EVALUATION OF THE TUBERCULOSIS SURVEILLANCE SYSTEM IN WAKISO DISTRICT

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Abstract:

Introduction: TB (Tuberculosis) has been a serious problem in Uganda and a lot of effort has been put in place to fight it and this led to creation of the TB surveillance system in Uganda. TB was introduced in Uganda following the implementation of the Millennium Development Goals and the Sustainable Development Goals (SDGs) to reduce the prevalence of TB to acceptable levels. TB surveillance was introduced in Wakiso District in the year 2015 but since then there has been no evaluation carried out to establish its existence thus creating a need for this study to be done.

Objectives

The main objective for this study was: to evaluate the TB surveillance system in Wakiso district and in so doing, generate information that will help the District Health Team improve the implementation of the system.

The specific objectives were: to determine the Total TB cases registered (all cases, all forms) from October 2021 to June 2022 and to determine the TB case notification rate for new and relapse TB cases for all forms per 100,000 populations from October 2021 to June 2022.

Methods: The study was a cross-sectional study. The data was collected through the review of patients' archived records. Raw data was then entered into Microsoft Excel and later exported to SPSS for further processing.

Results: There was an overall increase in the number of TB cases and also there was a low notification rate for the TB although it was increasing at a slow pace. .

Conclusions & Recommendations: The study thus recommend the government and its partners to put aside more funding targeted to the strengthening the TB surveillance system in Uganda with main focus on Wakiso district so as to minimize the morbidity and mortality caused by TB.

Key words: Evaluation, Surveillance Systems, Wakiso District

Introduction:

Tuberculosis ranks high as a killer in those infected by HIV/AIDs; its presence acts as an especially significant trigger for transforming dormant tuberculosis into active disease due to these individuals' often compromised immunity (Wafula & Orishaba, 2022). TB stands as a deadly infectious illness affecting multiple parts of the body primarily in the lungs; it's widespread yet often overlooked due to its stealthy nature (Fish, 2020). Approximately one million people die annually due to tuberculosis. Approximately six million individuals annually comprise this figure; however, it is noted that only zero percent corresponds specifically here (Zawedde-Muyanja et al., 2020). Approximately two million individuals suffer from HIV infection (Baluku et al., 2022); however, nearly all fatalities result from this condition among underdeveloped regions primarily due to socioeconomic constraints impeding adequate TB diagnostics and therapies (*TB / Leprosy Control Program - Ministry of Health | Government of Uganda*, n.d.-a). In 2015, an estimate suggests approximately nine million additional cases occur

annually worldwide, while roughly one-third of humanity carries the bacterium Mycobacterium tuberculosis (Armstrong-Hough et al., 2017). At an extensive level, multidrug-resistant tuberculosis (MDR-TB), specifically Xpert MTB/RIF positive cases, is reported across seventeen nations globally, encompassing every continent (Izudi et al., 2020). In 2021, the global health situation revealed that there were approximately 1 million cases reported in 2018 (Baluku et al., 2022). Approximately two-thirds of humanity was exposed to tuberculosis bacteria in an estimated global health statistic released recently: nearly seven billion individuals have contracted this disease at some point during their lives worldwide (Bongomin et al., n.d.). Several earlier studies indicated that multidrug-resistant tuberculosis had spread globally across various regions and required urgent intervention measures (Agyare et al., 2021). A specific strain of mycobacterium known as M. tuberculosis causes human tuberculosis most frequent among all types (Izudi et al., 2020). Previous research suggests tuberculosis ranks as one of the most deadly infectious diseases globally (*TB Online - TB Infections Hit 90,000 a Year in Uganda, Overtake HIV Rates*, n.d.), causing approximately 1 million deaths annually (World Health Organization, 2004). Every year, 5 million people fall victim to tuberculosis, making it an international menace (Glaziou et al., 2015). Upon realizing TB's significant impact worldwide, the World Health Organization collaborated with other entities to establish standardized criteria for addressing this disease (Agyare et al., 2021). This led them to define "tuberculosis control" as successfully reducing the incidence rate among children aged 0-14 by approximately 1% according to their published in 2004 (*Defeat TB*, n.d.). Preventing and managing tuberculosis reduces its presence within communities by lowering rates of infection and occurrence while mitigating their impacts on health outcomes (*Vaccines | TB | CDC*, n.d.). In Uganda, monitoring systems were established across different healthcare facilities, requiring submission of bi-weekly, monthly,

quarter-yearly, and yearly updates on tuberculosis cases to local districts regarding both multi-drug resistant and rifampicin-resistant TB as well as treatment outcomes among previously treated individuals during the era when GeneXpert technology was utilized in rural eastern regions (Baluku et al., 2022). Approximately forty percent of cases occur within the borders of Uganda (The Republic of Uganda Ministry of Health, 2017). Amongst the strategies for managing tuberculosis infection is an integral part known as active detection coupled with care provision alongside preventive actions aimed at eradicating this disease (Frizelle et al., 2009). Based on historical data, goal number eight aims for zeroing out TB cases by 2015 while initiating an increase in disease prevention efforts globally (J.A.M., 1947). Thus evaluation of the available TB surveillance is very crucial for the prevention of TB which is a killer disease in Uganda (*Defeat TB*, n.d.).

