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News and Notes

Goodbye AHRTAG – Hello Healthlink Worldwide

There is a new name in the world of health information—Healthlink Worldwide.

But it's a name with 21 years of experience behind it. Healthlink Worldwide is the new name for AHRTAG (Appropriate Health Resources and Technologies Action Group) which has been putting health information to work since 1977.

The new name reflects the organisation's focus on health and describes its way of working worldwide – linking information and health workers, linking partners, linking policy and practice.

Healthlink Worldwide continues AHRTAG's aim of improving the health of poor and vulnerable communities by strengthening the provision, use and impact of information.

Healthlink Worldwide works with more than 30 partner organisations in developing countries including governments, non-governmental organisations and academic institutes to run programmes to support particular health needs. These include continuing education and training for health workers in Africa and the Middle East, AIDS and Sexual Health, Child Health and Disability.

Healthlink Worldwide's practical training and education materials is printed and electronic forms reach nearly two million health and development workers worldwide. Healthlink Worldwide provides technical support to partner organisations and others in setting up and developing resource centres and information services. This work draws upon the UK's largest collection of health learning materials from developing countries, based at Healthlink Worldwide's resource centre.

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LEPRA: Annual General Meeting July 1998: Report & Financial Statements for 1997

On the occasion of the *Annual General Meeting of LEPRA* in London, 21 July 1998, those invited received a copy of the *Report and Financial Statements for 1997*, which included information about the Association's main objective, policies, activities and future developments.

Objectives of the Association

The main objective of the Association is to carry out the investigation of and promote research into the causes, treatment, cure and prevention of the disease of leprosy and any allied disease, and give and grant relief and assistance to any person suffering or believed to be suffering therefrom, or the family or dependants of such persons of any description, including financial assistance. (Extract from the Memorandum of Association).

There are more than 1 million people suffering from leprosy and an estimated 4 million others who have disabilities as a result of the disease. For the foreseeable future there will be at least 600,000 new patients diagnosed each year and a proportion of these will be disabled. This means that more than one person is found to have leprosy every minute of every day. A significant number of people affected by leprosy are in areas which are difficult to reach and where often there is a lack of infrastructure. Tuberculosis is once again a world epidemic and many leprosy patients are at risk of contracting this disease, especially in areas of dense population, e.g. India. HIV infection is also on the increase in a number of countries where LEPRA operates. The cost of medical research into these diseases has increased significantly over the last 5 years. All these diseases have stigma associated with them and, unfortunately, in endemic regions not only the general public but also some less well-informed medical personnel may ostracise the patients.

LEPRA aims to maximize the use of staff, infrastructure and local resources by adding further programme elements to existing control programmes and to general health service programmes. These include, for example, Prevention of Disability, Eye Care, Income Generation Programmes, Social Aspects of Leprosy, TB control and HIV Awareness and Education. LEPRA's prime objective will, however, remain the eradication of leprosy.

Policies

- High quality services are given to patients through the running and support of leprosy control programmes.
- Medical research into the causes and cure of the disease is undertaken.
- Services to leprosy patients are integrated into local health services.
- Where possible, leprosy control is integrated with TB control and HIV awareness raising programmes.
- High priority is given to prevention of disability in all programmes.
- Surgical and, where possible, socio-economic rehabilitation programmes are undertaken.
- Medical Consultancy and Advisory Services are continued.
- LEPRA continues to publish Leprosy Review, LEPRA's scientific journal.
- High quality Training Programmes are run in all programmes LEPRA supports.
- Education and Awareness Raising Programmes are run in all programmes LEPRA supports, including the United Kingdom.
- LEPRA will establish closer working relationships with Government and Non Governmental Organisations at both local and international levels.

Review of Activities

1997 was another remarkable year for LEPRA and as planned all the activities that were proposed in the last Report and Financial Statements were undertaken.

The highly successful Blue Peter Appeal reached £1·762m at the end of 1997, making a total from that Appeal of £2·734m.

The Appeal not only enabled us to strengthen existing programmes and open new ones, but also significantly raised LEPRA's profile in Britain.

A successful application for funding was made to Novartis for funding a programme in Brazil.

We continued to support and expand leprosy work, which includes research in Africa, Asia and Latin America.

At the end of 1997 LEPRA's work and standing were acknowledged, by the election of the Director as President Elect of the International Federation of Anti-Leprosy Association (ILEP). The Presidency of ILEP is for a 4 year period commencing December 1998.

Africa

We were particularly pleased that despite the continuing civil conflict in Sierra Leone, the National Programme was able to continue to diagnose and treat patients with the assistance of LEPRA Funds.

