOs in the National TB programme. The government officials recognize that National TB Centre alone cannot implement and reach the target envisioned by the National TB Programme and therefore partners are required to help government reach its goal. The official website of NTC has also acknowledged the role of its partners by enlisting and describing their activities.[6] A case study of TB programme in Nepal (Hamlet and Baral, 2002) had identified consistent high level technical assistance from its partners as one of the key reasons for NTP's success. The NGOs that work in the TB sector in Nepal are mostly partners of the TB programme. They are also members of TB Control Network, which is an important platform for national policy, strategy, planning and guideline development[7]. The partnership also extends to the implementation of the activities within National Strategic Applications (NSA) as a part of funding mechanism of global fund where the NTC is principal recipient while different NGOs are sub recipients. These NGOs conduct the programmes assigned by NTC according to the government rules and regulations. It is interesting to examine how to understand the issue of ownership in such partnerships and an insightful question for this could be: Whose programmes are they?

The same question is pertinent in the TB REACH programme as well although the nature of the global fund programmes and TB REACH are different. However, the TB REACH programme has been sanctioned by the NTC and is conducted mainly to contribute to the national case finding to meet NTP's targets. But the programme seem to be an additional work where it has been implemented and therefore the issue of financial incentives has been a central issue in the roll out of the Xpert which demands to be understood in a particular context.

[6] http://nepalntp.gov.np/index.php?view=page&id=73
[7] http://www.stoptb.org/countries/partnerships/np_npl.asp

Different organizations had conducted TB REACH project using sputum microscopy or GeneXpert which were tested in the government labs. The organizations had been paying the lab staff on per sample basis or the number of tests from the programme and therefore the lab staff expected the same provision when HERD introduced the GeneXpert technology. In addition to the lab staff, the incentives are also given to DTLOs, DHOs and in the region as well. A programme manager from IOM said that they didn't have budget for co-ordination initially and started without giving any incentives but it wasn't effective. He said, "You can compare the results and performance from here [IOM site] and government institution....We installed Gene Xpert in Chandranigapur in September [2013] but there has not been any tests so far [December, 2013]." Similarly another programme manager from IOM gave details of the incentives provided by IOM, "The tests were few in number and therefore after May, 2012, we had to start performance based incentive scheme. Initially, we used to give Rs. 5000 to each institution per month till May but after that, we maintained that institution that tests more than 100 people per month would be provided incentive of Rs. 10,000." He also shared about providing incentives to DOTS people, RTLOs, DTLOs and others and maintained that on an average, they spend Rs. 22,000 per district per month as incentive. These incentives are given in cash as we witnessed the lab and the DOTS people receiving money from IOM in one of the districts in Eastern Terai. The TB REACH team has to meet certain targets mentioned in their proposal and when the results were not as expected in the initial days, they incentivised the process which helped them to meet their targets. Since the grant holding organizations of TB REACH doing both sputum microscopy and GeneXpert started incentivising the system, it became established in the system and became difficult for HERD who didn't want to give financial incentive directly on per case basis. One of the programme managers responded, "The government staff is all used to receiving additional incentives and now they don't want to work without it and therefore there have been problems in implementation." Another programme manager said that this 'unmanageable' problem is because NTC didn't act on time. He said, "NTC is the focal point of TB related activities including the TB REACH programme. It didn't follow up the incentives related issue when different organizations started giving money to lab people, DTLO, DHO and RTLO and now the problem has been 'unmanageable'...had NTC made some norms in the beginning, there would have been no problems now".

