



IMPLEMENTATION PLAN FOR ISONIAZID PREVENTIVE THERAPY IN GHANA

EPIDEMIOLOGY of TB and HIV in GHANA

It is estimated that there are 290,000 PLHIV in Ghana with over 100,000 on antiretroviral therapy (ART) in a country with HIV prevalence of 2.4% among ANC clients.¹ The TB epidemic is generalized across the country. Preliminary data from the National Tuberculosis Prevalence Survey, 2013 estimates about 290 TB patients (all forms) per 100,000 population, with sputum smear positive TB at about 77 per 100,000 population (Epidemiological Situation of TB in Ghana).²

Hospital studies prior to initiation of TB/HIV collaboration in Ghana showed HIV prevalence among TB patients to be between 25-30% and that as many as 50% of patients with chronic cough could be HIV positive.^{3,4,5,6} In 2016, 23% of notified TB patients in Ghana were HIV positive.⁷ Since the implementation of the first guidelines was undertaken in 2007, there has been an improvement in TB case detection and management among PLHIV in Ghana. An AIDS-impact model projects an additional 30,000 new TB cases in Ghana attributable to HIV/AIDS annually by the year 2015. Based on the routine programme monitoring report data, in 2016, 74% PLHIV on ART were screened for TB, whereas 84% of people with TB were tested for HIV. In the same year, of those HIV tested positive TB patients, only 43% were put on ART care.

HIV is the strongest risk factor for developing tuberculosis (TB) disease in those with latent or new *Mycobacterium tuberculosis* infection. The risk of developing TB is between 20 and 37 times greater in PLHIV than among those who do not have HIV infection. TB is responsible for more than a quarter of deaths in PLHIV. In response to the dual epidemics of HIV and TB, the World Health Organization (WHO) has recommended 12 collaborative TB/HIV activities as part of core HIV and TB prevention, care and treatment services. They include interventions that reduce the morbidity and mortality from TB in people living with HIV, such as the provision of antiretroviral therapy (ART) and the Three I's for HIV/TB: intensified case-finding of TB (ICF), isoniazid preventive therapy (IPT), and infection control for TB.⁸ Of the Three Is, ICF and Infection Control are being implemented with IPT being provided only for child contacts of TB patients at programmatic level as part of the National Strategic Plan. IPT was also being implemented in individualized cases under supervision by clinicians who needed to prescribe IPT for PLHIV but is yet to be implemented at programme level due to inability to rule out TB disease.



Ghana is now ready to implement IPT because she has the capacity to rule out TB disease using digital Xray and GeneXpert.

The World Health Organization (WHO) recommended regimen for TB preventive therapy in adolescents and adults living with HIV is isoniazid [isonicotinic acid hydrazide (INH)] 300 mg daily for at least 6 months. This is known as Isoniazid Preventive Therapy (IPT).

RATIONALE FOR IPT IN GHANA

Tuberculosis is a leading cause of death and morbidity among PLHIV. In order to accelerate the reduction of TB burden among PLHIV, WHO has recommended IPT, an evidence-based intervention, since 1999 to reduce the burden of TB in high risk populations. IPT is one of the strategies for TB control through reducing the number of potential active TB by preventing the progression of latent TB infection into active TB. IPT is known to reduce the risk of developing TB by 64%.⁹

GF-ATM NFM 2 application Technical Review Panel (GRP) has urged Ghana to take necessary steps to start IPT implementation.

The best way to decrease the burden of TB in a PLHIV is to prevent that person from contracting TB in the first place.

OBJECTIVES OF THE IPT PROGRAMME

- To decrease the risk of occurrence of new TB infection
- Decrease the risk of re-infection among patients who have had TB
- Decrease the risk of latent TB progressing to active TB

Prior to initiating IPT it is very important to rule out active TB disease using molecular diagnostic tools such as Xpert MTB Rif or Line Probe Assay (LPA). See Appendix A for IPT Algorithm when client presents with signs and symptoms and B is for clients presenting for review without any signs and symptoms of TB.

When IPT is indicated, patients shall receive a dose of 10mg/kg body weight and treatment duration shall be for a minimum of 6 months.

Indicators used to assess strategies to decrease the burden of TB among PLHIV include-

- Proportion of pre-ART/ART patients screened for TB



- Proportion of TB patients screened for HIV
- Proportion of TB co-infection among pre-ART patients
- Proportion of pre-ART/ART enrolled on TB treatment
- Proportion of PLHIV initiated on IPT
- Proportion of pre-ART patients eligible and initiated on ART

WHO IS ELIGIBLE FOR IPT?

