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LABORATORY DIAGNOSTIC SERVICES IN RURAL HEALTH CENTRES, WESTERN KENYA
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# LABORATORY DIAGNOSTIC SERVICES IN RURAL HEALTH CENTRES, WESTERN KENYA

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## ABSTRACT

**Laboratory diagnosis is an important component of the health care system. It serves as a link between the clinician and the patient. Majority of the Kenyan community seeks medical care from the rural health centres. The purpose of this study was to determine the role of the diagnostic laboratory at the rural health centre level. Cross-section data collection method was used. Blood slide for malaria parasites was performed in all the health centres. Although clinic records indicate that typhoid was among the top ten diseases, Widal test was done in only 28.6%, and bacterial cultures in none of the health centres. There is need for a variety of essential diagnostic laboratory tests be carried out to improve laboratory services at rural health centres.**

## INTRODUCTION

Community Based Education and Service (COBES) is an important component of Moi University, Faculty of Health Sciences Programme, with the primary goal on promotive and preventive health. For the first two years of training, students actively participate in primary health care activities in the community, being exposed to health management and service delivery at health centre level. This is in consideration that the majority of Kenyan population lives in the rural areas where the major source of health care is provided by the health centres. One of the major components of this service delivery is the laboratory service.

This study was undertaken in order to identify the priority health problems and to participate in laboratory service delivery.

## MATERIALS AND METHODS

*Study area and population:* Population that attended the health centres where first year students were placed for three weeks in June, 1999 and COBES. These included Mosoriot, Mbale, Navakholo, Bokoli, Chulaimbo, Turbo and Sirisia Health Centres. All are situated in western Kenya region, that is, Uasin Gishu, Nandi, Bungoma, Vihiga and Kakamega districts.

*Data collection:* Cross sectional design was used. All specimens received in the laboratory were processed according to clinical officer's requisition. Medical records were used to collect data on common health problems in the study area.

## RESULTS

Results of the health centre catchment population are shown in Table 1. All the seven health centres had a catchment population of about 600,000 people. In Table 2, the most common infection was malaria followed by upper respiratory tract infecitons, diarrhoea and other infectious diseases. This trend was similar in all the study areas according to community responses and health centre records.

**Table 1**

*Health centre catchment population*

| Health centre | Population |
|---|---|
| Mbale | 130,000 |
| Turbo | 108,000 |
| Navokholo | 90,000 |
| Bokoli | 85,000 |
| Chulaimbo | 65,000 |
| Sirisia | 60,000 |
| Mosoriot | 56,000 |
| Total | 594,000 |

**Table 2**

*Top ten diseases at the health centres*

| |
|---|
| Malaria |
| URTI |
| Diarrhoea |
| Skin conditions |
| Pneumonia |
| Intestinal worms |
| Accidents/burns |
| UTI/STI |
| Eye infections |
| Typhoid |

UTI = Urinary tract infections, STI= Sexually transmitted infections, URTI = Upper respiratory tract infections.

**Table 3**

*Laboratory tests done at the health centres*

| | Mosoriot | Turbo | Siria | Mbale | Bokoli | Chulaimbo | Navakholo | Total |
|---|---|---|---|---|---|---|---|---|
| BS (mps) | + | + | + | + | + | + | + | 7 |
| Urinalysis | + | + | + | + | + | + | + | 7 |
| Stool (o/c) | + | + | + | + | + | + | + | 7 |
| Hb | + | - | + | - | + | - | - | 3 |
| Widal | - | + | - | - | - | - | - | 2 |
| Sputun (ZN) | - | - | - | + | - | - | - | 1 |
| HVS | + | - | - | - | - | - | - | 1 |
| VDRL | - | + | - | - | - | - | - | 1 |
| HIV | - | - | - | - | - | + | - | 1 |
| Blood GP | + | - | - | - | - | - | - | 1 |
| Bact culture | - | - | - | - | - | - | - | - |
| Total | 6 | 5 | 5 | 4 | 4 | 4 | 3 | 31 |

Abbreviations: VDRL = Venereal disease research laboratory, HIV=Human Immunodeficiency virus, HVS = High vaginal swab, Hb = Haemoglobin, o/c= Ova/cysts, BS = Blood slide.

**Table 4**

*Malaria parasites laboratory results and recorded out patient department (OPD) diagnosis: January 1998- May 1999 at Sirisia Health Centre*

| | Month | Positive results | OPD diagnosis |
|---|---|---|---|
| 1998 | January | 86 | 386 |
| | February | 431 | 672 |
| | March | 592 | 830 |
| | April | 310 | 565 |
| | May | 293 | 397 |
| | June | 244 | 358 |
| | July | 244 | 442 |
| | August | 164 | 344 |
| | September | 297 | 369 |
| | October | 196 | 346 |
| | November | 107 | 459 |
| | December | 278 | 524 |
| 1999 | January | 308 | 487 |
| | February | 287 | 442 |
| | March | 319 | 410 |
| | April | 138 | 810 |
| | May | 486 | 695 |

Table 3 shows the laboratory tests that were done at the health centres during the study period. Blood slides for malaria parasites, urinalysis and stool for ova/cysts were done in all the health centres but none did bacterial cultures. The results in Table 4 indicate a low laboratory confirmation of the presence of malaria parasites compared to the higher clinical diagnosis of malaria according to the out- patient department records.

## DISCUSSION

All the seven health centres have a total catchment population of about 600,000 people with the most common diseases being malaria and other infectious diseases. However, confirmatory tests cannot always be done at these health centres for reasons such as lack of reagents, equipment and at some centres, electricity among others. Quality control is also not quaranteed. Improvement of these facilities is needed to avoid unnecessary referral to district hospitals, most of which are not within reach for the rural community.

## CONCLUSION

There is need that a variety of essental diagnostic laboratory tests be carried out to improve laboratory services at rural health centres, where not only the majority of the population seek medical care, but also where the burden of infectious disease lies.

## REFERENCES

1. COBES I reports. Faculty of Health Sciences, Moi University, 1998/1999.