We have agreed to take responsibility for the leprosy/TB control programme in Zambezia Province, Mozambique.

We have entered into discussions regarding supporting the National Programme in Madagascar.

We continue to support the training of nurses in leprosy control in Cameroon.

We have continued to support the All Africa Leprosy & Tuberculosis Rehabilitation Training Centre in Ethiopia.

Malawi

We were able to strengthen the infrastructure at our Research Centre in Malawi, prior to the centre receiving major research funds from the Wellcome Foundation.

After more than 30 years of successful work in Malawi, we were able to hand over the responsibility for the National Leprosy Control Programme to the Malawian Government.

We were delighted that our representative, Rev. Peter Garland, was presented with the Order of the Lion of Malawi, and that LEPRA has been invited to sit on the National Research Committee.

Brazil

Two new state programmes in Brazil, namely Paraíba and Rio Grande de Norte, were strengthened through LEPRA Funds.

A new programme to assist patients and ex patients with disabilities was started in the south of Ceará.

The leprosy reference centre in Fortaleza, Ceará was totally renovated, which has strengthened the programme there considerably.

The patient organisation, MORHAN, in Ceará was assisted by the provision of transport helping patients who have to travel to clinics for treatment.

We were particularly pleased that in the National Leprosy Eradication Campaign, launched by Pelé, the programmes supported by LEPRA identified more new patients than any other in Brazil, indicating the high quality of work being done.

India

New programmes were commenced in Orissa and Andhra Pradesh where significantly high numbers of new patients have already been identified and have started treatment.

Plans for a further programme in Orissa were made in order for a programme to start at the beginning of 1998.

Through the appointment of four new staff in India, socio-economic rehabilitation programmes were started, thereby assisting some of the poorest patients in those areas covered by our programmes.

The upgrading of the research laboratory in Hyderabad took place, after LEPRA took over the responsibility for it from the Church of South India. A new Director was also appointed.

A new laboratory and offices were also acquired in Orissa and a new ward was built to increase the capacity of the surgical unit there.

The programme we support in Basti, Uttar Pradesh, was greatly expanded and now covers a population of 550,000.

We began discussions with the ILEP agencies and with the National and State Government regarding co-ordination of all the leprosy work in the state of Andhra Pradesh.

After discussions with the Department for International Development (DfID), we undertook a new project in Andhra Pradesh to examine the spread of HIV infection.

We have upgraded our computer systems in India and have appointed an IT specialist.

Future Developments

We are discussing the possibility of supporting work in a further State in Brazil.

We have begun the process of registering LEPRA in Brazil.

We aim to provide mobile education units to all our programmes in India.

We will restructure our Head Office to meet growing need.

We are investigating the possibilities of opening a Leprosy Training Centre in India.

We are considering starting further new programmes in Orissa.

We are looking at the possibility of supporting a programme in Nepal and a further programme in Bangladesh.

We will discuss assistance to the Indian Government for TB control programmes in Andhra Pradesh with DfID India.

Death and disability from road accidents. Red Cross Report on World Disasters, 1998

The Red Cross have recently published a detailed and important Report on world disasters, drawing attention to the fact that road crashes worldwide already claim 500,000 lives each year and cause 15 million injuries. They will overtake tuberculosis, war and HIV as one of the world's biggest killers by the year 2020. *The Guardian* newspaper account of 24 June, 1998 (UK) included the following:

Traffic accidents are the leading cause of death for men and the fifth most frequent for women in the 15–44 age band. Children under 15 account for 15 per cent of traffic fatalities in developing countries compared with 6 per cent in the developed.

Even in rich countries the poor are the more likely to die in accidents.

Only clinical depression and heart disease will kill more people than traffic accidents in 20 years, the report says. Ethiopia has by far the worst record: 175 road deaths for every 10,000 licensed vehicles, compared with the second country, Nepal, with 80. By comparison Australia and Japan have two deaths per 10,000 vehicles.

The report argues that the cost of road deaths places a severe and needless strain on national resources. Crashes cost underdeveloped countries as much as the aid they receive. The average costs of accidents in most countries is now at least one per cent of the gross domestic product.

Traffic accidents damage progress by killing the economically active, seek out the most vulnerable, and are forecast to do more harm through death and disability than many of the health threats currently given greater priority for assistance.

In many countries there is no road safety training in schools. The Red Cross suggests as a first step that national road safety councils are established in each country to examine the problem.