During our field visits with the TB REACH team from HERD, the major concern of the lab people in the districts was of incentive. All of them asked about their *sewa-subidha* (benefits). Even the DTLOs asked what the benefits are in the project. In one district in Far-west, the District Public Health Officer asked about the provisions for incentives for lab and said, "You all know that no work is

done these days without incentives." The lab workers in one of the districts in central Terai mentioned that they have received incentives from FAITH and BNMT and they expect the same from HERD as well. The Medical Laboratory Association of Nepal (MeLAN), which is the association of laboratory personnel, also got involved in the incentive issues. During the orientation process in the districts, we witnessed the programme manager receiving several calls from lab staff and the representatives of MeLAN asking about the provision of incentives for the HERD project without which they wouldn't be performing the tests. The programme manager always responded that there will be incentives in the form of capacity building workshops for the lab staff which has been discussed with the director of National Tuberculosis Centre (NTC) as well. He responded, "We are thinking as a system here...it is not anybody's individual work. This programme is for people and we will follow the directives of NTC." The provision however was not quite accepted by the lab staff. One of the programme managers at HERD mentioned that the NTC director had clearly told not to pay incentives but it seemed that without incentive, the lab workers weren't interested to do any work. A couple of months lingered in absence of an agreed modality of incentives for the lab workers while HERD maintained that it will follow whatever the NTC will agree on the incentive model for the lab. The RTLO had mentioned that it has been very difficult for him as he has been asked about the incentive provisions from the districts and this had to be reached to a decision.

Under the leadership of Central Regional Health Directorate, a meeting with the lab workers in presence of HERD members agreed on an incentive model to be provided to lab and the District TB Leprosy Officers (DTLOs). The main focus of this agreement was equal treatment of the lab and the DTLOs. The power struggle of these two bodies/positions were witnessed during our field visits and it is an emerging issue which shall be discussed in detail elsewhere but it is still relevant to briefly mention it here because that affected smooth rolling out of the Xpert machine. In the government system, the focal person for the TB and leprosy programmes in the district is District TB-Leprosy Officer and the activities are introduced through them. The introduction of this technology however was not only within the premise of the DTLOs but rather demanded equal engagement in deciding the role of the lab and benefits accordingly. During one of our field work in central Terai, a lab in-charge said, "DTLO can't be the only focal person in the district for the TB and leprosy programme.....the lab supervisor should be included as well." He produced a letter signed by the NTC director two days before we were in the field in late January, 2014. This letter mentioned that every programme related to TB and leprosy should constitute a district level committee with the DHO, DTLO and lab supervisor and the programme should be done in accordance with this committee. The lab supervisors have read this letter as an instrument that has redefined their role

in par with the DTLOs and therefore argued that they would define the use of laboratory of their district in the programmes being introduced in their district which indicated that they wouldn't perform any tests of any programmes without their benefits being decided and agreeable to them.

A manager commented on this issue, "The entire debate of incentives now has been focussed on whom to give incentive and on what basis....whether to give according to the work performed or according to the position." He indicated towards the system where there are District Health Officer, DTLO and lab supervisors and whether they all should get incentives or lab personnel who are engaged in performing the tests. The activities in one district in central Terai have been stalled precisely because of individual differences among the people in three above said positions.

The entire issue of provisioning financial incentives to the government staff in introducing a new programme needs critical examination and discussion because it presents a particular situation that posits a complex understanding and issue of ownership of programme when government and NGOs are partners. In this particular case of introducing Xpert technology to reach a particular national goal and provide better services for people, the ownership of the programme is not entirely clear. One of our participants managing the Xpert programme responded, "This is NTC's programme but there is difference in saying and doing...we think NTC is responsible but the sense of responsibility is not seen in NTC." Several questions arise in an attempt to understand the issue of ownership in this particular programme. As mentioned earlier, the Xpert is installed in government labs and is operated by the government staff in the lab. Government resources (slides, reagents, microscope, staff etc) are used for the purpose except for Xpert specific requirements like falcon tubes and cartridges. So, when the government has agreed to use its infrastructural, material and human resources for a programme that has been introduced within its system, how should the demand of incentive from lab staff and others to be understood? And, if the programme is entirely responsibility of an NGO, on what basis are they allowed to mobilize the government resources?

