Lepr Rev (1996) **67,** 235–246

Teaching Materials and Services

WHO: Chemotherapy of leprosy

This booklet carries the Report of a WHO Study Group in the *Technical Report Series* No. 847, WHO, Geneva, 1991. The contents include: present situation; currently available antileprosy drugs; recommended regimens; operational aspects, research trends and needs. The following information on antileprosy drugs is reproduced from pages 10 and 11:

Fluoroquinolones

Although a large number of fluoroquinolones have been developed, some such as ciprofloxacin are not active against *M. leprae*; of those which are, most interest has focused on ofloxacin. Like all fluoroquinolones, ofloxacin interferes with bacterial DNA replication by inhibiting the A subunit of the enzyme DNA gyrase. It was used in a clinical trial by Ji & Grosset in a dose of 400 mg daily. A single dose had some bactericidal activity, although less than that of a single dose of rifampicin, and 22 doses killed 99·99% of the viable *M. leprae*. Ofloxacin is well absorbed, reaching a peak serum concentration of 2·9 μg/ml after 2 hours, and has a half-life of 7 hours. Most of the dose is excreted unchanged in the urine. Side-effects include nausea, diarrhoea and other gastrointestinal complaints, and a variety of central nervous system complaints including insomnia, headaches, dizziness, nervousness and hallucinations. Serious problems are infrequent and do not usually require discontinuing the drug.

Minocycline

Minocycline is the only member of the tetracycline group of antibiotics that has significant bactericidal activity against *M. leprae*. This may be because of its lipophilic properties, which allow it to penetrate cell walls. The standard dose is 100 mg daily, which gives a peak serum level that exceeds the MIC of minocycline against *M. leprae* by a factor of 10–20. Its bactericidal activity against *M. leprae* is greater than that of clarithromycin, but much less than that of rifampicin. It was shown to be very effective clinically when administered as monotherapy in eight patients with lepromatous leprosy, although 2 months of therapy was required before all patients became negative for *M. leprae* as determined in the mouse-footpad model.

Like the other tetracyclines, minocycline inhibits protein synthesis via a reversible binding at the 30S ribosomal subunit, thereby blocking the binding of aminoacyl transfer RNA to the messenger RNA ribosomal complex. It is well absorbed, with a half-life of 11–23 hours. Side-effects include discolouration of teeth in infants and children, occasional pigmentation of the skin and mucous membranes, various gastrointestinal symptoms and central nervous system complaints, including dizziness and unsteadiness. Minocycline is commonly used for the long-term treatment of acne, which indicates that in general it is well tolerated.

Macrolides

Several members of this group, including erythromycin, have been evaluated as antileprosy drugs,

but only clarithromycin shows significant promise at this time. Studies in the mouse-footpad model have demonstrated the potent bactericidal activity of clarithromycin, but it is clearly less bactericidal than rifampicin. When clarithromycin was administered at a dose of 500 mg daily to lepromatous leprosy patients, 99% of bacilli were killed within 28 days and 99·9% by 56 days.

Clarithromycin is readily absorbed from the gastrointestinal tract and converted to its active metabolite, 14-hydroxyclarithromycin. A single dose of 500 mg produces a peak serum concentration of about 1·0 μg/ml in 1–4 hours, which subsequently decays with a half-life of 6–7 hours. About 38% of the dose is excreted in the urine and 40% in the faeces. Tissue concentrations are higher than those in serum.

Clarithromycin inhibits bacterial protein synthesis by linking to the 50S ribosomal subunit, thereby preventing elongation of the protein chain. It is relatively non-toxic. Gastrointestinal irritation, nausea, vomiting and diarrhoea are the most common problems, but they usually do not necessitate discontinuation of the drug.

Other drugs

With the possible exception of fusidic acid, other drugs available or under study with known activity against *M. leprae* are much less potent than those mentioned above or purely bacteriostatic. They include amoxicillin plus clavulanic acid, brodimoprim, thioacetazone and deoxyfructoserotonin. Given the large number of much more potent antileprosy drugs available which have the potential in MDT regimens for further marked shortening of the length of therapy, there is no justification for using any of these other drugs.

WHO: Training materials for tuberculosis

The Global Tuberculosis Programme of WHO has supplied the following information:

1. *Treatment of Tuberculosis: Guidelines for National Programmes*, World Health Organization 1993. This has been widely distributed to all countries and is intended to assist National Tuberculosis Programmes to formulate effective treatment plans for tuberculosis. This booklet provides standardized short-course chemotherapy regimens recommended by WHO.
2. *Managing Tuberculosis at the District Level:* This set of 10 modules (plus Course Director's Guide, Facilitator's Guide, Workbook and Answer sheets) is a training course intended to equip district TB coordinators in the necessary skills for management of TB control at district level.

