EDITORIAL

ROLE OF LABORATORY SERVICES IN HEALTH CARE: THE PRESENT STATUS IN EASTERN AFRICA AND RECOMMENDATIONS FOR THE FUTURE

Laboratory services are an essential component of curative and preventive health care activities worldwide. Laboratory investigations are a vital part of the clinical assessment and laboratory results guide the selection of drugs for patient management. Improved disease recognition improves the accuracy of reporting and contributes to effective national health planning. Moreover, laboratory investigations are essential for the effective management and control of diseases of public health importance(1).

In the countries of eastern Africa, laboratory services have been established as part of the national health structure from the central hospital through each level of health care delivery to health centre and even dispensary level. Governments have followed recommended policies for improvement of health care delivery through decentralisation to district level, where the medical authority based at the district hospital is responsible for the development, management and operation of all health care activities within the district, including those operated by missions, non-governmental organisations, and private institutions(2). District (primary level) hospitals provide general and some specialist outpatient and inpatient services; district hospitals provide the first opportunity for patients to be attended by a doctor, and are the referral centres for smaller health units. Health centres provide outpatient curative services, maternal and child health care (including maternity services), and are involved in disease prevention and control activities. With currently available facilities and manpower, health centres are usually the smallest health unit offering laboratory services; since they are usually situated in more peripheral areas and are more numerous, health centres provide the first line comprehensive diagnostic, curative and preventive medical services for the majority of the population.

At the International Conference in Alma-Ata in 1978, primary health care was proposed as the key to attaining a basic level of health care for all citizens of the world. The Declaration of Alma-Ata defined primary health care as essential health care based on practical, scientifically sound and socially acceptable methods and technology(3). Primary health care is the first level of contact of individuals with the health system and should therefore form an integral part of health care delivery at every level. In support of primary health care strategies, the World Health Organisation Health Laboratory Technology Programme adopted two major resolutions for the African Region, to develop appropriate technology for health laboratories and to encourage member states to develop health laboratory services(4,5).

To establish a network of effective laboratories at primary health care level is a major undertaking. In Kenya, Tanzania and Uganda, there are approximately 1000 government health centres requiring human and material resources, support services including provision of regular supplies and equipment maintenance, supervision of staff, and collection and processing of data. The problems affecting the operation of laboratories at peripheral level are widespread and include lack of properly designed laboratory rooms, unreliable access to clean water or electrical power, shortage of equipment and supplies, lack of effective equipment maintenance services, and little regular support supervision of laboratory staff from higher units. In a feasibility study for primary health care laboratories conducted in seven health centres in Kenya by the African Medical and Research Foundation (AMREF) in conjunction with the Ministry of Health, none of the study health centres had adequate laboratory rooms and facilities, only one had all essential items of equipment, all were missing essential supplies, and there was little structured supervision from the district laboratory(6). The shortcomings of the peripheral laboratory service in Amhara Region, northern Ethiopia are described in a paper published in this issue of journal and reflect similar problems. Information on laboratory services in 27 health centres was obtained from laboratory staff through submission of a structured questionnaire. Deficiencies of manpower, equipment and supplies were widely reported as contributing to inadequate laboratory services. Some of the major suggestions for improving laboratory services put forward by the respondents therefore relate to manpower development and support, better laboratory structure and facilities, and provision of essential supplies and equipment. However, the possible reasons behind the constraints are not discussed. In the eastern African countries, supplies for laboratory services are budgeted together with drugs and medical supplies; in the Kenya study, health authorities reported giving priority to treatment drugs when operating under severe economic constraints. Furthermore, the impact of laboratory services in improving diagnosis and rationalising drug use is not widely appreciated by medical personnel or by patients.

Two recent workshops organised by the World Health Organisation Regional Office (AFRO) in conjunction with the Health Laboratory Technology Unit at the World Health Organisation Headquarters (LAB) provided fora for discussion and sharing experiences and ideas in all aspects of health laboratory services development within the countries of Africa. The workshop participants adopted a ten-point summary

of recommendations with a time frame for each activity(7).

Laboratory services are valuable at primary health care level in tropical countries because of the nature of the commonly presenting diseases and conditions, many of which may be diagnosed using simple laboratory tests. Out of the ten most common outpatient diagnoses in district hospitals and health centres in eastern Africa, six may be confirmed using simple laboratory tests(6,8). In the health centre study performed in Kenya, the types of tests performed on patients were fairly consistent at all sites irrespective of geographical location, with eight tests being most commonly requested. Limiting the types of tests to the most useful and standardising techniques addresses the majority of diagnostic problems and allows streamlining of equipment and supplies with the evident cost benefit of bulk purchasing and a standard distribution system. A minimum of two years training is essential for laboratory staff to independently manage all aspects of the laboratory services, and to perform the selected tests accurately and consistently. One year trained (or less) staff do not perform to the required standards(8).

One of the suggestions for improving laboratory services made by the respondents in the Ethiopian study deserves further comment. Respect and understanding for the laboratory sciences by clinicians and other members of the health team are essential for improving the quality of laboratory services. The diagnostic cycle starts and ends with the clinician ordering and interpreting tests; in many instances we have seen laboratory testing fail to support a diagnosis due to faulty test selection or specimen collection by the clinician. Basic knowledge of laboratory testing must be introduced during clinical training and reinforced by continuing education.

To encourage central and local authorities to channel more resources into the development of primary health care laboratory services, the important questions that need to be addressed are: how effective are laboratory services at this level, and how can they be supported and sustained? In a study of outpatient curative services in health centres in Kenya, laboratory use changed the diagnosis in 45% of patients tested and 21% of all patients attending outpatient curative services with a new condition(9). The cost of treatment drugs was reduced by a factor of only 10%, as therapy of patients was usually changed from one drug to another. However, the longer term benefits of improved diagnosis are not known, and the issues of cost reduction and whether early correct diagnosis at outpatient level can reduce hospital admissions are currently being addressed in a project ongoing in Tanzania(10). The Kenya health centre study also highlighted the need for separate laboratory accounting and the need to allow the laboratory services to retain most of the funds from charges levied on laboratory tests as one of the ways to sustain health laboratory services. In the larger, busy health centres, service charges adequately covered the recurrent cost of laboratory supplies.

Challenges that remain include establishing an effective equipment repair system, and introducing a national standard of quality through regular structured support supervision and external quality assessment. On a local level, community leaders and members have become increasingly involved in the operation, management, accountability and sustainability of health facilities within districts. Cooperation and support between countries on a regional and international basis, together with patient education and demand for quality services, are necessary to ensure widespread access to essential laboratory services at primary health care level in Africa.

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