

Disease Surveillance in Low Income Countries: ICT Intervention for TB in Tanzania

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BACKGROUND The prevalence of tuberculosis (TB) is increasing in sub-Saharan Countries (Fig. 1). Success in eradicating TB rests on **early detection and notification of new cases** and effective treatment. Between 2005 and 2006, **progress in detection and notification has slowed**, increasing only marginally to 61% short of the 70% ultimate target indicated in the 'Stop TB Partnership' Global Plan [United Nations, 2008]. **The detection rate in Africa (46% in 2006) is furthest from the target.** TB surveillance has not yet had the impact on TB transmission and incidence needed to achieve the 'Stop TB Partnership' targets of halving the 1990 prevalence and death rates by 2015.

A visit to the **Region of Kilimanjaro, Tanzania in 2009** (Fig. 2) allowed us to assess the **Tanzanian Health System efficiency** at the community level, and the main factors interfering with TB case detection and notification. **Detection and surveillance** are hampered by the difficulty in tracing patients after lab tests to confirm TB diagnosis and monitor treatment efficacy. **Notification** to health authorities is delayed by up to 3 months due to lack of efficient communication systems. Hence, the persistence of bacilliferous individuals in the community, and **increased TB incidence rates.**

Number of tuberculosis cases per 100,000 population (excluding people who are HIV-positive), 1990, 2000 and 2006

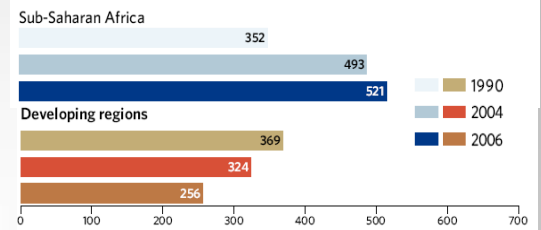


Fig. 1. The MDGs Report, United Nations 2008

OBJECTIVES We propose the **implementation of ICT Infrastructures** in the Siha District Health Facilities of Ngarenairobi, Kandashi and Naibili to overcome the loss of bacilliferous patients' traceability and clinical follow up at community level, and the inefficient notification across the regional competent health authorities (Fig. 3). The intervention (TuMAInI) is ultimately aimed at **reducing the TB burden in the area.**

AREA OF INTERVENTION

Region of Kilimanjaro (Siha District: Health Facilities of Ngarenairobi, Kandashi and Naibili).



Fig. 2

METHODS

ICT implementation in the area of intervention: (1) Data collection; Porting and Integration of Data produced at District Level; (2) Standardized Procedures on Survey System: Classification, Information Flow through shared and Exhaustive Glossary; (3) Identification of Set of Markers for addressing the Decisional Process; (4) Identification of Epidemiological Indices and their temporal and spatial monitoring; (5) Quality Assessment and Quality Control of District ICT team; (6) Collaborative Network between Peripheral Health Facilities and District.

Number of Internet users per 100 population, 2000 and 2006

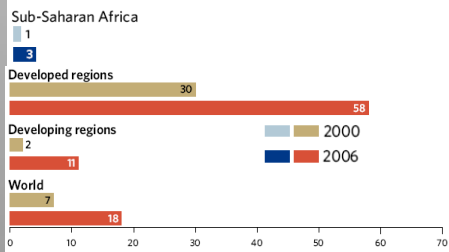


Fig. 4. The MDGs Report, United Nations 2008

RELEVANCE Reduction of TB incidence and mortality; improvement of general health, education, employment, and poverty reduction, by implementation of Internet connectivity and infrastructures (Fig. 4).

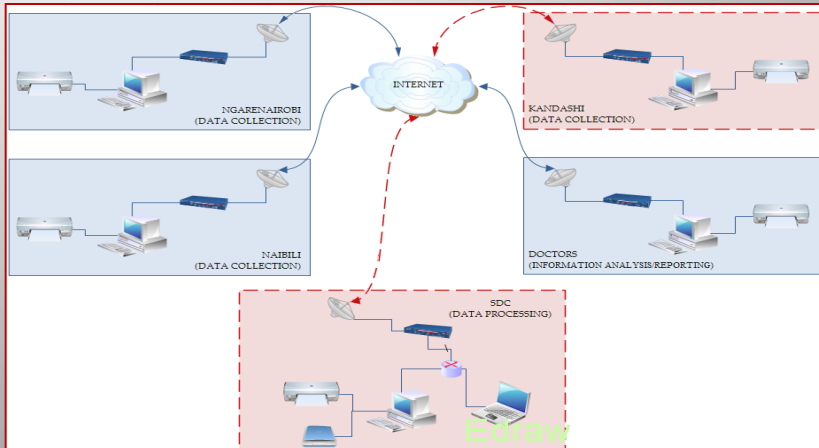


Fig. 3 – Connection and Infrastructures between Health Facilities