All PLHIV who screen negative for TB which means they have no signs and symptoms suggestive of TB, Chest Xray is normal and GeneXpert does not detect MTB. If they have signs and symptoms suggestive of TB, they have to be fully evaluated and found not to have TB to be eligible for IPT.

Eligible clients for IPT therefore include-

- Adults,
- Children 12 months of age and above regardless of history of contact,
- Children <12 months age with history of contact
- Patients on ART >3months
- PLHIV who have completed a full course of anti-TB drugs
- High risk groups like children under 5 years with history of TB contact
- Prisoners and miners
- Health care workers in close contact with TB patients

Exclusion criteria

Patients with any of the following:

- Any symptoms or signs of active TB
- Excessive alcohol consumption
- History of liver disease or jaundice
- Patients on work up for ART initiation
- Peripheral neuropathy grade 2 or above
- Poor adherence history
- TB patients



PLAN

In the spirit of TB/HIV collaboration, both programmes under the Ghana Health Service are preparing to implement IPT having revised screening algorithms and M & E tools. Baseline information will be collected at intervention sites where IPT will initially be rolled out. The initial roll out will be at 27 sites with both digital xray machines and GeneXpert in the first year (2018). The justification being that it is easier to roll it out since they have both digital Xray and GeneXpert and are also ART sites so monitoring of the initial roll out will be easier. Healthcare workers from ART sites in Brong Ahafo, Central, Northern, Upper, East, Upper West and Volta Regions have already been sensitized about IPT and the supporting algorithms. 6 months after the roll out, there will be a post-implementation assessment so that lessons learnt will be addressed and utilized in the scale-up.

In the second year (2019), IPT will be scaled-up to sites that have either GeneXpert only (10) or digital Xray only (20). The third year, 2020 will see the scale-up to sites which hitherto had none of the machines including the 400 PMTCT sites which will be trained to provide ART in the NFM2.

ART sites in Ashanti (44), Eastern (33), Greater Accra (44) and Western (21) Regions will need training in IPT and the M&E tools. While the remaining six regions which have been sensitized will need to be trained in the use of the IPT M&E tools.

TABLE 1: LIST OF SITES WITH BOTH GENEXPERT AND DIGITAL XRAY MACHINES

| | REGION | DISTRICT | CAPITAL | DigXR | Xpert |
|----|---------------|------------------------|--------------|-------|-------|
| 1 | CENTRAL | Abura-Asebu-Kwamankese | Abura Dunkwa | 1 | 1 |
| 2 | GREATER ACCRA | Accra | Accra | 2 | 3 |
| 3 | EASTERN | Akwapim North | Akropong | 1 | 1 |
| 4 | BRONG AHAFO | Atebubu-Amanten | Atebubu | 1 | 1 |
| 5 | EASTERN | Atiwa | Kwabeng | 1 | 1 |
| 6 | ASHANTI | Atwima-Nwabiagya | Nkawie | 1 | 1 |
| 7 | CENTRAL | Awutu Senya East | Kasoa | 1 | 1 |
| 8 | EASTERN | Birim North | New Abirem | 1 | 1 |
| 9 | UPPER EAST | Bolgatanga | Bolgatanga | 1 | 1 |
| 10 | UPPER EAST | Builsa North | Sandema | 2 | 1 |
| 11 | ASHANTI | Ejisu-Juaben | Ejisu | 2 | 1 |
| 12 | GREATER ACCRA | Ga West | Amasaman | 1 | 1 |



| | | | | | |
|----|-------------|---------------------|----------------|---|---|
| 13 | BRONG AHAFO | Jaman North | Sampa | 1 | 1 |
| 14 | VOLTA | Jasikan | Jasikan | 1 | 1 |
| 15 | WESTERN | Jomoro | Half Assini | 1 | 1 |
| 16 | UPPER EAST | Kasena-Nankana | Navrongo | 1 | 1 |
| 17 | BRONG AHAFO | Kintampo North | Kintampo | 1 | 1 |
| 18 | ASHANTI | Kumasi | Kumasi | 2 | 1 |
| 19 | UPPER WEST | Nadowli-Kaleo | Nadowli | 1 | 1 |
| 20 | ASHANTI | Obuasi | Obuasi | 1 | 1 |
| 21 | WESTERN | Prestea-Huni Valley | Bogoso | 1 | 1 |
| 22 | NORTHERN | Saboba | Saboba | 1 | 1 |
| 23 | UPPER WEST | Sissala East | Tumu | 1 | 1 |
| 24 | NORTHERN | Tamale | Tamale | 1 | 1 |
| 25 | CENTRAL | Twifo-Ati-Mokwa | Twifo Praso | 1 | 1 |
| 26 | EASTERN | Upper Manya-Krobo | Asesewa | 1 | 1 |
| 27 | WESTERN | Wassa Amenfi East | Wassa Akropong | 1 | 1 |