Methods:

Study design

This was a cross-sectional study with a retrospective review of patient records from the District Health Information Software 2. This study was conducted in Wakiso district in September 2022.

Study setting

This study chose Wakiso district because of its location in the Central Uganda in the Kampala Metropolitan Area with very close proximity to Kampala the Capital City of Uganda.

After being curved out of Mpigi district, Wakiso was created with the main focus on the improvement of service delivery.

Study population

The study population took into account of details about TB cases that were registered from October 2021 to June 2022.

Sampling procedures

Records of all TB cases that were registered in all TB treatment centers of Wakiso district from October 2021 to June 2022.

Data collection methods

Archived records were used to obtain the Total TB cases registered (all cases, all forms) and the TB case notification rate for new and relapse TB cases for all forms per 100,000 population.

Data management and analysis

Data was entered and processed using Microsoft Excel 2010 and SPSS respectively. Data cleaning was performed to check for accuracy, consistencies, and missing values and variables.

Data collection tools

Checklists that pointed out the list of values needed and things to be done were used to obtain the data from the DHIS2 (District Health Information Software 2).

Data management and analysis

The data was extracted from the DHIS2 and processed in a Microsoft excel.

Data obtained from the checklists was coded, cleaned and entered into Microsoft Excel worksheet for analysis.

Coded data was entered into excel and total scores were summed up and expressed as a percentage for the individual value. It was from this score that a given quantity was rated.

Study variables:

Independents variables were the period names.

Dependent variables were the total TB cases registered and TB case notification rate for new and relapse TB cases for all forms.

Data quality control

Data was cross checked and proof read for any errors.

Ethical considerations

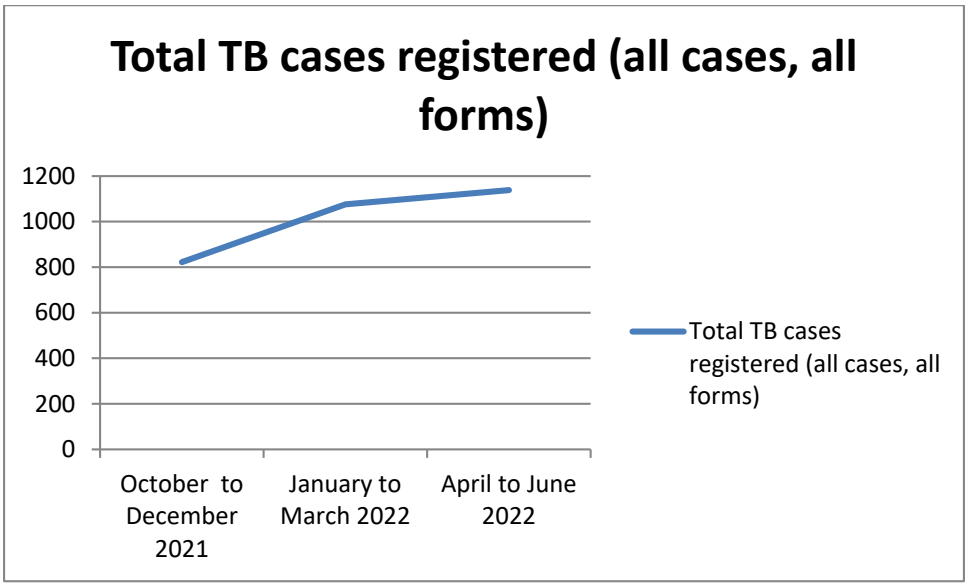
- Confidentiality and privacy of the patients' and information was maintained.
- Permission to access the DHIS2 was sought from the DHO Wakiso District

Results:

Table 1: Total TB cases registered (all cases, all forms)

Period name	Total TB cases registered (all cases, all forms)
October to December 2021	822
January to March 2022	1076
April to June 2022	1138

Figure 1: Total TB cases registered (all cases, all forms)

