Lepr Rev (1991) **62,** 234–240

News and Notes

TDR News: Techniques for leprosy diagnosis

The following is extracted from *TDR News*, No. 34, December 1990 and appeared under the headline, 'Techniques for leprosy diagnosis "exciting" but still experimental'.

The promise of high-tech tools for leprosy diagnosis will probably soon be fulfilled, but only for research: they are still some way away from entering disease control use. With this expression of mitigated optimism, Dr Shaik K Noordeen, head of the leprosy unit of WHO's Control of Tropical Diseases Division, summed up for *TDR News* the main message to emerge from three meetings held here this year at which new diagnostic tools for leprosy were discussed. 'There is a real danger', he warned, 'that the exciting prospects raised by early research on these tools will lead to premature expectations of their field usefulness. The result could be a rush to produce kits and other field equipment before the needed preliminary tests have been completed and before an assessment, including a cost-effectiveness analysis, has been made of their value as leprosy control tools.'

The meetings were held in 1990 in April (6th Joint Meeting of the Steering Committees on Immunology of Leprosy, Immunology of Tuberculosis and Chemotherapy of Leprosy), May (Consultation on the early diagnosis of leprosy) and September (Joint Meeting of the Steering Committees on Immunology of Leprosy and Chemotherapy of Leprosy field research in leprosy).

One of the most exciting new tools with potential for leprosy diagnosis, Dr Noordeen noted in the interview, is the detection of specific DNA or RNA sequences of *Mycobacterium leprae* in specimens of body tissues or fluids using hybridization probes for detection of the sequences and the polymerase chain reaction (PCR) technique to amplify them. At the April meeting, speakers from several of the centres reported that the PCR test could detect as few as 1001 leprosy bacilli—and in some research centres even 10 organisms—in biopsy specimens.

In the view of Dr Joe Colston, head of microbiology at the National Institute for Medical Research in London, 'PCR works'. It is, he said, sensitive and specific, and has potential for diagnosis, the detection of subclinical infection, the monitoring of chemotherapy and drug screening. But for Dr Noordeen the most promising use of a PCR test would be to discriminate between living and nonliving leprosy bacilli in tissue and blood specimens. Such a capability would be extremely useful, he said, for studies of drug resistant organisms. At present the only way of achieving this, is by injecting *M. leprae* from patients into mouse footpads and following the course of this localized infection. Dr Stewart Cole, head of the Bacterial Molecular Genetics Laboratory at the Institut Pasteur in Paris, one of many centres in several countries working on a PCR test for mycobacteria, reported that specimens from nude (immunologically deprived) mice treated with rifampicin showed a 'striking and dose-dependent decrease' in the PCR signal—indicative of viable bacilli—compared with untreated mice. Dr Cole is currently evaluating the test in lepromatous (BL and LL) patients receiving treatment.

A number of research groups have found the PCR technique extremely useful for distinguishing between different variant strains of *M. tuberculosis*. If it could also be used to subtype different *M. leprae* strains, as many researchers hope, it could, in Dr Noordeen's view, turn out to be a very useful epidemiological tool: 'We would have in our hands a rapid and reliable means, in multibacillary patients, of distinguishing between relapse due to reactivation of residual leprosy bacilli and relapse due to reinfection with a different strain of the bacillus.' But again, he believes the

value of such a test is more for research than leprosy control: 'It is still a relatively expensive test, although the cost will probably fall. But compared with slit smears and serology it is a sophisticated technique requiring special equipment not easily set up under field conditions.'

Serological tests based on detection of the *M. leprae*-specific antigen PGL-I (phenolic glycolipid-I) have been in the research pipeline for 7 years now. A kit to detect this antigen has even been developed by a Japanese firm. The hope has been that PGL-I serology could clinch diagnosis in cases of suspected leprosy, detect subclinical leprosy infection and indicate disease outcome in infected individuals.