TABLE 2: LIST OF SITES WITH DIGITAL XRAY MACHINE ONLY

| REGION | DISTRICT | CAPITAL | DigXR |
|---------------|-----------------------|-----------------|-------|
| ASHANTI | Ahafo-Ano South | Mankranso | 2 |
| VOLTA | Akatsi South | Akatsi | 1 |
| ASHANTI | Asante-Akim Central | Konongo-Odumase | 1 |
| ASHANTI | Asante-Akim South | Juaso | 1 |
| UPPER EAST | Bawku Municipal | Bawku | 1 |
| UPPER EAST | Bawku West | Zebilla | 1 |
| WESTERN | Bia West | Essam-Debiso | 1 |
| VOLTA | Biakoye | Nkonya Ahenkro | 1 |
| BRONG AHAFO | Dormaa | Dormaa Ahenkro | 1 |
| ASHANTI | Ejura-Sekyedumase | Ejura | 1 |
| EASTERN | Kwaebibrem | Kade | 1 |
| GREATER ACCRA | La-Nkwantanang-Madina | Madina | 2 |
| ASHANTI | Sekyere East | Effiduase | 1 |
| BRONG AHAFO | Sene West | Kwame Danso | 1 |
| UPPER WEST | Sissala West | Gowllu | 1 |
| BRONG AHAFO | Tain | Nsawkaw | 1 |



| | | | |
|------------|------------|---------|---|
| UPPER WEST | Wa | Wa | 1 |
| UPPER WEST | Wa West | Wechiau | 1 |
| WESTERN | Wassa East | Daboase | 1 |
| NORTHERN | Zabzugu | Zabzugu | 1 |

TABLE 3: LIST OF SITES WITH GENEXPERT ONLY

| REGION | DISTRICT | Xpert |
|---------------|-------------------------|-------|
| GREATER ACCRA | Ada East | 1 |
| ASHANTI | Adansi South | 1 |
| ASHANTI | Afigya-Kwabre | 1 |
| CENTRAL | Agona West | 1 |
| WESTERN | Aowin | 1 |
| ASHANTI | Asante-Akim North | 1 |
| ASHANTI | Asante-Mampong | 1 |
| GREATER ACCRA | Ashaiman | 1 |
| CENTRAL | Asikuma-Odoben-Brakwa | 1 |
| CENTRAL | Assin North | 1 |
| EASTERN | Asuogyaman | 1 |
| BRONG AHAFO | Asutifi North | 1 |
| BRONG AHAFO | Asutifi South | 1 |
| ASHANTI | Bekwai | 1 |
| BRONG AHAFO | Berekum | 1 |
| WESTERN | Bibiani-Anhwiaso-Bekwai | 1 |
| EASTERN | Denkyemba | 1 |
| BRONG AHAFO | Dormaa East | 1 |
| EASTERN | East Akim | 1 |
| NORTHERN | East Gonja | 1 |
| NORTHERN | East Mamprusi | 1 |
| CENTRAL | Efutu | 1 |
| WESTERN | Ellembelle | 1 |
| EASTERN | Fanteakwa | 1 |
| UPPER EAST | Garu-Tempne | 1 |
| CENTRAL | Gomoa West | 1 |
| VOLTA | Hohoe | 1 |
| WESTERN | Juabeso | 1 |
| VOLTA | Kadjebi | 1 |
| VOLTA | Keta | 1 |
| VOLTA | Ketu North | 1 |