Further enquiries: Oxford University Press Bookshop, 116/117 High Street, Oxford OX1 4BZ, United Kingdom. Telephone 01865-242913. Fax 01865-241701. Price UK £15·99.

Freeplay, 'wind-up' radio now available with integral solar panel

The original model of the BayGen Freeplay Radio (affectionately known as the 'Clockwork' or 'Wind-up' radio), invented by Trevor Baylis, Twickenham, UK, has already achieved wide distribution, with sales in 1997 reported to be around 500,000 sets per year. It utilizes personally generated power, and there is no need for batteries or an external power source. The energy storage and release mechanism is based on energizing a textured carbon steel spring by winding it from one spool to another. As the spring returns to its original position, it releases its energy and applies a rotational torque into a transmission. This consists of a gearbox, which drives a direct current generator, providing energy for the radio receiver. A solar powered, translucent, AM/FM, wind-up radio with integral solar panel has now been produced by BayGen, which operates on both solar and spring energy. The radio draws energy from available light and switches automatically to spring energy only when needed. It gives unlimited playing time in direct sunlight.

Enquiries: UK phone 01285-659559. International phone +44-1285-659559. UK Fax 01285 659550 E-mail baygen@lineone.net.

Regression with AIDS-related Kaposi's sarcoma during therapy with thalidomide

Writing from The University Children's Hospital, Zurich, Switzerland, the Division of Virology, Department of Medical Microbiology and the MRC HIV Clinical Trials Centre, University College London Medical School and University College and University College London Hospitals NHS Trust, London, RA Solèr and colleagues describe an interesting response to thalidomide, summarized as follows–

> 'A 14-year-old girl with HIV infection and subcutaneous Kaposi's sarcoma (KS) received thalidomide therapy for oral ulcers, resulting in regression of KS lesions, disappearance of KS-associated herpesvirus (KSHV) DNA from blood, and reduced viral load in tumor tissue. Administration of granulocyte colony-stimulating factor resulted in clinical exacerbation of KS and reappearance of KSHV DNA in blood.'

The authors are, however, cautious about the implications of the response observed in one case and the final paragraph of the Discussion runs as follows–

> 'Although this case suggests that thalidomide may be efficacious in the treatment of a patient with HIV-related KS, conventional chemotherapy, radiotherapy, and IFN-α should remain first-line therapeutic options. However, we suggest that thalidomide should be further studied as a therapeutic agent for the treatment of HIV-induced KS and that its use may be justified in patients with disseminated KS who are considered unsuitable for or who are unable to tolerate conventional therapeutic interventions.'

(One of the co-authors, Professor David Nadd, Zurich, has kindly supplied further information: after publication of the case report above, the patient developed further Kaposi's sarcoma lesions despite continued medication with thalidomide. She died 2 months later and autopsy was refused.)

Leprosy and leprophilia

The following is taken from *World Health* No 2, March–April 1998–

> 'I want it eliminated'
> In his novel *A Burnt-Out Case*, set in a 'leproserie' in central Africa, the novelist Graham Greene invented the word 'leprophil' for people who appeared to prefer the disease to the

people who suffered from the disease. The physician in charge, Doctor Colin, says: 'You remember that little leproserie in the bush that the nuns ran. When DDS [dapsone] was discovered to be a cure, they were soon reduced to half a dozen patients. Do you know what one of the nuns said to me? 'It's terrible, doctor. Soon we'll have no lepers at all.' There surely was a leprophil.'

Another character comments: 'All the same, doctor, you've said it yourself, leprosy is a psychological problem. It may be very valuable for the leper to feel loved.' Doctor Colin replies: 'A patient can always detect whether he is loved or whether it is only his leprosy which is loved. I don't want leprosy loved. I want it eliminated.'

Green dedicated his novel, published in 1961, to Dr Michael Lechat whose leprosy hospital at Yonda in the Congo he had visited. The forward expressly says: 'I hope you will accept the dedication of this novel, which owes any merit it has to your kindness and patience. ... Doctor Colin has borrowed from you his experience in leprosy and nothing else.' Professor Michel Lechat is a distinguished leprologist. Formerly President of the School of Public Health, Catholic University of Louvain in Brussels, he is President Emeritus of the International Leprosy Association (ILA) and President of the International Leprosy Union (ILU). (Read his article 'History of a Disease' on page 8 of the May–June 1996 issue of World Health.)

