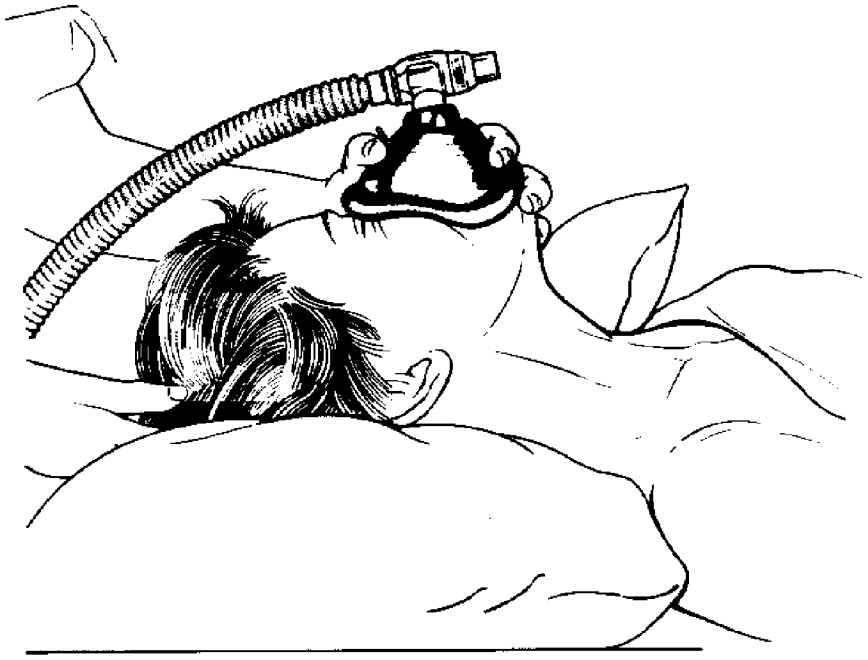

Health Care

"Each month a civil servant dies in the capital because there is no penicillin. Each day a child in the country recovers from a fatal disease because of a plant growing in the forest."

—Benjamin Owuor, quoted by Aggrey Nyong'o

"We are dedicated to completely eradicating all anti-scientific attitudes and ideas."

—Cuban doctor

T*hese contrasting views are common among people who are dedicated to improving the level of health among the world's poor. There is the romantic who unquestioningly believes in the general effectiveness of traditional remedies, and there is the crusading doctor who sees only superstition in native cures. Both perspectives are partly valid; traditional remedies range from the dramatically effective to the dangerous. The main weakness of traditional medicines has been the failure of its practitioners to question the validity of cures; due to coincidence and the power of suggestion, good and bad remedies are added uncritically to the medical kit of the indigenous healer. Nor has there been sufficient dispassionate review of what is effective, harmless, and dangerous within the drug arsenal of modern medicine. A major challenge in developing appropriate health practices and remedies is to draw together the effective, cheap, and safe treatments in both traditional and modern healing systems.*

Equally important is the question of the kind of people and roles that are to be supported in a strategy for the development of a health care system or systems.

Much has been written about why modern facilities cannot be extended to reach the entire population of most of the South. Among the many reasons for this, the great expense of elaborate facilities, the chronic shortage of professionals to work in rural areas, and the high cost of physician training programs are the most frequently cited. Because of these problems, health programs are increasingly involving lesser trained health workers from the communities in which they work. These people have in many ways a more demanding role than the doctor, requiring a broader range of skills and knowledge to successfully offer basic curative care, lead preventive and health education programs, and take part in community organizing. A unique and significant advantage Is that as members of their community they know it intimately. Schemes involving community level health workers are now operating all over the world.

The need for more "medical auxiliaries" is also acutely felt in the United States, a country which "imports" many thousands of graduates from the poor countries that can least afford it. This is no less than a national disgrace. We too need larger numbers of lesser trained health workers to become self-sufficient in health care. Such people are quite capable of treating most common health problems. Doctors are probably universally over-worked, whether in the halls of "Mass. General " or in the rural areas of Central America. Even selfless service in a needy area, however, does not begin to meet the longer-term health care needs of the people unless it involves training members of the community so that they can begin to tackle their own health care problems. In developing countries the vast majority of problems are relatively simple ones, often avoidable through the application of basic principles of preventative medicine, and usually compounded by a poor level of nutrition and a lack of access to prompt treatment.