| | | |
|---------------|---------------------|---|
| VOLTA | Ketu South | 1 |
| BRONG AHAFO | Kintampo South | 1 |
| VOLTA | Kpando | 1 |
| EASTERN | Kwahu North | 1 |
| EASTERN | Kwahu West | 1 |
| GREATER ACCRA | La-Dade-Kotopon | 1 |
| UPPER WEST | Lawra | 1 |
| GREATER ACCRA | Ledzokuku-Krowor | 1 |
| CENTRAL | Mfantsiman | 1 |
| VOLTA | Nkwanta South | 1 |
| EASTERN | Nsawam-Adoagyiri | 1 |
| WESTERN | Nzema East | 1 |
| ASHANTI | Offinso | 1 |
| BRONG AHAFO | Pru | 1 |
| WESTERN | Sefwi-Wiawso | 1 |
| ASHANTI | Sekyere South | 1 |
| GREATER ACCRA | Shai-Osudoku | 1 |
| VOLTA | South Tongu | 1 |
| BRONG AHAFO | Tano South | 1 |
| WESTERN | Tarkwa-Nsuaem | 1 |
| GREATER ACCRA | Tema | 1 |
| CENTRAL | Upper Denkyira East | 1 |
| WESTERN | Wassa Amenfi West | 1 |
| BRONG AHAFO | Wenchi | 1 |
| EASTERN | West Akim | 1 |
| NORTHERN | Yendi | 1 |



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GHANA IMPLEMENTATION PLAN FOR ISONIAZID PREVENTIVE THERAPY (IPT) UNDER NFM2

| Main activities | Detailed activities | Input/Unit cost description | Baseline | Yr1 (2018) | | | | | | | | | | | | Yr2 | Yr3 | Responsible unit |
|--|---|-----------------------------|----------------|------------|---|---|---|---|---|---|---|---|---|---|---|------|------|---|
| | | | 2017 | J | F | M | A | M | J | J | A | S | O | N | D | 2019 | 2020 | |
| Enhance coordination and planning of the implementation of IPT | Update Joint Programme Planning Policy and Guidelines for the Implementation of TB/HIV Collaborative Activities in Ghana to reflect new policy on TB Preventive Therapy using IPT | | By Dec. 2017 | | | | | | | | | | | | | | | NTP leading process, together with NACP |
| | Disseminate IPT clinical algorithm, M&E tools for use in Health Facilities providing IPT | | | X | X | | | | | | | | | | | | | NACP and NTP |
| Ensure continuous availability of commodities for IPT | Conduct forecasting and quantification exercise for the requirements for IPT for adults and children based on set targets | | End Oct., 2017 | | | | | | | | | | | | | | | NACP and NTP |
| | Develop distribution plan for INH based on | | End Oct., 2017 | | | | | | | | | | | | | | | NACP and NTP |



