COMMITTEE 5: ADVANCES IN EPIDEMIOLOGY

Members

M. F. Lechat (*Chairman*)
P. B. Arcuri
J. A. Cap
Z. Castellazi
R. A. Feldman
R. S. Guinto
T. W. Meade
S. K. Noordeen (unable to attend)
J. Walter

The committee feels that there have been few major advances in the epidemiology of leprosy in the past five years. This report therefore deals mainly with suggestions for future work, after a brief initial review of recent developments.

ADVANCES IN PAST FIVE YEARS

Analysis of data. There has been much work in many areas of the world on the statistical analysis of data on diagnosed cases of leprosy. However, much basic information is still wanting (especially in the absence of the ability to identify persons infected with *M. leprae*), on the characteristics of individuals, households and communities that are associated with the transmission of leprosy.

Control.

1. A number of studies have indicated that the treatment of lepromatous and borderline cases has significantly reduced the subsequent incidence of leprosy in household contacts, especially children.
2. Some evidence from active control programs suggests reductions in prevalence which might be expected eventually to influence incidence rates. However, long periods of intensive chemotherapeutic control and careful evaluation will be needed before it can be generally accepted and agreed that widespread falls in incidence have been achieved.
3. The need to clarify what is meant epidemiologically by "control" has become increasingly clear. The term does not include the treatment of cases presenting sporadically to clinics, etc. "Control" includes attempts to reduce prevalence by the systematic treatment of existing cases in the program area, and, finally, to reduce incidence. The interactions of epidemiology and control need to be continually reviewed.

New laboratory technics with epidemiological implications. Recent developments in other disciplines (e.g., immunology, bacteriology) may well offer epidemiologists the prospects of being able to detect infection by *M. leprae*, as well as clinical manifestations of leprosy, and of studying host-parasite relationships more effectively than hitherto. At present, however, these possibilities have not been fully tested and validated in the field, and it is hoped that steps to do so will soon be taken.

FUTURE WORK: SUGGESTIONS

Population-based studies.

1. Prevalence studies, characteristic of the bulk of current epidemiological studies in leprosy, should, in certain instances, be extended to, or replanned as, prospective incidence studies, with the necessary follow-up investigations. Since it is not possible to detect infection epidemiologically,

such studies will have to be based on newly arising clinical cases.

2. The main objective of work of the sort proposed is the identification of risk factors whose modification or use may contribute to the control of the disease.
3. The factors studied should cover all the attributes likely to be relevant to the onset of leprosy in the groups under study, i.e., probably need to include a wider range of constitutional and environmental variables, including information on intercurrent diseases, than has generally been the case so far. Because the incidence of leprosy is low, projects of this sort require very large numbers and long follow-up periods, which need to be related to the endemicity of leprosy in the study areas.
4. Strict attention must be paid to the development and use of standardized criteria and procedures so that the results of different studies may usefully be compared.
5. Clear distinctions must be drawn between case-finding (the detection of established as well as new cases) and incidence, in order to avoid possible confusion (especially in the early stages of a prospective study) as to whether incidence is really changing or not.
6. In addition to observational studies, opportunities afforded by on-going field surveys for epidemiometric model building and computer simulations of onset and natural history should be utilized.
7. Population-based studies of the sort suggested are likely to pay dividends in other ways, by providing sampling frames for the collection of biological material, the conduct of clinical trials, and for a range of other purposes.
8. Field research programs should take full account of the medical requirements of all diagnosed leprosy patients.
9. The need for large study populations presents problems, especially in countries where skilled and semiskilled manpower and other resources are limited. However, the experiences and achievements of groups who have attempted large scale studies make it clear that these can be carried out. In addition, individual investigators or small teams who can carry out well-planned epidemiological studies of particular problems, especially where exceptional conditions or opportunities exist, should be encouraged.

INTERNATIONAL COORDINATION; VOLUNTARY AGENCIES

The role that international bodies such as the World Health Organization and voluntary agencies can play in contributing to the general coordination and comparability of large-scale, long-duration studies and of smaller undertakings requires special emphasis.