There are several problems, however, with the field use of serological tests, Dr Noordeen notes. First, leprosy diagnosis is not difficult to establish in most cases simply by the traditional examination, with or without skin smears and histopathology. The diagnostic value of serology for leprosy control therefore is limited. Second, PGL-I serology has only about 30% sensitivity (i.e., 70% false negatives) for paucibacillary leprosy, which does not make it a useful field test for the early stages of paucibacillary leprosy, where diagnosis and prognosis *do* present problems in a significant proportion of cases. But even with its specificity of 98% (i.e., 2% false positives) and even in a population with an unusually high leprosy prevalence rate of 1% (most endemic countries have little over 0·1%), in a population of 1000 a PGL-I test would pick up only 3 of the 10 true leprosy cases, at the same time identifying another 20 people without leprosy as being infected with *M. leprae*.

While the debate continues over the value of the new diagnostic tools for leprosy, so does the research. 'We're going in the right direction', concludes Dr Noordeen, 'but for disease control we haven't arrived yet.'

The 'Jaipur Foot' India

Rough estimates suggest that there are 7 million handicapped people in India. The Jaipur Foot, developed in 1975, has become the most frequently fitted artifical limb. It actually looks like a foot and does not have to be protected or disguised by a shoe. By March 1988 over 30,000 people had benefited from the Centres. The Centres also provide or repair other rehabilitation aids, callipers and hearing aids. Services are available to all, irrespective of caste or creed.

OXFAM's 1987–88 grant covered the cost of 500 artificial limbs, along with financially assisting 70 patients to become self-supporting.

Source: *Health Lines*, OXFAM Health Unit, 274 Banbury Road, Oxford OX2 7DZ, England.

Shelf-life of antileprosy drugs

Ciba-Geigy, Basel, Switzerland has kindly supplied the following information: Defining the 'shelf-life' of a drug as the period between the date of manufacture and expiry date, the figures for antileprosy drugs produced by Ciba-Geigy are as follows: dapsone, 4 years; Rimactan (rifampicin), 4 years; Lamprene (clofazimine), 5 years.

New AFRO Health Sciences Library and Documentation Centre

The new Health Sciences Library and Documentation Centre of the WHO Regional Office for Africa was inaugurated by Dr G L Monekosso, the Regional Director, in September 1988 during the meeting of the Regional Committee Collections. Furniture and books of the entirely new library were planned and installed as a turnkey operation: books, periodicals and documents had been prepared in advance and the corresponding computerized bibliographical records were made available from the central WHOLIS (WHO Library Integrated System) database in Geneva. As well as having access to information on the library's holdings on microcomputer, MEDLINE and POPLINE on CD-ROM are also available for interrogation. The objectives of the new library are to support the WHO programmes in the Region and act as a backup for health libraries in Africa. A prototype of a ready-to-use documentation centre for WHO Representatives or ministries of health is displayed introducing the concept of turnkey packages of collections and indexes prepared centrally and

updated regularly. A survey of needs and potential interest in the Region is at present being carried out and it is intended to install several pilot sites this year.

Contact: Mr A Ikama-Obambi, Regional Officer, WHO Regional Office for Africa, PO Box 6, Brazzaville, Peoples Republic of Congo.

Thermal sensibility tester

How to order the tester and associated equipment from UNICEF.

The thermal sensibility tester, together with battery charger and rechargeable batteries, can be ordered directly from the UNICEF Copenhagen Warehouse Catalogue. This equipment will be available from the warehouse to sister United Nations agencies, as well as to governmental and recognized non-governmental organizations. Such organizations, whether headquarters or field, may request assistance by contacting UNICEF at the following address: Director, Supply Division, UNICEF, UNICEF Plads, DK-2100, Copenhagen, Denmark. *Tel*: (45-31) 26-24-44; *Fax*: (45-31) 26-94-21; *Telex*: 19813.

Orders placed by individual non-United Nations institutions/missions located in developing countries must be forwarded through the UNICEF office responsible for services in the country concerned.