Professional fundraising

This publication is aimed at charities and the non-profit sector and claims to be '... the only magazine dedicated to workers in these sectors. It carries information on management strategy, the internet, legacy giving, direct mail campaigns, planning of fund-raising events, telemarketing, corporate giving, industry profiles, regular international news and feature articles'. The July 1998 issue includes sections on The Netherlands non-profit sector; The Imperial Cancer Research Fund, Intermediate Technology. The British Lung Foundation: The British Red Cross; Fight for Sight and Sight Savers International. The three end-pages of this issue carry information on address management systems; consultants; copywriters; database services; design consultancy; sponsorship and mailing lists.

Enquiries: Professional Fundraising, TM and D Press Ltd, (Dept G2), 39–41 North Road, London N7 9DP, United Kingdom. Telephone 0171 700 3479. Fax 0171 700 2049. e-mail tmd.press@-btinternet.com

USA allows thalidomide for leprosy sufferers

The following appeared in *The Guardian* newspaper, 17/7/98–

The United States yesterday became one of the first countries to relicense thalidomide—35 years after it banned the controversial drug—when government health officials authorised it for sale.

But the decision by the federal Food and Drug Administration was hedged with unprecedented restrictions aimed at ensuring that there can be no repeat of the thousands of birth defects which turned thalidomide into one of the most notorious drugs of all time, and triggered a legendary 1960s British lawsuit between the victims and Distillers, the UK parent company of the firm marketing the drug.

After months of speculation, the FDA said yesterday that thalidomide was an effective treatment for a small number of leprosy patients who suffer from a serious inflammation called erythema nodosum leprosum. However, in authorising the use for this small

group—there are said to be around 50 cases in the US each year—the FDA imposed a raft of tight restrictions.

Every patient who uses the drug will be required to enrol in a government monitoring programme. The makers of thalidomide, the New Jersey-based firm Celgene, will be allowed to supply the drug only to authorised chemists and dispensers. Women patients will be required to undergo pregnancy tests, and all patients for whom thalidomide is prescribed will be told to use contraception at all times.

However, the FDA said it could not require doctors not to prescribe thalidomide for other appropriate conditions, and it is known that the drug is being tested for possible use in treating Aids-related ulcers and wasting. Thalidomide is quite widely available illegally in the US as an Aids-related treatment, and the FDA acknowledged that it may in due course be prescribed more widely in these and other cases.

Thalidomide was banned worldwide 35 years ago after it was blamed for birth defects in more than 12,000 babies, many of whom were born without arms or legs, and with defective organs.

The drug had been prescribed widely during the 1950s and 1960s as a sedative and treatment for morning sickness for pregnant women in 48 countries, including Britain.

Ironically, the FDA won widespread praise at the time because of its work in preventing the drug from going on sale in the US. A few Americans nevertheless took thalidomide in clinical trials or had it prescribed in other countries.

A number of other countries, including Brazil and Mexico, have recently authorised the limited availability of thalidomide.

InDevelop

InDevelop Uppsala AB (International Development Consultant Services) is an independent Swedish consultancy company specializing in social development, especially within the health sector. The company was established in 1986 and is owned jointly by the University of Uppsala and HifabGruppen AB in Stockholm.

InDevelop works in a tradition of strong commitment to health development in the developing countries. The company seeks in particular to focus on vulnerable groups such as women, children and disabled. In its work the company adheres to principles of long term sustainable development with true participation in the decision making of those who are at the receiving end of the international assistance.

The company manages long-term projects focused on technical assistance in ministries and other organisations in developing countries. On behalf of Sida, NORAD. Unicef, the European Union and the World Bank, InDevelop is engaged in planning of large scale health programmes in countries like Vietnam, Cambodia, India, Uganda, Tanzania, Ethiopia, Eritrea and Angola. The company is also running clinics for overseas personnel in several countries.

InDevelop is most experienced in arranging study and exchange programmes between Swedish and foreign organisations and institutions. Through its association with the University of Uppsala, InDevelop can offer facilities for study visits and training under guidance of prominent researchers.

The main office of InDevelop is situated in Uppsala, close to Stockholm. Through the permanent staff and short-term experts, InDevelop can provide expertise in many technical areas. Overseas the company has a number of persons employed on long-term contracts.