A villager whose main qualifications are the ability to read and write (3 to 6 years of primary education) and a sense of responsibility and compassion for his or her fellow human beings can be trained in two months to diagnose, treat, and prevent 95% of the health problems commonly found in developing countries. Often these local health workers have proven themselves to be more effective in diagnosing and treating common local problems than a small overburdened professional staff. They live among the people they treat and charge what people can afford. Because they have grown up in the community, they know the socioeconomic and family history of their patients, and they are sensitive to local concepts of health, disease, and treatment. For these reasons they frequently have insights into the causes of local health problems and their advice is more likely to be understood and followed.

Unfortunately, those who endorse the use of village health workers frequently pay only lip service to the depth and breadth of indigenous knowledge and skills. In health care, as in other related aspects of community development, outside agencies have often been quick to assert the absolute superiority of their (usually Western-based) methods. And people who have been long oppressed and belittled are sometimes also quick to accept what outside agencies offer, abandoning their own traditions. Making matters worse, the chief medical personnel in programs working with village health workers often have little faith in these people and allow them few responsibilities; too often the result has been the creation of little more than referral systems that continue to swamp understaffed clinics in towns and cities.

It appears that this situation is changing for the better. In the last ten years, a number of manuals for training village health workers (VHWs) have appeared which provide practical medical information while recognizing the validity of

traditional health care roles and experiences. The success of **Where There Is No Doctor**, *with over a million copies in print and translations in more than 50 languages is an indicator of the usefulness of and demand for this kind of reference material.* **Helping Health Workers Learn**, *by the same people is a wonderful collection of ideas and insights; many of them could be modified for use in non-health programs as well. In addition to other manuals reviewed here, three bibliographies concentrate on materials written for trainers and program leaders.*

The classics, **Medical Care in Developing Countries** *and* **Pediatric Priorities in the Developing World**, *should be required reading for all expatriate medical personnel, and there is much in them to be recommended to nationals in developing countries. Half a dozen books are to be found on the Chinese experience with health care, of considerable relevance to other developing countries attempting to meet the health care needs of large dispersed populations under conditions of limited resources. It seems paradoxical but true that increased self-reliance in health care depends greatly on supportive initiatives taken by the policy making centers in government. A notable new strategy for health education and community participation in preventative and basic curative health care is described in* **Child-to-Child**. *Recognizing that small children are often cared for and taught by their older brothers and sisters, the child-to-child strategy is to develop activities in which older children teach younger children simple practices (like the use of homemade toothbrushes) and identify children with hearing, eyesight, and malnutrition problems. These activities make learning an exciting adventure in which children discover for themselves how and why a problem exists, then together take an action to do something about it. Where health workers and school teachers have conducted child-to-child activities, impressive gains have been made.*

In **Child-to-Child** *and other manuals reviewed here, the words "child" and "children" appear again and again as the focus of rural health care programs. Especially vulnerable to disease below the age of five years and often malnourished, children constitute the majority of the Third World's sick and dying people. Untreated infant diarrhea leading to severe dehydration in malnourished children is the leading cause of death in communities in developing countries. A simple rehydration solution that can be made in any village kitchen can save these lives. Through formal and informal education, including visits by village health workers, children and adults can be taught how to make this solution for early treatment at home before dehydration becomes serious. The World Health Organization is promoting the dissemination of prepackaged powdered mixes that accomplish the same thing.*

In the long run, hygienic and public health measures, particularly the provision of a safe supply of water for washing and drinking, are critical steps in improving basic community health and reducing infant diarrhea and infant mortality. The control of communicable diseases (books on this subject are reviewed in this section) also depend heavily on a safe water supply and adequate waste disposal systems. Many of the references in the WATER SUPPLY AND SANITATION chapter are relevant here.

In addition to these factors, which visibly influence the health of the community, land reform and agricultural development have major roles to play in improving the basic health of rural people. Some health care programs are now including agricultural development projects and pressure for land reforms as part of a total effort to improve community health.

Health care equipment that can be locally produced is described in **Where There Is No Doctor**, **How to Make Basic Hospital Equipment**, *and* **Where There Is**

No Dentist. *For equipment to help with physical therapy and disabilities, see* **Low Cost Physiotherapy Aids**, **Disabled Village Children**, **Independence Through Mobility**, *and* **Rattan and Bamboo**. *The equipment needs and proper operation of basic medical laboratories are the subject of* **A Medical Laboratory for Developing Countries** *and several other books.*

Where There Is No Doctor; New Revised Edition, MF 27-716, book, 512 pages, by David Werner, 1992, $13.00 ($6.00 to local groups in developing countries) plus $1.00 overseas shipping, from the Hesperian Foundation, P.O. Box 1692, Palo Alto, CA 94302, U.S.A.