For more information concerning the results obtained when using the instrument during field testing, please refer to an article in either of the following publications:

1 Value of thermal sensibility testing in leprosy diagnosis in the field—field trial of a pocket device. H Srinivasan & B Stumpe. *Lepr Rev*, 1989; **60:** 317–26.
2 Leprosy diagnosis: a device for testing the thermal sensibility of skin in the field. H Srinivasan & B Stumpe. *Bull* WHO, **67 (6):** 635–41.

ORDER FORM

Supply Division, UNICEF,
UNICEF Plads, DK-2100,
Copenhagen, Denmark

		Quantity	*Unit price*	*Total price*
Pos. 1	Thermal sensitivity tester Stock number 06-950-00		US$38.38	
Pos. 2	Rechargeable AA batteries Stock number 18-022-17		US$1.52	
Pos. 3	Battery recharger Stock number 18-022-19		US$8.27	

PATH, USA; bibliography on tuberucolosis

The Program for Appropriate Technology in Health (PATH) publishes *Directions* at regular intervals, which deals with matters of practical importance in health care and technology. Recent issues have covered leprosy and tuburculosis and with the latter, PATH offered a list of publications and other sources, as obtained during the preparation of the issue. These are as follows:

Algerian Working Group/British Medical Research Council Cooperative Study. Controlled clinical trial comparing a 6-month and a 12-month regimen in the treatment of pulmonary tuberculosis in the Algerian Sahara. *Am Rev Respira Dis*, 1984; **129:** 921–8.

Backman A, Pirilä V, Förström L. A new method for testing tuberculin skin reactivity—chamber test. *Tubercle*, 1984; **65:** 279–83.
Cassels A, Heineman E, LeClerq S. Tuberculosis case-finding in Eastern Nepal. *Tubercle*, 1982; **63:** 175–85.
Grzyzbowski S. Tuberculosis: a look at the world situation. *Chest*, 1983; **6:** 756–61.
Holm J. Tuberculosis control in the developing world: it's time for a change. *World Health Forum* 1985; **5:** 103–19.
Hong Kong Chest Service/British Medical Research Council. Survey of patients presenting to the government chest service in Hong Kong and the effects of active tuberculosis case-finding by publicity campaigns. *Tubercle*, 1984; **65:** 173–84.
Joint International Union against Tuberculosis and World Health Organization Study Group. Tuberculosis control. *Tubercle*, 1982; **63:** 157–69.
Kardjito T, Grange JM. A clinical evaluation of the diagnostic usefulness of an early dermal reaction to tuberculin: a failure to distinguish between tuberculosis and other respiratory disease. *Tubercle*, 1985; **66:** 129–32.
Mahler H. *Defeat TB now and forever*.Geneva: WHO, 1982.
Mata JI. Integrating the client's perspective in planning a tuberculosis education and treatment program in Honduras. *Medical Anthroplogy* (Winter 1985).
Miller FJW. *The natural history of primary tuberculosis*. TB/84.144, Geneva: WHO, 1984.
Mitchison DA. The action of antituberculosis drugs in short-course chemotherapy. *Tubercle*, 1985; **66:** 219–25.
Pan American Health Organization. Tuberculosis in the Americas, part I: epidemiology. *Epidem Bull*, 1981; **2(5):** 1–6.
Pan American Health Organization. Tuberculosis in the Americas, part II: control. *Epidem Bull*, 1981; **2(6):** 1–4.
Snider DE, Layde PM, Johnson MW. Treatment of tuberculosis during pregnancy. *Am Rev Respira Dis*, 1980; **122:** 65–79.
Teklu B. Reasons for failure in treatment of pulmonary tuberculosis in Ethiopians. *Tubercle*, 1984; **65:** 17–21.
ten Dam HG. *Surveillance of tuberculosis by means of tuberculin surveys*. TB/85.145, Geneva: WHO, 1985.
ten Dam HG, Hitze KL. Does BCG vaccination protect the newborn and young infants? *Bull WHO*, 1980; **58(1):** 37–41.
Toman K. Mass radiography in tuberculosis control. *WHO Chronicle*, 1976; **30:** 51–7.
WHO Expert Committee on Tuberculosis. Technical guide for sputum examination for tuberculosis by direct microscopy. *Bull Int Un Against Tuberc*, 1978; Paris: Supplement 2.
World Health Organization. *Vaccination against tuberculosis*. Technical Report Series 651. Geneva: WHO, 1980.
World Health Organization. *BCG vaccination policies*. Technical Report Series 652. Geneva: WHO, 1980.
World Health Organization. Trial of BCG vaccines in south India for tuberculosis prevention: first report. *Bull WHO*, 1979; **57(5):** 819–27.
World Health Organization. Recent advances in the chemotherapy of tuberculosis. *WHO Chronicle*, 1980; **34:** 101–13