The Global Tuberculosis Programme has trained approximately 4,000 national and regional TB Programme Managers during the past three years at global, regional, inter-country and national (in some countries) levels. In India, the Regional Workshop for South-East Asia was held in July 1993 in New Delhi followed by several national and state level workshops.

3. *Managing Tuberculosis at National Level:* The Global Tuberculosis Programme is developing a set of four modules which is intended to equip Tuberculosis Programme Managers with skills to incorporate the WHO strategy for TB Control into their programmes and to achieve the global targets for TB control. This is expected to be completed by early 1996.
4. In addition, we are in the process of preparing materials to address TB control issues in specific target groups such as refugees, HIV-infected TB patients, etc.

Further information: Global Tuberculosis Programme (National Programme Support), WHO, 1211 Geneva 27 Switzerland. Fax +44 41 22 7910746.

Tuberculosis training courses at ALERT, Addis Ababa, Ethiopia

As a result of the successful introduction of MDT, many leprosy programmes are facing a considerable reduction of patients in need of treatment.

In order to ensure efficient use of the available infrastructure (trained personnel, vehicles, laboratory and hospital facilities etc), many programmes are combining tuberculosis control with leprosy control. This new set-up creates new training needs. ALERT is responding to these needs by offering several courses featuring a tuberculosis training component.

Four courses focus on combined leprosy–tuberculosis programmes. All contain the following basic modules:

- Health promotion, including communication and psycho-social aspects of both diseases
- Clinical aspects of leprosy
- Clinical aspects of tuberculosis
- Management aspects of a combined programme
- Practical demonstration of a combined programme in the field
- Individual options chosen by each trainee according to his/her specific needs and interests

The duration and the relative importance of each module will vary for each course, taking into account the target group of the course.

The **Essentials of Leprosy and TB for Physicians** course is aimed at medical officers new to the field of leprosy and TB. In this course, the clinical aspects will receive particular attention. The **Management of Combined Leprosy and TB Control Programmes** course is aimed at physicians and senior programme managers who already have experience with leprosy and/or TB. There will be less emphasis on clinical aspects, which will be reviewed, and more on the management issues specific to combined programmes. Nevertheless, a properly selected candidate for one of these two courses could equally well profit from the other. This may be useful for projects with time constraints, as one course is offered during the first half of the year, and one during the second half.

The **Supervision of a District Leprosy and TB Control Programme** course is aimed at supervisors, either new to the field, or in need of a refresher course. There will be a thorough revision of the clinical aspects, and the management tasks will be taught in depth at a level appropriate for the district, through practical exercises.

The **Essentials of Leprosy and TB for Non-medical Staff** course is aimed at administrators, accountants, non-medical project managers, staff responsible for public relations or fund raising, either working in the field or with a donor agency. The course will mainly focus on familiarizing lay persons with the medical aspects of leprosy and TB, in order to allow them to communicate more effectively with the medical staff. As the target group of this course has many time constraints, the course is given in 2 weeks. It will be an intensive programme, involving evening study and weekend assignments. No options are included.

One course deals with tuberculosis only. The **TB Control for Physicians** course is aimed particularly at medical officers whose programme has newly changed from leprosy alone to leprosy and TB combined, although it will be useful for anyone who is new to the field of tuberculosis. The course will focus mainly on practical aspects of patient management and on programme management, in the context of a leprosy–TB combined programme. Thus, the course will be quite different from the Arusha course organized by the IUATLD. Nevertheless, for those who have already taken the Arusha course, the ALERT course will not be of much additional benefit.

The course dates are as follows:

March 11–April 12	Management of Combined Leprosy and TB Control Programmes
May 6–May 24	TB Control for Physicians
June 10–June 22	Essentials of Leprosy and TB for Non-medical Staff

Sept 16–Oct 25 Essentials of Leprosy and TB for Physicians
Oct 28–Dec 13 Supervision of a District Leprosy and TB Control Programme

For all further information, please contact: International Training Coordinator, ALERT, P.O. Box 165, Addis Ababa, Ethiopia. Tel: 251-1-712792 and 251-1-711524. Fax: 251-1-711111.