This calls for wider discussion around the nature of partnership that's functional between government and I/NGOs in the country, especially within the National Tuberculosis Programme where non-government organizations are strong partners and contributors. The idea of spaces for non state actors exists within the backdrop of inadequacies of government sector to provide public good on their own in efficient and effective manner owing to lack of resources and management issues (Nishtar, 2004). This seems to be true in the case of tuberculosis programme in Nepal as well. However, exploring the partnership through the introduction of Xpert reveals that there aren't clearer terms of understanding between the government and I/NGOs and therefore programme

bears a negotiated implementation even when introduced to support government for larger public benefit. It also raises a question on the nature of partnership between the state and non-state actors and how it is outplayed in everyday basis and at all levels of government, from decision makers to implementers.

At this outset, the government's facilitation and relenting to providing incentives only points out to a weak governance mechanism where an institution hasn't been able to establish and implement its programme in a system. This can also be understood in a broader light of weakening state and therefore weak governance. Regarding the incentive issue, a programme manager said, "The lab staff has limited working hours. Even though the daily duration of work is from 10 am to 2 pm, they generally start working from 10:30 and would work till 1 pm only. It takes two hours to run a batch of tests." He made a point that incentive helps the lab staff perform for longer hours. The working hours of the lab staff in the government is generally divided in two phases i.e. the lab work is generally done between 10 am-2 pm and from 2pm-5 pm, they are expected to do recording and reporting and other administrative tasks. However, in practice, it is difficult to find staff in the facilities after 2 pm mostly because they go for private practice. A programme manager said about this practice, "Most of the lab staff in the government operates their own private labs which they attend after 2 pm and therefore any new programme becomes burden for them because it requires their time and hampers their private work." As a way of understanding the incentives, it can be viewed as further weakening the system instead of making the staff adhere to their responsibility and follow the procedures. These issues demonstrate multi facets of the government system, staff and governance in present day Nepal. On another context of maintaining quality of work, a quality control officer had maintained about growing impunity among the staff because of their political affiliation and network and it could be a possible angle to look through why it is difficult to demand staff to understand their work and take ownership. This is a reflection of larger polity where institutions are weak and individuals/unions are strong and therefore any new programme irrespective of its importance and benefits have to negotiate with this weakening state machinery and please individuals rather than operate in an established system of governance.

Sustainability of programme:

While the demand of incentive poses multiple questions of ownership, nature of government-NGO collaboration, weakening state and governance, issues of sustainability also follows closely within these conundrums raising questions on state's capacity and sustaining the performance of the staff. GeneXpert is expensive and very sensitive machine which requires uninterrupted and stable power

supply, protection from vibration, annual calibration of modules, virus protection and a strong logistics supply system (Piatek et al, 2013). One cartridge costs around USD 10 and once the funding of TB REACH runs out, the implementation and operation of this technology directly comes under NTC. In addition to managing the operational requirement of the technology, NTC could also face challenges to maintain the performance of the staff who have so far been performing largely because of incentives in the backdrop of NGOs as implementing partners of the technology. But this is not a one-off programme and is introduced within the system and with TB remaining a public health threat with rise in resistant cases, the use of the technology will be even more significant and possibly could demand expansion which means continued engagement of government staff. The issue then would be the performance of the staff who is only responding to the incentives in operating the new technology and the challenge would be to sustain the performance when the government directly implements.

Conclusion:

Introduction and implementation of a particular technology extends beyond the technical milieu of curbing disease, rather is situated in complex socio-economic and political environment and culture of a particular programme. In this paper, we attempted to locate the introduction of gene Xpert technology within the 'partnership' of NGOs and National Tuberculosis Centre, a government body and have highlighted the issues that have been observed and discussed in the process. Following the preparation, installation process of Xpert and orientation of the concerned personnel in the districts, we have been able to understand and navigate through the implementation of National Tuberculosis Programme and its material, infrastructural and human resources and could draw the backdrop of locating the Xpert. We have raised some pertinent and significant questions on the nature of partnership, ownership and sustainability of programme through the issue of incentives being given to and demanded by the government staff while implementing the GeneXpert technology.

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