WHO: Documents on tuberculosis

Dr A Kochi, Chief Medical Officer, Tuberculosis Unit, Division of Communicable Diseases, WHO 1211 Geneva 27, Switzerland has kindly supplied the following list:

1 Technical Report Series:
651: *Vaccination Against Tuberculosis* (1980);
652: *BCG Vaccination Policies* (1980);
671: *Tuberculosis Control* (1982).
2 *Tuberculosis Control as an integral part of primary health care* (A65) (1988).
3 *Tuberculosis Case-Finding and Chemotherapy, Questions and Answers*, Toman K (A40) (1979).
4 *Tuberculosis Control: A Manual on Methods and Procedures for Integrated Programs* (A61).
5 *Expanded Programme on Immunization* (WHO). *Update*: August 1989. *Childhood Tuberculosis and BCG Vaccine.*
6 Bulletin of the International Union Against Tuberculosis and Lung Disease (IUATLD), Vol. **65,** No. 1, March 1990. *Tuberculosis in developing countries: burden, intervention and cost.* Murray, CJL *et al.*
7 Global Programme on AIDS/Tuberculosis Programme—*Statement on AIDS and Tuberculosis*, Geneva, March 1989 (WHO/GPA/INF/89.4).

8 *Annual Risk of Tuberculosis Infection*, Cauthen GM, Pio A, ten Dam HG (WHO/TB/88.154) (G.92).
9 *The Role of Short-Course Chemotherapy in National Tuberculosis Control Programmes in Developing Countries*, Dr Jerzy Leowski (WHO/TB/88.156) (E.62).
10 Tuberculosis Programme/Global Programme on AIDS—*Preventive Tuberculosis Chemotherapy among Persons infected with HIV* (WHO/TUB/AIDS/90.1).
11 *Treatment of Tuberculosis: Case Holding Until Cure*, Professor Pierre Chaulet (WHO/TB/83.141 Rev 2).

A further WHO document, *Currently available publications and documents on tuberculosis* dated April 1981, (WHO/TB/81.116), lists a considerable number of items from the literature up to that year of publication (35 pages).

German award for chairman of Aussatzigen-Hilswerk Munchen, 1990

Mr Maximillian Gruner, chariman of AHM, was awarded 'Bundesverdienstkreuz am Bande' by Bundespraesident Richard von Weizsäcker for taking initiative in leprosy control work in the developing world and for establishing contact with numerous international organizations. The citation read by Honourable Minister for Social Affairs, Dr Gebhard Glück, says:

'Of fundamental importance in AHM's work is the idea of making people progressively aware of the suffering and need among children, youth and adults in the developing countries of the world.'

Africa Health Marketeer

Africa Health Marketeer publishes a variety of information about health matters in Africa and provides a regular intelligence service to assist the international health care industry, health planners, and international organizations interested in Africa. The newsletter is published ten times each year. For more information write to FSG Communications Ltd, 57/59 Whitechapel Road, London, El 1DU, United Kingdom.