Dangerous TB treatment practices threatening lives of AIDS patients, WHO 1995

The above WHO/70 was released on 22 September 1995:

The World Health Organization (WHO) today warned against incomplete and often harmful tuberculosis treatment practices that are robbing years of life from nearly a third of all HIV-positive people.

According to WHO, HIV-positive tuberculosis patients could probably gain more than two years of healthy life with an improved anti-TB treatment strategy known as directly observed treatment, short-course (DOTS).

'By failing to use DOTS to treat TB, we are ignoring one of the most practical and affordable weapons we possess to help people with HIV,' said Dr Arata Kochi, Director of the WHO Global Tuberculosis Programme, following a meeting of representatives of foreign aid agencies, ministries of health and NGOs in Oslo, Norway.

WHO estimates that up to two-thirds of all HIV-positive people who seek treatment are being misdiagnosed or treated improperly for TB. The most common error in treating TB patients has been failing to ensure that TB patients actually take their anti-TB medicine every day. Unsupervised TB treatment increases the likelihood that the co-infected patient will not recover from TB. This improper TB treatment practice also allows TB patients to remain infectious for longer periods of time, thereby putting family members, friends and health workers at considerable risk of becoming infected with TB.

Other improper TB control practices are also contributing to the premature demise of HIV-positive people. According to WHO, health workers are often unable to accurately diagnose TB in an HIV positive person. In other instances, the anti-TB drug thiacetazone—which can be lethal to HIV-positive people—is still being prescribed in AIDS endemic areas. While thiacetazone is quite inexpensive, it causes the skin to become detached from the body in some HIV-positive persons and has other severe side-effects in up to 27% of HIV-positive patients.

'An estimated 266,000 HIV-positive people will die from TB this year. Their TB was potentially preventable and treatable,' said Dr Arata Kochi. 'It is crucial that those who care about AIDS become aware about how to properly control TB.'

The Global TB Programme urged that two steps be taken to reduce TB deaths among HIV-positive individuals. First, that all countries quickly adopt directly observed treatment, short-course (DOTS) to control TB. DOTS is a strategy where a health worker or volunteer watches each TB patient swallow a specific regimen of TB medicines for a six-month period. The DOTS strategy uses a combination of anti-TB medicines that do not cause serious side-effects in HIV-positive people. This strategy has been nearly 100% effective in curing TB in both HIV-positive and HIV-negative patients. DOTS has been recently used to great success in parts of the world facing the TB/HIV co-epidemic, such as New York City and Tanzania.

Secondly, the Global TB Programme called for the mobilization of research efforts to address the most urgent, practical problems posed by the TB/HIV co-epidemic. This TB/HIV research agenda would investigate how to, 1) develop better ways to coordinate TB control and HIV prevention and care efforts at the district and community level, 2) improve diagnosis and treatment of TB in HIV-infected individuals, 3) remove barriers which discourage people who are ill with TB from seeking care in high HIV prevalence areas, and 4) assess the role of preventive TB therapy for HIV-positive people.

'We need to help equip primary health care workers with the means to incorporate AIDS

prevention and TB control strategies into their day-to-day activities,' said Dr Paul Nunn, Chief of the Global TB Programme's research unit. 'TB workers need to understand how HIV will exploit unsound TB treatment practices. AIDS workers need to understand the importance of the DOTS strategy for caring for their patients.'

'While the two diseases greatly overlap, the UNAIDS and the Global TB Programme each have very clear and distinguishable roles to play in combatting the co-epidemic,' said Dr Peter Piot, Director of the United Nations' AIDS Programme. 'If UNAIDS can succeed in preventing the spread of HIV, there will be much less TB in the world. If the Global TB Programme can succeed in establishing more effective TB control programmes, we can greatly extend the lives of HIV-positive people and save a considerable amount in the cost of caring for AIDS patients.'

According to WHO, TB is the leading opportunistic infection to kill HIV positive people. An estimated 266,000 HIV-positive people will die from tuberculosis this year out of an estimated 600,000 AIDS-related deaths. Likewise, HIV is increasingly playing a bigger role in the TB epidemic. Currently, only 9% of TB deaths are related to AIDS, although this percentage is expected to reach 17% by the year 2000.

For more information, contact Kraig Klaudt at (41-22) 791-4627 or Courtenay Singer at (41-22) 791-2189. Fax (41 22) 791 41 99. Global Tuberculosis Programme, WHO, Geneva.