Through the company's subsidiary Sodeco (Social Development Consultants) in the university town of Lund in southern Sweden, services are also offered within other fields related to social development. Among the areas in which InDevelop and Sodeco together can offer services are:

Primary health care
Health policy and planning
Health care management

Health economics
Physical planning
Communicable disease control including AIDS control
Child health and development programmes
Rehabilitation
Epidemiology and needs assessment
Gender quality
Emergency and refugee programmes
Baseline studies of population trends, migration and urbanization
Population policies and programme implementation
Community involvement in development projects
Social impact assessments
Project planning and evaluation
Procurement
Human resources development

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Why conjugate vaccines protect longer

The British Medical Journal, volume 316, 23 May 1998, www.bmj.com, page 1571, included the following information on conjugate vaccines–

> 'The effectiveness of polysaccharide vaccines against diseases such as meningococcal meningitis is limited because they do not stimulate a T cell response, which is required to activate long term immunological memory. Also, polysaccharide vaccines induce poor responses in infants. Up to 40% of cases of meningitis in the United Kingdom are caused by *Neisseria meningitidis* type c; *N meningitidis* is particularly virulent in young babies and teenagers. Because the polysaccharide vaccine against meningitis A and C does not induce the production of immunological memory cells and is relatively ineffective in children aged under 2, it does not protect these vulnerable groups.
>
> Conjugate vaccines are being developed to overcome this lack of long term memory. Conjugation involves attaching the required polysaccharide component of the bacteria against which the immune response is to be directed to a protein. This conjugated complex then behaves more like a protein and is presented and processed in a T cell dependent manner. Activated T cells then secrete cytokines that elicit a long term memory response, which includes the production of antibodies and cell mediated immunity. This response occurs at all ages.
>
> Conjugated vaccines against meningitis A and C are likely to undergo clinical trials within 2 years. Developing a vaccine against meningitis B is harder because the risk of a cross reaction between certain HLA antigens and the B capsule polysaccharide, which could result in an inappropriate autoimmune response.
>
> Conjugate vaccines are also being developed against pneumococcal disease: 11 of the commonest childhood pneumococcal serotypes have been conjugated together with a protein in one vaccine, which should offer long term immunity against otitis media, community

acquired pneumonia, septicaemia, and meningitis. This vaccine is being assessed in clinical trials; results are expected in 1999—Abi Berger, *Science editor, BMJ.*''

Professor Douglas Young, Imperial College School of Medicine, London has kindly commented as follows:

'Conjugate vaccines certainly look excellent in the case of the encapsulated bacteria for which antibodies to surface components confer protection, but their application for mycobacterial disease is less clear. Antibodies may well modulate mycobacterial infection in some way—maybe altering details of their interaction with macrophages—but I don't think they play the same decisive role in protection. The generally favoured view is that T cell recognition of protein antigens is the main contributor to protection, though there has been recent interest in T cells that recognise non-protein antigens in mycobacteria. (Fairhurst R. M. *et al.* CDI-restricted T cells and resistance to polysaccharide-encapsulated bacteria. *Viewpoint Immunology Today.* Volume 19. Number 6. Pages 257–259.)

A vaccine for malaria?

The following article by Drs Howard Engers & Nina Mattock of the Special Programme for Research & Training in Tropical Diseases (TDR), WHO, appeared in *World Health* No 3, May–June 1998–

In the last decade, considerable progress has been made in the search for a malaria vaccine, and the turn of the century is expected to see one or more such vaccines being actively developed by the pharmaceutical industry.

Globally, malaria is a major public health problem. The story of mosquito resistance to insecticides and parasite resistance to drugs impeding malaria control is a familiar one. And while there are renewed efforts to combat malaria both through conventional and novel drugs and through vector control activities, an effective vaccine would constitute a powerful addition to these tools.

Natural exposure to malaria leads to the development of partial immunity in humans, but repeated re-infection is required to maintain this immunity. Inactivated sporozoites (parasite forms living in the mosquito which are infective to humans) have been shown to be highly effective at inducing immunity in humans. Unfortunately, it is not possible to produce inactivated sporozoites in the enormous numbers required to make this a feasible method of vaccination. However, we now have new technologies at our disposal. Nucleic acid-based DNA vaccine technology, for example, allows us to identify promising immunogenic molecules much more rapidly, and this considerably expands the number of potential vaccines. Novel adjuvants—neutral substances that enhance the body's immune response to antigens—are becoming available for clinical use. Other delivery systems (live vectors such as salmonella or vaccinia which incorporate antigen gene sequences, and DNA vaccines) are under development and starting to be evaluated in humans.

This improved knowledge and the availability of new technologies give us reason to believe that vaccination against malaria is possible.

What sort of vaccines are being developed?

The malaria parasite has a number of different stages in its life cycle. Candidate vaccines are based on various antigens derived from these different stages:

- *Pre-erythrocytic vaccines* prevent the malaria parasite sporozoite stage from entering or developing within liver cells. Such vaccines would prevent the severe and life-threatening consequences of malaria in non-immune individuals. About 20 human clinical trials with various *Plasmodium*

falciparum pre-erythrocytic vaccine candidates have been conducted to date. One highly promising candidate, 'RTS,S', is currently in field trials in the Gambia.