WHO: 'World tuberculosis toll is rising'

The following is extracted from the October 1990 issue of *WHO Features* (No. 148):

Nearly three million people die annually from tuberculosis—more than from any other infectious disease—and the global toll could rise sharply in the near future if control initiatives are not adopted quickly, warns a new analysis by the World Health Organization (WHO).

Each year WHO estimates that there are eight million new cases of tuberculosis, a contagious disease of the lungs (and other organs) caused by a bacterium that is transmitted thought the air when infected people cough or sneeze. Four million of these cases are infectious. About 20 million have active cases of tuberculosis (TB) and 1·7 billion, or one-third of the world's inhabitants are or have been infected with the tuberculosis bacillus.

Most of the TB deaths occur in the developing world: Asia—1·8 million; Africa (south of the Sahara)—656,000: Latin America—220,000; and North Africa and Western Asia—163,000. Tuberculosis deaths are concentrated in adults aged 15–59, the segment of the population that is economically most productive.

In the industrialized countries, there are 42,000 TB deaths, mostly among the elderly, ethnic minorities and migrants.

Countries with the largest number of TB cases are Bangladesh, Brazil, China, India, Indonesia, Nigeria, Pakistan, the Philippines and Vietnam. The rate of disease is the highest in sub-Saharan Africa.

After decades of declining rates of tuberculosis, progress against this killer has come to an abrupt halt in some developed countries. For example, the number of cases in the United States of America declined for 32 consecutive years until 1984, and is now on the increase.

In the majority of developing countries, particularly sub-Saharan Africa and the Indian

subcontinent, the incidence of tuberculosis has been declining. In absolute numbers it is increasing as the population increases. Also, in some East and Central African countries, reported tuberculosis cases have almost doubled in the last four or five years.

One of the main reasons for the resurgence of tuberculosis is the spread of infection with the human immunodeficiency virus (HIV). When people infected with tuberculosis are also infected with HIV, tuberculosis is more likely to become active because of the weakened immune system. In people with tuberculosis, the time it takes for HIV to develop into AIDS is shortened dramatically, according to available data collected by WHO.

Who estimates that about three million people with HIV infection are also TB infected worldwide. 'It is becoming a parallel epidemic and it is this trend that has public health officials worried', declares Dr Hiroshi Nakajima, Director-General of WHO.

WHO estimates that 15–20 million people will be infected with HIV by the end of the century. Thus, because of the mirror nature of the two diseases, WHO expects TB cases and deaths to rise sharply, especially in Africa, Latin America and South-East Asia.

'Countries with the highest rates of HIV infection and high numbers of TB carriers are recording explosive rates of TB', says Dr Arata Kochi, Chief Medical Officer of the Tuberculosis Unit of WHO's Division of Communicable Diseases.

WHO estimates that 2·4 million people in sub-Saharan Africa are infected with both HIV and TB. In Latin America, the number of people infected with both HIV and TB is 300,000; Asia—200,000; Europe and industrialized countries—150,000; and North Africa and Western Asia—5000.

Leprosy control in Turkey

The Ciba-Geigy Leprosy Fund, PO Box K-24.2.09, 4002, Basle, Switzerland, recently allocated funds towards the Turkish National Leprosy Control Programme under the direction of Professor Turkan Saylan, Leprosy Relief Association and Istanbul Medical Faculty, Istanbul. A detailed project proposal has been written which includes the objective of bringing virtually all known, registered patients in the whole country under multiple drug therapy (MDT), using WHO-recommended regimens, within a period of about 3 years. The programme is directed mainly from the leprosy centre in Bakirkoy, Istanbul, and includes a regular system of visits to various leprosy-endemic parts of the country by a mobile team.