World TB Day, 24 March 1996, WHO

The following statement was recently made by WHO to mark World TB Day:

The tuberculosis epidemic has never been worse, surpassing all other infectious diseases as the leading killer of youth and adults. In 1995, TB killed nearly 3 million people—over 10,000 times as many deaths as caused by Ebola and The Plague combined. In 1995, over 8 million people became sick with TB, and it is estimated that someone is infected with the TB bacteria every second of the day.

In the Americas, last year outbreaks of the epidemic were investigated in churches, schools, dental offices, court rooms, trains, subways, racetracks and even on a river boat casino. In Minneapolis, a person with TB infected 45 people in a neighbourhood bar. A postal worker in Tampa was discovered to be carrying TB bacilli as well as the mail. In Western Canada, a health care worker infected 100 other people.

In Europe, TB cases have been on the rise in Denmark, Norway, the Netherlands, Italy and other European countries over the past few years. Russia and Eastern Europe are also reporting increasing numbers of TB cases. In London, two percent of the city's homeless population may currently be sick and infectious with TB. Also in London, the city's first major outbreak of multidrug-resistant TB was recently reported in a hospital.

In Asia, the World Health Organization has warned that Thailand and India could be sitting on a dangerous 'timebomb' of multidrug-resistant TB. A study in Pakistan suggests that up to 40 percent of TB patients in some regions are resistant to three or more anti-TB drugs. Another study in Thailand reports that up to 68 percent of health professionals in some hospitals are infected with TB. Indications are that over 50 percent of all HIV-positive people in Asia may eventually become sick with TB.

In Africa, record numbers of nurses in some hospitals are dying of TB. Approximately 40 percent of South Africa's population may be infected with the TB bacillus. Yet—in spite of the horrific extent of TB in Africa—the continent has produced some of the most promising success stories in fighting the epidemic.

The World Health Organization will release its **Report on the TB Epidemic 1996** just prior to World TB Day. The theme of this report will be 'Groups at Risk'. The report will discuss how the TB epidemic affects women, children, workers and other risk groups. The report concludes that 'there is nowhere to hide from TB', as we are all at risk.

For additional information, contact Courtenay Singer at (41-22) 791-2189, WHO, 1211 Geneva 27, Switzerland.

TB 'will kill 30 m in next 10 years', *The Guardian*

The following item appeared in *The Guardian*, 22 March 1996:

Tuberculosis is spreading rapidly throughout the world and is killing more people than at any time in history, the World Health Organization said yesterday.

British specialists said that the number of cases in Britain had increased every year since 1986 and there had been reports of drug-resistant TB which was difficult and expensive to treat.

A new report by the organization, launched in London yesterday to mark World TB Day on Sunday, said that the disease would kill 30 million people over the next 10 years. Yet effective treatment was available for £7 per person in some parts of the world.

TB was the most urgent health problem facing the planet, dwarfing fears about the ebola virus or BSE, yet there was still huge complacency in many countries, it said.

Paul Nunn, chief of research for the organization's global TB programme and a former specialist at Hammersmith Hospital, London, said: 'The population of Britain is legitimately concerned about BSE, but reports focus on 10 cases of CJD which may be related to this.' There were about 6,000 cases of TB a year in Britain and 400 deaths.

Arata Kochi, director of the TB programme, said the position had deteriorated over the past three years despite the organization declaring TB a global health emergency in 1993, the first time it had ever so identified a single disease.

Some 80 countries were now using an effective treatment programme under which patients were supervised when taking drugs to ensure they finished the six-month course, but many others could not afford to implement this.

'We knew three years ago that tuberculosis had become the world's greatest killer of adults. We also know that a third of the world's population was already infected, with an additional person being infected every second. Three years ago we warned that the TB epidemic would become much worse. It has.'

TB was the biggest single killer of women across the globe and a third of people with HIV died from TB. Because TB struck people in their most productive years it caused huge economic damage.

'Many leaders are still behaving as if TB did not exist. Other diseases such as flesh-eating bacteria, the plague, and the ebola virus ... are higher on the public-policy agenda than tuberculosis.

'Tuberculosis kills over 10,000 times as many people each year as the ebola virus. And, unlike ebola, tuberculosis spreads through the air. Anyone can catch tuberculosis simply by inhaling a TB germ that has been coughed or sneezed into the air. These germs can stay suspended for hours.

'In a closed environment, they can remain alive for up to three years. There is nowhere to hide from tuberculosis. We are all at risk.'

The disease had killed 2·1 million people in 1900 but today, because of the increase in population, the rise of HIV, which weakens the immune system, and the failure of control programmes, TB was killing 3 million people a year.

Poor control programmes where people failed to finish the course of treatment were fuelling drug-resistant strains.