- *Asexual blood-stage vaccines* prevent the parasite merozoite stage from entering or developing with red blood cells. Immunity against the asexual blood stages of the parasite, which are responsible for the symptoms of malaria, would have a direct impact on disease morbidity and death in the individual but would not necessarily prevent people from getting infected. At least six asexual blood stage vaccines have been tested clinically or are currently undergoing human trials.
- *Transmission-blocking vaccines* inhibit development of the sexual stages of the parasite within the mosquito. The sexual forms of the malaria parasite develop in the red blood cells a few weeks after infection, and are infective for mosquitos biting infected individuals. With wide coverage these vaccines could reduce transmission of the disease in endemic regions by reducing the number of mosquitos infected. Several transmission-blocking candidate vaccines are already undergoing clinical trials for safety and immunogenicity in the USA.

Vaccines currently under development include:

- Vaccines based on cocktails of antigens (multicomponent vaccines). The first multicomponent synthetic peptide vaccine SPf66, developed by Dr Manuel Patarroyo in Colombia (representing three asexual blood stage antigens and a sporozoite antigen), is the most widely tested vaccine to date. It has given mixed results in field trials in South America, Africa and South-East Asia.

  Another multicomponent vaccine, engineered in attenuated vaccinia virus and expressing three pre-erythrocytic proteins, three asexual blood-stage antigens and a transmission-blocking candidate, gave limited protection in a human clinical trial in the USA. A third multicomponent asexual blood-stage vaccine under development by Australian scientists is currently undergoing clinical trial in Papua New Guinea.

Second-generation vaccines include those that contain modified malarial peptides or novel adjuvants; DNA vaccines (nucleotide sequences encoding the antigen in question), which have shown promising results in rodent models; and antitoxic or anti-disease vaccines.

WHY IS A VACCINE FOR MALARIA PROVING SO ELUSIVE?

We don't yet have a vaccine for any human parasitic disease. For malaria, there is the problem of not being able to grow malaria parasites in large enough quantities to make vaccines in the traditional way, either from live but weakened organisms or from crude antigen preparations. Hence the focus on synthetic peptides, recombinant proteins or DNA vaccines. One difficulty is that, in clinical trials so far, most vaccines have failed to live up to the potential they have shown experimentally in animal models. This situation may be overcome when novel, more powerful adjuvants for human use become available.

Then there is the difficulty of evaluation. The fact that there are no good *in vitro* surrogate screening systems to assess the efficacy of different vaccines in the laboratory is a significant limitation, and means that vaccines have to be tested experimentally, often in expensive, time-consuming animal model systems, including monkeys.

Another problem is that, unlike less complex organisms, parasites have developed ingenious ways of avoiding the host's immune response. For instance, the malaria parasite expresses different antigens at each stage of its life cycle, and is often able to change these antigens when the host mounts an immune response towards them. Different strains or isolates of the parasite can also express different forms of the same antigens. A multicomponent vaccine, aimed at covering several of the antigens, could overcome this problem but would be highly complex and difficult to develop. And finally, there is the complexity of conducting the clinical and field trials themselves, when researchers are confronted with measuring the reduction of morbidity and mortality following vaccination with a candidate vaccine.

Research on vaccines against malaria is mainly supported by a variety of international agencies, organizations, foundations and national funding agencies, including the governments of some countries

and various research institutes. There is also greater involvement of the private sector when vaccine candidates have reached advanced stages of development.

WHERE DO WE GO FROM HERE?

There is no guarantee that the current promising approaches to malaria vaccine-development will result in a cost-effective malaria vaccine. Nevertheless, new technologies are becoming available and there is intensified political and financial support for research on malaria. The UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases (TDR) is committed to evaluating the currently available leading *P. falciparum* malaria vaccine candidate in clinical trials by 2005. If all goes well, a malaria vaccine could be ready for use sometime in the next decade.

'VICTORY OVER LEPROSY DRAWS NEARER'

The following article appeared in a recent issue of *World Health*, No 2, March–April 1998:

As early as 1914, the Office International d'Hygiène Publique (OIHP)—a forerunner of WHO—ordained that there should be compulsory notification, as well as surveillance or isolation, of cases of leprosy. The disease was very clearly an international public health problem, and in the year of WHO's founding, 1948, the International Leprosy Association was among the first nongovernmental organizations to be brought into official relations with the infant organization. Shortly afterwards, an expert advisory panel was established whose members helped to prepare for the first meeting of the Expert Committee on Leprosy, held in Rio de Janeiro and São Paulo in 1952.