Leprosy Epidemiological Bulletin, Belgium

We are grateful to Professor M F Lechat, Department of Epidemiology, the Catholic University of Louvain, EPID 30/34 Ecole de Santé Publique, Clos Chapelle-aux-Champs 30, 1200, Brussels, Belgium, for sending a copy of Number 4, January 1990: 'Global evaluation of the introduction of multidrug therapy'. The introduction runs as follows:

Introduction of multidrug therapy (MDT) was recommended by a WHO study group in 1981 mainly because of the ever increasing threat caused by the worldwide development of secondary and primary resistance to dapsone.

With the experience gained so far, it becomes every day more evident that if a major breakthrough is to be made in leprosy control, it is through the worldwide use of highly bactericidal multidrug regimens.

Besides the effective capacity to cure the leprosy patients harbouring dapsone resistant bacilli, the WHO MDT regimens permit:

—a shortening of the duration of treatment, leading to a better compliance of the patients, and an increased rate of self-reporting;
—a rapid decline of the leprosy prevalence resulting in a decreased workload for the health workers;
—a reduced risk of post-therapeutic relapses.

More important, generalization of MDT in an area seems also to result in a sharper decline of the leprosy incidence than what was experienced with dapsone monotherapy.

Nowadays, multidrug therapy regimens are used in most endemic countries. Effective coverage of the patients with MDT differs however widely from country to country. The 'Bulletin' presents information on MDT from 174 countries and territories worldwide. It does not intend to be just one more compilation of figures, but rather a stimulus for all those in charge of leprosy control programmes to implement MDT in the field and to collect the necessary information to monitor the process.

This report is divided in three parts:

1a & 1b Summary and detailed statistics by WHO Regions;
2 Summary statistics by countries;
3 Detailed statistics by countries.

Revista de Fontilles Leprologia de Fontilles, Spain

Volume XVII, Number 6, September–December 1990 of this Journal from Santorio de Fontilles, Alicante, Spain, under the direction of Dr Terencio de las Aguas, contains the usual comprehensive reviews of publications on leprosy. The language of the Journal and of the very numerous reviews is Spanish and thus a most valuable source of information to workers in Mexico and many parts of South America. A list of publications on teaching and learning materials in Spanish is available from INFOLEP, Netherlands Leprosy Relief Association, 135 Wibatustraat, 1097 DN Amsterdam, The Netherlands.

Essential Drugs Monitor; WHO

The *Essential Drugs Monitor* is a newsletter produced and distributed by the WHO Action Programme on Essential Drugs and Vaccines. Since the Action Programme was launched in 1981, more than 80 countries have either drawn up essential drugs lists or started projects in support of primary health care, providing reliable essential drugs and vaccines which:

meet people's common health needs; have significant therapeutic value; are acceptably safe; offer satisfactory value for money.

All correspondence should be addressed to the Editor, *Essential Drugs Monitor*, World Health Organization, CH-1211 Geneva 27, Switzerland.

Damien Foundation, Belgium; new emphasis

The latest edition of ILEP 'FLASH', January 1991 (ILEP, 234 Blythe Road, London W14 0HJ, England) draws attention to a recent meeting in Belgium at which the Damien Foundation (rue Stévin 16, B-1040, Brussels, Belgium) announced its intention to make even further efforts to ensure that all patients needing multiple drug therapy receive it, whilst at the same time developing into the field of tuberculosis control.

Skin biopsy in leprosy, 3rd edition, D S Ridley, Ciba-Geigy

The third edition of the above booklet has extensive additions to the text and now includes a section of the classification of nerve lesions. The aim of the booklet is to meet the needs of clinical leprologists and dermatologists who wish to undertake histological diagnosis and classification in leprosy, and also to attract the interest of pathologists. It is available from Ciba-Geigy Ltd, CH-4002 Basel, Switzerland.

XXXIV International Leprosy Meeting for Missionaries and Auxiliary Staff, 7–19 October 1991; Paramedicals 4–9 November 1991, Fontilles, Spain

For further details of the above meetings, both of which cover a wide range of topics, write to: Dr Jose Terencio de las Aguas, Santorio San Fco. de Borja, 03791 Fontilles, Spain.