These were extremely difficult to treat and in some cases were incurable.

'With continued neglect and inaction, deaths from TB may continue to rise and kill well over 100 million people in the next 50 years.'

John Moore-Gillion, chairman of the British Lung Foundation, said: 'Between 1986 and 1994 there has been a steady increase in TB cases in this country. People under 60 forget what a terrible cause of suffering TB was in Britain.'

Technical guide for smear examination for leprosy, insert 1995

The following revision insert was printed to go with the Second, Revised Edition, 1987:

Since the publication of the *Second Revised Edition* of the *Technical Guide* in 1987, there have been a number of important changes relating to the use of slit-skin smears in leprosy, especially in control programmes and in relation to the wider implementation of the multiple drug therapy (MDT).

In 1987 (shortly after the Guide had gone to press), WHO published Guidelines for the prevention and control of possible infection with HIV and hepatitis B virus for personnel involved in the collection of skin smears in leprosy. In view of the known risks of all skin-piercing procedures, this advice should be widely circulated and made known to health staff.

In 1988, the *WHO Expert Committee on Leprosy* defined 'a case of leprosy' as a person showing clinical signs of leprosy, with or without bacteriological confirmation of the diagnosis, and requiring chemotherapy—thus establishing that skin smears are not essential for this purpose.

More recently (1994) WHO has added further advice on facilities for bacteriological examination and classification—

> *Facilities for bacteriological examination.* 'A service for the bacteriological examination of skin smears is not a prerequisite for initiating an MDT programme. In view of the increasing prevalence of human immunodeficiency virus (HIV) infection and hepatitis B infection in many countries where leprosy remains endemic, the number of skin smear sites and the frequency of smear collection should be kept to a minimum.'
>
> *Classification.* 'Classifying patients through skin smear examinations should be continued. Where reliable facilities for the bacteriological examination of skin smears are not available, approaches based on clinical classification may be required. When classification is in doubt, the patient should be treated as having multibacillary disease.'

Furthermore, in view of the negligible relapse rate following WHO MDT regimens, it was recommended that it is no longer necessary to continue routine annual surveillance of patients after completion of MDT.

Although the technical and laboratory content of the 1987 Guide remains acceptable, the above publications and advice call for considerable re-interpretation of many parts of the text, including attention to the possible risks of hepatitis B and HIV infection and the need to reduce skin smears to the minimum.

The following are the most important documents for consultation—

1. WHO. Guidelines for personnel involved in collection of skin smears in leprosy control programmes for the prevention and control of possible infection with HIV. WHO/CDS/LEP 87.1 Rev.1. World Health Organization, Geneva, 1987.
2. WHO. WHO Expert Committee on Leprosy. Sixth Report. Technical Report Series 768. World Health Organization, Geneva, 1988.
3. WHO. Chemotherapy of Leprosy. Report of a WHO Study Group. Technical Report Series 847. World Health Organization, Geneva, 1994.
4. ILEP (International Federation of Anti-Leprosy Associations). Achieving MDT for all leprosy patients. Medical Bulletin, Issue No. 7, December 1994. ILEP, 234 Blythe Road, London W14 0HJ, England.

Technical guide for sputum examination for tuberculosis by direct microscopy

This Technical Guide originally published in Supplement No. 2, December 1978 of the *Bulletin of the International Union Against Tuberculosis*, is available from IUALTLD, 68 Boulevard Saint-Michel 75006, Paris, France. The contents are:

I Collection of sputum specimens: A. Number of specimens requested; B. Recording of sputum examinations; C. Place for collecting the specimens; and D. Technique for collection.
II Storage and transport of sputum specimens: A. Storage; and B. Dispatch.
III The laboratory: A. Safety; and B. Laboratory arrangement.
IV Reception and registration of sputum specimens.
V Preparation of smears: A. Engraving slides for smears; B. Smear preparation; C. Drying; D. Fixation; and E. Disinfection and sterilization of contaminated material.
VI Staining technique: A. Staining; B. Decolourization; and C. Counter-staining.
VII Examination by microscopy: A. Arranging the working table; B. Use of the microscope; and C. Technique of reading.
VIII Results of examination.
IX Recording at a microscopy centre.
X Disposal of examined slides.
XI Dispatch of results of examination
XII Formulation of reagents.