That Expert Committee confirmed two important points: 'that leprosy is not in most cases a highly infectious disease, and that, with the introduction of sulfone therapy, a good proportion of cases can be cured'. The experts also 'accepted that temporary isolation might still be necessary, though for infectious cases only, but it was suggested that ambulatory and domiciliary treatment could be safely and satisfactorily given to most patients'.

The First Ten Years of WHO, published in 1958, reported that the clinical results of treatment with diaminodiphenylsulfone—also known as dapsone—'tend to confirm the favourable results already reported in medical literature on the treatment of leprosy patients in specialized institutions'. Over-optimistically, it claimed that 'leprosy patients no longer tend to avoid treatment because of its possible association with segregation. They now come forward spontaneously'. There was also a mention of trials with BCG vaccination (the anti-tuberculosis vaccine) and of vaccines prepared with other mycobacteria, 'which appear to offer a certain degree of protection against leprosy'.

In 1968 *The Second Ten Years of WHO* reported: 'Participants in the seminar on leprosy control organized at Belo Horizonte, Brazil, in 1958 were agreed that compulsory isolation of patients should be abolished and replaced by effective control of foci through the treatment of all patients and surveillance of their contacts—hospitalization being restricted to cases in need of special medical or social care.' Later that year, the Seventh International Congress of Leprology, held in Tokyo, stressed that, from the epidemiological point of view, 'it is more advantageous to reduce infectiousness in many patients than to eliminate infectiousness in a few'.

POOR PATIENT COMPLIANCE

The Second Ten Years struck a gloomy note. 'Poor follow-up and attendance of out-patients for regular treatment continue to be a main obstacle in leprosy control programmes. Leprosy control has been based primarily on chemotherapy with sulfones, and surveys have shown that 73% of lepromatous patients require more than three years to become bacilli-negative. Unfortunately, the longer treatment continues, the less regular it tends to become,' It went on: 'The specialized leprosy control services need the active cooperation of the general health services, and leprosy control should be progressively integrated into the work of the health centres at the local level.'

All this was remarkably farsighted. There was the insistence that leprosy patients should not be segregated or isolated from their communities. There was the tantalizing vision of a drug that would actually cure leprosy without requiring many years of treatment. And there was the problem of maintaining patient compliance with drug regimens. Above all, there was the strong recommendation that leprosy control should be integrated with general health services, in fact with what was later to be called primary health care.

Certainly the drug dapsone seemed to offer some light at the end of the tunnel. Its use spread around the world in the next decades, thanks largely to the work of WHO and of its partner nongovernmental organizations, many of them members of what was to become the International Federation of Anti-Leprosy Associations (ILEP). But then dapsone ran into trouble. The long duration of treatment made patient compliance a big problem; it was rather a lot to expect a possibly disabled person to travel several miles every month to a health post to obtain the drugs. A patient who noticed an improvement—perhaps the disappearance of skin lesions—saw no further point in going on taking the pills. Worse still, *Mycobacterium leprae*—like so many other agents of disease that plague our planet—began to develop resistance to the drug. It looked as if mankind's only safe weapon against leprosy was about to become useless.

BETTER DRUGS NEEDED

The WHO Expert Committee on Leprosy, in its fifth report published in 1977, struck a note of alarm when it declared 'there is an urgent need for controlled clinical trials of combined chemotherapy in multibacillary leprosy' and called for research into alternative drugs to dapsone, with the cooperation of research institutes and the pharmaceutical industry. In due course, newer and better drugs came on the scene, in particular rifampicin and clofazimine, which proved to be both highly effective and well-tolerated by patients. As a result, a WHO Study Group which met in Geneva in October 1981 proposed a multidrug regimen consisting of these two drugs in combination with dapsone, since they did not merely kill *M. leprae* in quick time but also prevented the bacillus from developing resistance to any of the three.

It was this multidrug therapy or MDT which provided the breakthrough that at least made it possible to envisage putting an end to leprosy. Today, even people with the more severe form of the disease, multibacillary leprosy, can be guaranteed a total cure within the space of 12 months. Relapses—the recurrence of the disease after stopping treatment—are very rare, constituting well under 1% of cases. One unexpected result of the amazing success of MDT has been to put the never very hopeful quest for a viable vaccine on the back burner.

