WORKSHOP 3: EPIDEMIOLOGY

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Magnitude of the problem. The estimate of the global magnitude of leprosy has changed little for more than 20 years. Moreover such estimates are often based on unsystematic criteria and reports. Therefore, in order to make a realistic projection of the global problem, the Workshop recommends: a) acceptance of the definition of a case of leprosy as recommended by the World Health Organization Expert Committee, i.e., "A case of leprosy is a person showing clinical signs with or without bacteriological confirmation and requiring chemotherapy" and b) that prevalence rates should be based on registered cases as per the above definition.

As per present data, the total number of registered cases worldwide is approximately 5 million; 82% of the registered cases are from six countries. Since 1985, the number of patients who completed treatment appears to be higher than the newly detected cases. It must be noted, however, that even in countries of low or medium prevalence, there can be pockets of high prevalence.

Trends of leprosy. Some countries have reported well-documented declining trends of leprosy; some areas and some countries still show increasing trends. Thus, in general there is a great need to carefully evaluate the work done during the last few decades. This calls for the collection of reliable data on the patients and on the populations to which they belong. These data should be analyzed separately by age, sex, and type of disease. Trends in relation to factors such as BCG coverage must also be analyzed.

While criteria for classification can differ by country to some extent, there is need for standard criteria of classification, taking into account the clinical, bacteriological, and immunological status of the patient.

Urban leprosy. Trends in urban leprosy have not been sufficiently analyzed so far. This is due partly to the operational difficulties in the control programs and to the fact that most of the urban programs are of recent origin. It is recommended to have studies to evaluate the pattern and trend of leprosy in urban areas in order to investigate whether epidemiological factors and trends differ in urban areas compared to rural areas and to know whether there are unique epidemiological features in urban areas.

Socioeconomic determinants. Although the relationship between leprosy and poor socioeconomic conditions is widely recognized, the factors that contribute to the transmission of infection and/or the development of the disease under such conditions are not established. Ideally, there is a need to collectively study factors such as overcrowding, migration, hygiene, nutritional state, intercurrent infection, ethnic variations, BCG coverage, housing, etc., and to separate them in the analysis.

Seroepidemiological tools for leprosy. Almost all data and reports on leprosy are based on clinical disease. There is very little indication of subclinical infection. None of the available tests to detect subclinical infection is sufficiently specific or reliable for use under field conditions. Therefore, there is a need for the development of a reliable test appropriate for field use. Skin tests used during immunoprophylactic trials have demonstrated the usefulness of detecting individual susceptibility and to study the

immunological conversion induced by potential vaccines. Such studies need to be encouraged.

Recent progress in epidemiological work and research. Recent progress includes: a) epidemiological applications of serological and skin tests in the context of prevalence and incidence studies; b) confirmation of HLA-linked determinants for lepromatous as well as tuberculoid leprosy; c) discovery of natural *Mycobacterium leprae* (or *M. leprae*-like) infections in armadillos and monkeys; d) institution of large-scale vaccine trials providing population laboratories for leprosy research; e) application of case control study methodology to identify risk factors, e.g., armadillo contact and absence of BCG vaccination; and f) shift to multidrug therapy regimens and initial studies aimed at measuring reaction and relapse rates after different regimens.

Priority issues for the future. These issues include: a) clarification and application of rigorous case definition; b) studies of the implications of human immunovirus infections for leprosy, risk and type; c) application of new genetical tools (e.g., restriction fragment length polymorphisms) in family segregation analysis studies; d) application of new serological tools to study sources, modes of *M. leprae* transmission, and risk factors; e) development of sufficiently specific antigens for skin tests to detect subclinical infections and other epidemiological studies; f) cohort and case control studies of resistance, and relapse rates with new drug regimens; g) descriptive and analytical studies of the epidemiology of reactions, and disabilities; and h) longitudinal and cohort analyses to describe trends in leprosy incidence, and to identify the determinants of any changes.