TALC: Teaching aids at low cost

TALC, P.O. Box 49, St Albans, Herts AL1 5TX, England has issued its 1996 list of books, slides and accessories from which we select the following on AIDS, leprosy and tuberculosis:

AIDS education and communication

The AIDS Handbook: *John Hubley*—For those involved in AIDS education & community work, it covers origins, symptoms, transmission and counselling. £4.00. ***New Edition***
Talking AIDS: *G. Gordon & A. Klouda*—A practical handbook for community workers based on real questions and concerns voiced by people around the world. English, French or Arabic £2.00.
Women and HIV/AIDS: *Marge Berer & Sunanda Ray*—Impact of HIV/AIDS on women's health, sexual relationships and reproductive rights and what women are doing about it, around the world. English, French or Spanish £5.60.
Strategies for Hope: *Series editor Glen Williams*—A series of case study booklets, training pack and video programmes which aim to promote informed, positive thinking and practical action. No. 1 **From Fear to Hope**, No. 2 **Living Positively with AIDS**, No. 3 **AIDS Management**, No. 4 **Meeting AIDS with Compassion**, No. 5 **AIDS Orphans**, No. 6 **The Caring Community**, No. 7 **All Against AIDS**, No. 8 **Work Against AIDS**, No. 9 **Candles of Hope**, No. 10 **Filling the Gap (*New*)**. Booklets 1–8 and No. 10, in French. 1–7 and No. 9 £1.50 each. No. 8 and No. 10 £2.00 each. ***Each title may be ordered separately.***
1) **TASO Living Positively with AIDS**: A video about the care, support and counselling of people with HIV/AIDS. No English PAL format available. Limited availability of other formats: English NTSC, French (PAL, SECAM & NTSC). Portuguese (PAL & NTSC). 2) **The Orphan Generation**: A video on community based care and support for children orphaned by AIDS. Available in English (PAL & NTSC) and French (PAL, SECAM & NTSC). £25.00 for charitable organizations and NGOs, £45.00 for others. 3) **Stepping Stones Training Pack.**

Other AIDS related materials: sets of slides on HIV and Sexually Transmitted Diseases (see slide section) flannelgraph on **Family planning, STDs and AIDS and One-For-One AIDS Learning Activity.**

The following slide sets with script are available (24 slides unless otherwise stated):

HIcA HIV Infection—Clinical Manifestations in Adults: Describes the clinical case definition

and various clinical manifestations of HIV infection in adults. Especially for the Asian and Pacific region. (DNA) 1993.

HIvA **HIV Infection—Virology and Transmission:** Describes the epidemiology, virology, immunology and transmission of HIV infections. Especially for the Asian and Pacific region. (DNA) 1993.

HIVc **HIV Infection—Clinical Manifestations:** Describes the clinical case definition and various clinical manifestations of HIV infection in Africa. (Fr) (DNA) 1989.

HIVe **HIV Infection—Prevention and Counselling:** A discussion of the problems of prevention and transmission. It requires an understanding of the HIVv and HIVc slide sets. (Fr) (DNA) 1989.

HIVm **Per group education in AIDS and STD programmes:** This set provides a training module that can be used to plan peer group education among key target groups. (AO) 1995.

HIVp **HIV Infection in Children:** An overview of the situation in Africa, including epidemiology, transmission, diagnosis, clinical manifestations, management and issues (48 slides, double the price). (DNA) 1992.

HIVv **HIV Infection—Virology and Transmission:** Describes the epidemiology, virology, immunology and transmission of HIV infection in Africa. (Fr) (DNA) 1989.

Leprosy and related subjects—slide sets (24)

Leprosy: An introduction to leprosy, particularly in children, and methods of treatment.
Common skin diseases in children in the tropics. Diagnosis and treatment.
Care of the nerve damaged limb. How to teach patients to care for their limbs in leprosy and other neurological conditions and to preserve residual function.

Tuberculosis

Clinical tuberculosis (210 pages, paperback) by John Crofton, Norman Horne & Fred Miller is sponsored by the International Union against Tuberculosis and Lung Disease and by TALC. A low cost edition for developing countries has been financially supported by the World Health Organization and other bodies. It is written primarily as a practical guide for busy non-specialist doctors working in areas with few resources. The language is simple and there is an extensive glossary. The book can therefore be useful to Health (Medical) Assistants and senior nurses with a limited knowledge of English. It can also serve as a helpful reference for younger doctors in developed countries who now have less experience of tuberculosis.

The book covers diagnosis and treatment of all types of tuberculosis, pulmonary and non-pulmonary, both in adults and children. It deals fully with the effects of HIV infection on the disease and describes the essential elements of a National Tuberculosis Control Programme. There are many line drawings and flow charts as aids to training, learning and clinical practice. 'Stories' about individual patients highlight practical points.