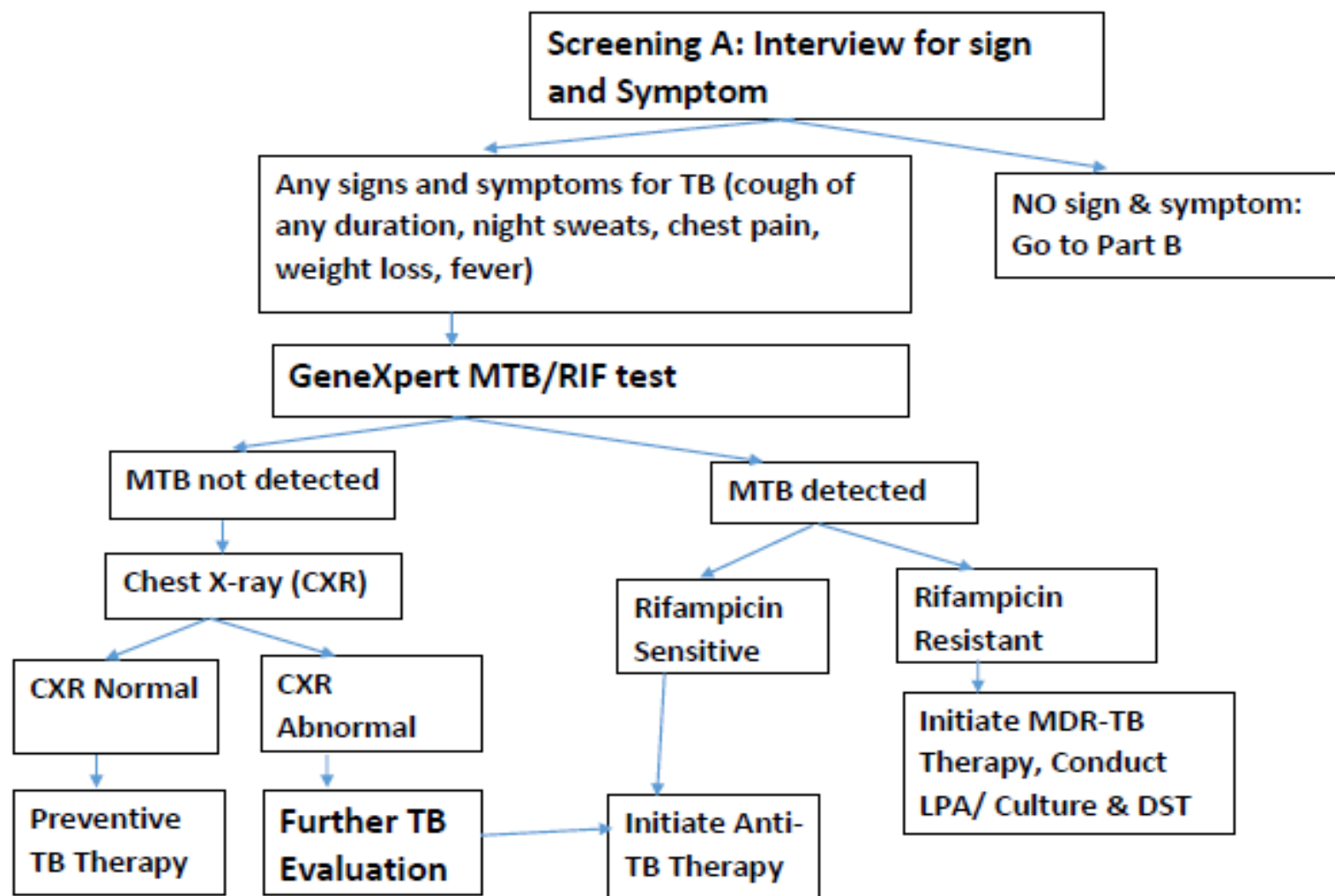
| Main activities | Detailed activities | Input/Unit cost description | Baseline 2017 | Yr1 (2018) | | | | | | | | | | | | Yr2 2019 | Yr3 2020 | Responsible unit |
|---|---|-----------------------------|---------------|------------|---|---|---|---|---|---|---|---|---|---|---|----------|----------|------------------|
| | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | |
| | Last Mile Distribution of products | | | | | | | | | | | | | | | | | |
| Strengthen human resource capacity to implement IPT | Train 710 health care workers in IPT, M&E tools and its LMIS in Ashanti (220), Eastern (165), Greater Accra (220) and Western (105) Regions | | | | X | X | | | | | | | | | | | | NACP and NTP |
| Implementation of IPT in phases | Pilot IPT in 4 TB/HIV high burden facilities in AR, GAR, VR, BAR | | | X | | | | | | | | | | | | | | NTP and NACP |
| | Analyse information from pilot, identify and learn from gaps in the pilot to improve upon the phased roll out of IPT | | | | X | | | | | | | | | | | | | NTP and NACP |
| | Roll out IPT in a phased approach, starting with facilities with both GeneXpert and Digital Xray machines | | | | | X | X | X | | | | | | | | | | NTP and NACP |
| | Roll out IPT in facilities with only GeneXpert or Digital Xray machines | | | | | | | | | | | | | | X | | | NTP and NACP |
| | Roll out IPT in all ART sites | | | | | | | | | | | | | | | | X | NTP and NACP |



| Main activities | Detailed activities | Input/Unit cost description | Baseline | Yr1 (2018) | | | | | | | | | | | | Yr2 | Yr3 | Responsible unit | |
|---|--|-----------------------------|----------|------------|---|---|---|---|---|---|---|---|---|---|---|------|----------------------|----------------------|--------------|
| | | | 2017 | J | F | M | A | M | J | J | A | S | O | N | D | 2019 | 2020 | | |
| Strengthen monitoring and evaluation of the implementation of IPT | Conduct supportive supervision visits by national, regional and district teams | | | | | | | | | | | | | | X | X | | | NTP and NACP |
| | Conduct national level onsite data validation exercise on a quarterly basis | | | | | | | | | | | | | | X | X | | | NTP and NACP |
| | Conduct quarterly M & E review meetings between HIV and TB at district, regional and national levels | | | | X | | | X | | | X | | | X | | | Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4 | NACP and NTP |
| | Strengthen GeneXpert and digital Xray services in support of the implementation of IPT (equipment, HR, reagents) | | | | | X | | | | | | | X | | | | Twice a yr | Twice a yr | NTP |



Algorithm for Screening and Diagnosis of TB in PLHIV, Part A





Algorithms for Screening and Diagnosis of TB in PLHIV, Part B