At the World Health Assembly in May 1991, the Member States of WHO made a formal commitment to bring about the elimination of leprosy as a public health problem by the year 2000. This means reducing the number of cases to less than 1 case per 10,000 people. A full account of how WHO and its partners are prosecuting the war against leprosy appeared in the May–June 1996 issue of *World Health*. In the mid-1980s, there were an estimated 12 million cases (and 5.4 million registered cases) in the world. Today that estimate has been revised to only around one million, while the number of registered cases—therefore receiving MDT—stands at around 800,000. Where there were 122 countries with prevalence rates above 1 per 10,000 in 1985, there are today fewer than 50. So the goal of elimination is not far away—but neither is the target date of the year 2000.

Aside from the purely medical aspects of the drive against leprosy, there is the human and social side. While the cure is certain for every person with leprosy who comes forward for MDT, many still face ostracism from their own communities, even from their own families. The social suffering lingers on and, together with the totally unjustifiable loss of human rights, adds a heavy psychological burden to the physical damage that they have undergone. So it is essential for everyone concerned in public health to spread the word that leprosy is curable, and it is extremely hard to 'catch,' and that sufferers need not and must not be shunned. Unless this message reaches every patient in every village, and unless they come forward for the drugs—which should be available at every clinic and primary

health care centre in the leprosy-endemic countries—the disease will still lurk in isolated and dangerous pockets.

It is important to avoid triumphalism and the tendency to count our chickens before they are hatched. But provided the impetus is maintained and provided there is no shortfall in the human and financial resources required we should be able to put paid to this age-old disease and ensure a leprosy-free world in the 21st century.

Former leprosy sufferers sue Japanese Government

Under the heading 'Forgotten leper outcasts return to haunt Japan', *The Guardian* newspaper of August 10th, 1998, carried the following:

Thirteen former leprosy sufferers are suing the Japanese government for keeping them in quarantine for more than 40 years after the discovery of an effective treatment.

The 1·5 billion yen (£6·2 million) suit is the first attempt to make the government legally liable for its quarantine policy.

Under Japan's 1953 Leprosy Prevention Law, sufferers were kept in remote sanitariums with little or no access to the outside world. Pregnancies were also forcibly terminated in the mistaken belief that leprosy is hereditary.

Despite a recommendation by the World Health Organisation in 1960 that such policies were no longer necessary, the Japanese government abolished the quarantine law only 2 years ago. By then, most of the residents in Japan's 15 sanitariums were too old to leave—about 5,200 stayed on.

The plaintiffs have spent an average of 46 years in the sanitariums. In their suit, launched last week at the Kumamoto district court in southern Japan, they claim the government violated their constitutional rights by retaining the isolation policy. They also claim the authorities failed to rehabilitate them adequately after the law was scrapped.

Many of the plaintiffs want to remain anonymous because of the social stigma attached to the disease.

Among those who spoke out, however, was Isao Tateyama, aged 49, who was sent to a colony in Kagoshima prefecture when he was 13.

'Because of the isolation policy, I lost my family, my hometown, my life, everything', he said. 'I believe all of us are entitled to be happy to make up for all the tears we have shed.'

The health and welfare ministry said the case was unexpected. 'I thought the patients wanted government support for medical costs and welfare projects, not individual compensation,' said a spokesman, Hiroki Nakatani.

Although the disease is contagious, it rarely spreads through person-to-person contact. Since 1941 it has been possible to arrest most of the symptoms with medication.

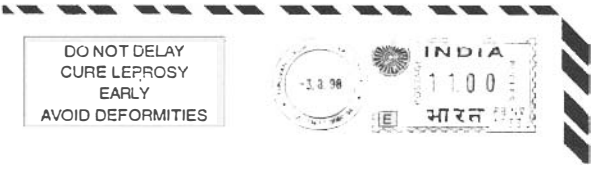
NSL (Netherlands) changes to NLR

Komme L Braber, Director of the newly named *Netherlands Leprosy Relief*, abbreviated NLR, has written to draw attention to the change of housestyle and the development of a new logo, showing hands together, symbolizing collaboration, solidarity and care. The former NSL logo should not be used any longer. *Enquiries*: Netherlands Leprosy Relief, PO Box 95005, 1090 HA Amsterdam, The Netherlands.

Indian Postal Department carries message about leprosy in postage franking machine

Mr K. Subramahyan, Assistant Editor of the *Indian Journal of Leprosy* has kindly confirmed that the

message (below) on letters from India appears with the blessing of the Indian Postal Department which permits the use of a logo or message of specified dimensions. We reproduce it here in the hope that it may be valuable in other leprosy-endemic countries.



Note

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