The three authors have had many years experience of dealing with tuberculosis and of teaching both undergraduates and postgraduates. They have advised in many countries in Asia, Africa and South America. The final text incorporates constructive comments on an earlier draft by experienced consultants from the IUATLD, WHO and consultants working in several countries in Asia, Africa and the Pacific. The book therefore represents much collective wisdom.

First published in English, translations in Chinese, French, Spanish, Portuguese, Thai, Vietnamese and Farsi have already been published and translations into seven other languages are in progress. Over 12,000 reduced price copies have already been distributed to 122 countries.

The Natural History of Childhood Tuberculosis: a 24-slide set.

For further information write to the address above or tel: +44 (0)1727 853869; or fax: +44 (0)1727 846852.

ILEP: training catalogue (Catalogue de Formation) 1996

The Co-ordinating Bureau of the International Federation of Anti-leprosy Associations (ILEP) has produced a catalogue, covering training centres in Addis Ababa, Ethiopia; Bamako, Mali; Bauru, Brazil; Cebu, The Philippines; Dakar, Senegal; Fontilles, Spain; Karigiri, India; Manaus, Brazil; Mexico City, Mexico, and Purulia, India.

Teaching tools for health workers. Luc van Parijs

The purpose of this book is to provide busy health professionals with a guide to the selection and use of seven of the most widely available and effective tools for teaching, i.e. chalk board, flip chart and flash card, objects and models, hand-outs, overhead projector, slides and video.

This booklet has previously been priced at £3.00, but TALMilep are now able to offer the publication free of charge to ILEP Projects and leprosy training centres.

If you would like copies of the booklet please contact Fiona Thomas at: TALMilep c/o TLMI, 80 Windmill Road, Brentford, Middlesex TW8 0QH, GB.

WHO Guide to eliminating leprosy as a public health problem in French

This important publication (originally in English, WHO/LEP/95.1) has now been published in French and is available from: Action Programme for the Elimination of Leprosy, WHO, 20 ave Appia, 1211 Geneva 27, Switzerland.

Liverpool School of Tropical Medicine

The Liverpool School of Tropical Medicine is a registered charity affiliated to the University of Liverpool, is one of the few postgraduate centres of excellence in the world in the field of tropical medicine and its allied disciplines. Its principal, inter-related functions are research, teaching, and consultative activities. The School is extensively involved in national and international programmes to control tropical disease and to develop effective health care systems. It has links with health ministries, universities and research institutions worldwide.

The School was founded in 1898 by Sir Alfred Lewis Jones, a Liverpool shipowner and businessman, and is the oldest tropical school in the world. Its first Professor of Tropical Medicine, Sir Ronald Ross, was awarded the Nobel Prize in 1902 for discovering the mode of malaria transmission. The School was built on its present site, on the edge of the University campus, in 1915 and later extended, since when three new Wings have been added, in 1964, 1977 and 1988. Some 185 academics, research and support staff are employed in the School, and over 500 students from more than 70 countries attended courses last year, ranging from three-year PhD research programmes to one-week summer courses. The School has a world-wide reputation as a centre for research into tropical medicine and the issues relevant to the improvement of health in tropical populations. Its multi-disciplinary programmes range from community health and health systems research to parasite biochemistry and molecular entomology. In the last UFC Research Selectivity Exercise the School was commended for its research into 'Vector Biology and some aspects of immunoparasitology which were of exceptionally high standard'. More recently, the School was given an 'A' rating (the highest grading) by the Medical Research Council in its review of University Departments and the research training they provide.

Research funding in the School in 1993–94 totalled £3·2 million, and came from the World Health Organization (WHO), the Medical Research Council (UK), the Overseas Development

Administration, the European Community, the Wellcome Trust and many other charitable Foundations and Trusts. The School houses three WHO Collaborating Centres in the Control of Antivenins, Environmental Management for Vector Control, and for the Development of Health Systems based on Primary Health Care. The School is one of the top four international institutions receiving WHO funding for research training.

Research in the School is organized around a number of research groups within four Divisions that represent the main areas of the School's work—International Health, Tropical Medicine, Parasite and Vector Biology (including veterinary parasitology) and Molecular Biology and Immunology—and is co-ordinated through the Research Support Office. In addition to the research carried out in its well-equipped laboratories, the School is involved in field research throughout the tropics, in Asia, Africa, Latin-America and Australasia. There are also joint research programmes with several departments of the University of Liverpool, including research centres for Tropical Medical Microbiology, Tropical Pharmacology and Latin-American Health Studies.