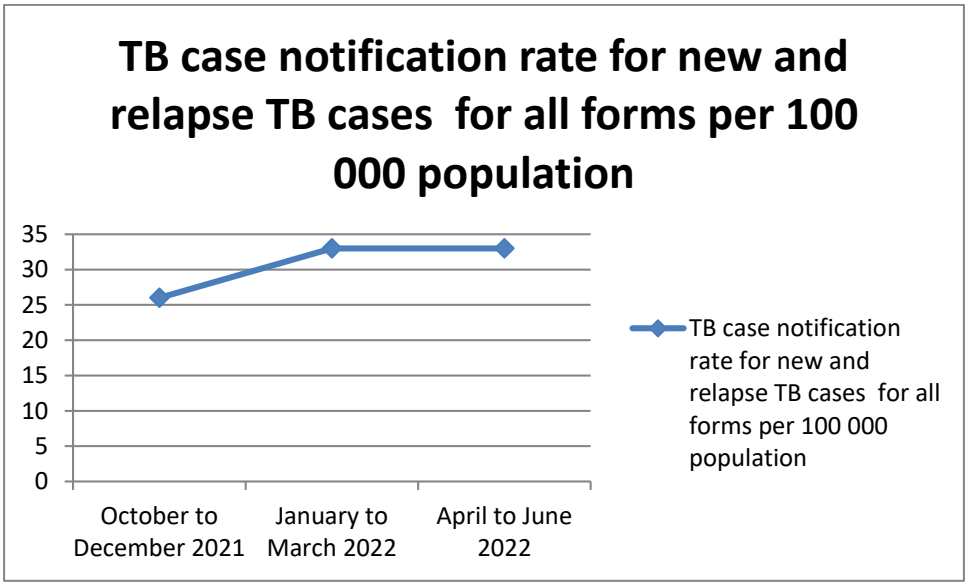


From Table 1 and Figure 1, the total number of TB cases of all types was 822 between October 2021 and December 2021, it increased sharply to 1076 between January 2022 and March 2022 and then increased slightly to 1138 between April 2022 and June 2022.

Table 2: TB case notification rate for new and relapse TB cases for all forms per 100,000 population

Period name	**TB case notification rate for new and relapse TB cases for all forms per 100,000 population**
October to December 2021	26
January to March 2022	33
April to June 2022	33

Figure 2: TB case notification rate for new and relapse TB cases for all forms per 100,000 population



From Table 2 and Figure 2, the TB case notification rate for new and relapse cases for all forms per 100,000 population increased slightly from 26 between October 2021 and December 2021 to 33 between January 2022 and March 2022 and then remained constant up to June 2022.

Discussion:

The overall number of TB cases was increasing and there was a low increase in level of notification rate and this was similar to a research study by some past researchers (*TB Online - TB Infections Hit 90,000 a Year in Uganda, Overtake HIV Rates*, n.d.).

So this calls for strengthening of the surveillance system so that the cases are detected at a much faster rate and then treated so that the healthy people don't get infected as also agreed in a previous study by Esther Buregyeya and colleagues (Buregyeya et al., 2016).

The trend Total TB cases registered (all cases, all forms); the period from October 2021 to December 2021 had the lowest number of TB cases with 822 cases, the trend kept increasing to the next period of January 2022 and March 2022 at 1076 cases and then the cases kept increasing up to 1138 cases in the period of April to June 2022 and this was in agreement with a study done by Baluku (Baluku et al., 2022). The TB cases registered in this study were much higher than those of some of the previous studies with around 300 more TB cases during this study (*TB / Leprosy Control Program - Ministry of Health | Government of Uganda*, n.d.-b). The District Health Team introduced a number of strategies that are meant to reduce the number of cases of TB like contact tracing, community surveillance and training of health workers but still the TB cases were just increasing as also stated in a study by Zawedde (Zawedde-Muyanja et al., 2020). And so there must be strengthening of the health system of the district as per the Ministry of Health in Uganda which also matches with findings in a past study by Kakame and colleagues (Kakame et al., 2021a), (Ministry of Health, 2020).

As also obtained in a past study by member of Ministry of Health in Uganda, the trend of TB case notification rate for new and relapse TB cases for all forms per 100,000 population was at first low at 26 between October 2021 and December 2021 and the it became constant at 33 up to June 2022 (*TB / Leprosy Control Program - Ministry of Health | Government of Uganda*, n.d.-b). This was a slight increase as compared to that of the financial year 2020/2021 although it is still very low as compared to the District and National targets of 88% and 95% respectively and this correlated with previous research by the Ministry of Health in Uganda (*TB / Leprosy Control Program - Ministry of Health | Government of Uganda*, n.d.-b). Wakiso as district needs to deploy more surveillance officers to boost TB case detection rate to the expected standards (Kakame et al., 2021b).

Recommendations:

The study recommends that the government and its partners must put more funding towards strengthening the TB surveillance system in Wakiso district and this can help minimize the increasing numbers of TB cases. This funding can be directed towards employing more Village Health Teams and boosting notification messages via different platforms that may include radios bill boards and televisions. More funding must be extended to local government to fight TB. Funds to support TB programs should be sent on time to avoid delay in implementation of these activities that are mean to fight TB.

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