Abstract

Tuberculosis (TB) has re-emerged as a major cause of ill health worldwide. An estimated 3.3 million cases and 510000 TB deaths occurred among women, as well as an estimated 550000 cases and 80000 deaths among children in 2013. Kenya is among the 22 high TB burdened countries in the world. Prevalence of TB in Meru is substantial. The division of leprosy, tuberculosis, and lung disease reported a notification rate of 158/100,000in Meru County in 2015. The study aimed to determine diagnostic capacity for tuberculosis among various laboratories within Meru County. Descriptive survey design that utilized quantitative techniques was adopted. Random sampling technique was used and a total of 26 samples that comprised of laboratory technologists from 12 selected laboratories within Meru municipality were involved in the study. Semi structured questionnaire was administered to the sampled laboratory technologists, in addition to review of data at health laboratories. Observational checklist was used to determine essential requirements for sample processing. Data entry was done through use of Statistical Package for Social Sciences (SPSS). Data analysis was done using Chi-square. Results indicated a significant difference in TB testing capacity between public and private laboratories at [x2 (1df, N=26) =18.49, p=0.000 <0.05] for florescence microcopy and [x2 (1 df, N=26) =18.49, p=0.000<0.05] for Gene Xpert Assay. There was significant differences in availability of resources necessary for quality diagnosis of TB between public and private owned laboratories at [*2(1df, N=26) =18.49, p=0.000<0.05] for safety cabinet, [x2 (1 df, N=26)=10.64, p=0.000<0.05] centrifuge, [x2 (1 df, N=26)=18.49, p=0.000<0.05] for Gene Xpert resources, [1 df, N= 26) =14.28, p=0.000<0.05] for freezer/refrigerator, [x2 (1 df, N=26 =18.49, p=0.000<0.05] for incubator and [x2 (1 df, N=26) =18.49, p=0.000<0.05] for Auramine O reagents for TB florescence microscopy. However none of the laboratories use PCR machine for diagnosis despite its high level of accuracy. Majority of the respondents (69%) were men followed by female at (31%). This implied that the laboratory science career is male dominated, hence the need to integrate either gender. Majority of personnel had prerequisite academic qualifications, higher proportion had a Diploma in Medical Laboratory Sciences (DMLS) at (76.9%) A total of 57.7% had attended in service TB program training to support diagnosis. In addition, majority (61.5%) of respondents use CDC and prevention external quality assurance (EQA) schemes for TB training programs to enhance diagnosis of MDR-TB. Qualified, experienced staff in addition to participation in TB training program instils knowledge and skills

for effective diagnosis of TB. 73.1% of the laboratories, mostly public refer specimen to KEMRI Centre for Respiratory Disease, this enhanced TB diagnosis in public laboratories. Recommended USAID standards requires that TB laboratory services are centralized and covers community outreach from public facilities. There is need to functionally integrate public, private and academic institutions to improve diagnosis of TB. Routine surveillance of status and capacity of diagnostic laboratories is key to prevention and control of TB disease. There is need for expansion of TB-related laboratory capacity by the County Government of Meru in collaboration with Ministry of Health to other levels of the health care system so as to meet the expected increase in demand for such services, in addition, formulate a work plan that will enable all laboratory personnel to participate in continuous in-service TB training program as a way of capacity building. This would enhance the diagnostic capacity for tuberculosis in both public and private owned laboratories