**Additional file 1**

**Expected responses for knowledge assessments on molecular diagnostics; XpertMTB/RIF/GenotypeMTB/RIF for MDR-TB diagnosis**

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| **XpertMTB/RIF** |  | **GenotypeMTBDRplus** |
| **General description of the test** |  | **General description of the test** |
| WHO endorsed rapid molecular diagnostic test |  | WHO endorsed rapid molecular diagnostic test |
| Identify MTB DNA in both smear positive and negative PTB cases |  | Detect MTB in known smear positive PTB |
| Detect resistance of rifampicin |  | Detect resistance of Rifampicin and isoniazid |
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| **Clinical Application** |  | **Clinical Application** |
| Presumed TB cases suspected to harbor DR-TB regardless of age example all retreatment category |  | Presumed MDR-TB and known smear positive PTB case |
| Presumed TB cases in individuals living with HIV |  | MTB isolates screen/detect MDR-TB |
| Presumed TB and seriously ill regardless of the HIV status |  | Presumed isoniazid mono-resistance and or confirm Rifampicin detected with XpertMTB/RIF |
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| **Result interpretation and action** |  | **Result interpretation and action** |
| *Error, invalid or no results:*  Test failed Need to repeat |  | ***Invalid test result:***  Test fail to deliver appropriate results. Need to be repeated |
| *MTB not detected:*  Conduct a follow-on diagnostic evaluation especially for symptomatic presumptive cases |  | ***MTB not detected:***  No TB detected however the limitation for sensitivity in smear positive required alternative test like culture or XpertMTB/RIF |
| *MTB detected RIF resistance not detected:*  Start patients a drug sensitive TB regimen |  | ***MTB detected plus RIF and INH resistance not detected:***  This is a diagnosis of a drug sensitive TB and standard short course TB therapy can be initiated (6 months) as per WHO guideline |
| *MTB detected RIF resistance detected:*  Follow the algorithm below to identify the risk factor for MDR-TB |  | ***MTB detected plus RIF and INH resistance detected:+***  This is highly suggestive of MDR-TB but needs to be interpreted in the context of risk factors for drug resistance |
|  |  | ***MTB detected plus INH (only) resistance detected:++***  This indicates possible mono resistance to INH |

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| + If the patient has been previously treated for TB or has failed first line treatment, then risk of MDR-TB is high. In such a patient, a positive rifampin (RIF) resistance result is sufficient to initiate second-line therapy for MDR-TB. At the same time, a sample should be sent for liquid culture and complete drug susceptibility testing (DST). When the DST results come back in about 2 – 3 weeks, the MDR-TB regimen can be modified/customized, based on DST profile. |
| ++ While INH mono-resistance is not MDR-TB, such patients may have a higher risk of poor outcomes and amplification of drug resistance. Thus, a liquid culture *plus* full DST should be ordered to customize treatment. |