In clinical research, current programmes include the management of cerebral malaria in children; clinical trials of new anti-malarial drugs; influence of maternal anaemia and malaria on birth weight; clinical manifestations and treatment of HIV-related diseases in the tropics; prevalence of HIV and hepatitis among drug users; epidemiology and control of sleeping sickness; and studies of the incidence and causes of pelvic inflammatory disease. Field studies are conducted in a number of countries, including Malawi and Uganda, Nigeria, India, Guatemala and Brazil. There is a group concerned with the epidemiology of snake bite in Brazil, Papua New Guinea and Nigeria and the production and testing of recombinant proteins for anti-venom production.

Research in the Divisions of Molecular Biology and Immunology and Parasite and Vector Biology comprises both field and laboratory-based research and includes research on parasites of veterinary importance. Current work includes studies of the host and parasite dependent factors that determine the therapeutic outcome of antimalarial therapy; rational chemotherapy based on improved knowledge of parasite biochemistry (*Leishmania* and *Trypanosoma cruzi*) and mechanisms of drug resistance; the immune response, molecular cloning of protective antigens and vaccine testing in onchocerciasis; the development of BCG as a live vaccine vector to stimulate protective immunity against intra-cellular parasites; antigenic variation in malaria parasites; the role of cytokines in immunity and pathogenesis; and the development of new immunodiagnostic methods for field use in the tropics.

Other interests include the development of DNA probes, PCR and other molecular approaches to the diagnosis and identification of parasites and insect vectors; transgenic technology and gene expression in mosquitoes; mosquito ecology, malaria epidemiology and control; the biology and control of leishmaniasis in the neo-tropical region; pheromones, chemical attractants and chemical ecology in sandflies, simuliid blackflies and mosquitoes; the genetics and biochemistry of pyrethroid insecticide resistance in malaria vectors; and defence mechanisms of mosquitoes against bacteria and filarial parasites.

The School is concerned that its research should inform health policy and contribute directly to improved management of health services. Examples of such research are comparative studies of the structure of modern and traditional health services; the relationship between female literacy and child health and survival; identification of simple interventions for the prevention of hearing loss; the nutritional and health problems of refugee populations; and evaluation of the health impact of development programmes. A research interest of several staff is the improvement of management of health districts and the application of surveillance methods and information technology to support the decision-making process. There is a multi-disciplinary group concerned with health sector reform in developing countries.

Much of the School's research involves collaboration between various specialized interest groups. For example the Unit for Statistics and Epidemiology (USE) applies its expertise across a broad range of the School's research activities, from the implementation and evaluation of

practical disease surveillance systems to the analysis of demographic and anthropometric data. The development of hypertext software for computer assisted learning by USE complements the research interests of the Education Resource Group. The latter group is currently investigating training needs in health promotion.

Women's health is a relatively new area of research with an emphasis on maternal health, growth and development in adolescent girls and gender differences in disease prevalence. The long term objective is to work towards new approaches in health care which are sensitive to the social constraints of women.

For further information including details of degrees by research, taught courses, masters courses, diploma courses, certificate courses and short courses apply to: Courses Secretary, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool L3 5QA. Telephone +44 (0)151 708 9393. Fax: +44 (0)151 708 8733.

INTRAH: Free materials in reproductive health

The Program for International Training in Health (INTRAH) compiles this valuable and already well-known list, now in its 6th edition (1994). This edition contains over 1200 entries organized into seven categories: family planning, maternal and child health, primary health care, AIDS, population, development and information sources. Each record contains the bibliographic entry, a brief description of the contents and level, as well as the address. (INTRAH, 208 N. Columbia St, Chapel Hill, NC 27514, USA).

General low-cost sources of health literature. ELBS

Educational Low-Priced Books Scheme (ELBS)—A complete catalogue of material available under this scheme sponsored by the UK Overseas Development Administration contains some nursing books. (ELBS Administration, IBD Ltd, 6 Devonhurst Place, Heathfield Terrace, Chiswick, London W4 4JD, UK).

Reviews of leprosy and other mycobacterial diseases in Spanish

For Spanish-speaking colleagues we draw attention to the material produced in *Revista de Leprologia Fontilles*, Vol. XX (3), Sept–Dec 1995. This issues carries 30 pages of recent publications with abstracts or summaries in Spanish. Apply: Director Medico, Sanatorio San Francisco de Borja, 03791 Fontilles, Alicante, Spain.