This famous medical handbook was written for literate villagers and community health workers. It is the product of more than 25 years' work in a villager-run health care network in the mountains of Mexico. The original English and Spanish editions (Donde No Hay Doctor, MF 27-681,430 pages, 1980 [currently being revised] same price and source) have been translated into more than 50 languages around the world, including French, Portuguese, Swahili and Arabic. The foundation will provide addresses for local editions.

The text “takes into consideration local beliefs and customs, gives guidelines for determining the usefulness vs. hazard of different folk remedies, and discusses the common misuses as well as correct uses of medications commonly available. It starts with a discussion of traditional concepts of illness and healing, and from there leads into 'modern' concepts. The book, which has hundreds of simple but informative drawings, is also used by health workers to teach patients about their health problems, their causes and prevention.” An interesting feature of this book is a colored index that tells the names and uses of drugs the villagers may come into contact with. (Many of these drugs are commonly used without any knowledge of their effects.)

This new revised edition contains updated medical advice throughout, and also much new information: AIDS and some other sexually transmitted diseases, dengue, leishmaniasis, guinea worm, sickle cell disease, and measuring blood pressure. This new book has the most current information on women's health care, first aid, appropriate low-cost nutrition and cereal based oral rehydration, and also covers some health problems related to social issues such as dangerous pesticides, complications from abortion and drug addiction.

Health Care and Human Dignity, MF 27-684, paper, 25 pages, by David Werner, 1976, $2.00 from the Hesperian Foundation, P.O. Box 1692, Palo Alto, California 94302, USA.

Written by the author of Where There Is No Doctor (see review), this paper briefly summarizes the major insights gained from a study of nearly forty rural health projects in Central and South America. It is the clearest, most coherent discussion we have seen of the features of "community supportive" rural health programs and the obstacles to be faced by people wishing to foster these programs on a broader scale. "*Community supportive* programs or functions are those which favorably influence the long-range welfare of the community, that help it stand on its own feet, that genuinely encourage responsibility, initiative, decision making and self-reliance at the community level, that build upon human dignity .... The programs which in general we found to be more community supportive were small, private, or at least non-government programs, usually operating on a shoestring

and with a more or less sub rosa (low-profile, unofficial) status"

Werner goes on to identify key factors tending to limit or slow the growth of community supportive programs: paternalistic attitudes among those in charge of health care delivery programs, overemphasis on medical "safety," bureaucracy (or, the "superstructure overpowering the infrastructure"), commercialization, and government fear of the politically destabilizing potential of increased rural skills and abilities. The paper concludes with a list of steps that might be taken to implement a countrywide approach to community supportive health care. Appendices compare and contrast the objectives, size, financing, and other characteristics of "community supportive" vs. "community oppressive" health programs.

An extremely useful combination of criticism and positive suggestions for future progress, of interest to anyone interested in health as part of community self-reliance.

Highly recommended.

The Village Health Worker—Lackey or Liberator?, MF 27-714, paper with charts and drawings, 16 pages, by David Werner, 1977, $2.00 from the Hesperian Foundation, P.O. Box 1692, Palo Alto, California 94302, USA.

David Werner elaborates on points made in **Health Care and Human Dignity** (see review above), illustrating how socioeconomic context and political objectives of program planners affect rural health programs. Werner and several co-workers visited some 40 health worker programs in Latin America. "In the majority of cases, we found that external factors, far more than intrinsic factors, proved to be the determinants of what the primary health worker could do .... We concluded that *the great variation in range and type of skills performed by village health workers in different programs has less to do with the personal potentials, local conditions or available funding than it has to do with the preconceived attitudes and biases of health program planners consultants and instructors*. In spite of the often repeated eulogies about ‘primary decision making by the communities themselves,’ seldom do the villagers have much, if any say in what their health worker is taught and told to do. The limitations and potentials of the village health worker—what he is permitted to do and, conversely, what he could do if permitted—can best be understood if we look at his role in its social and political context. In Latin America, as in many other parts of the world, poor nutrition, poor hygiene, low literacy and high fertility help account for the high morbidity and mortality of the impoverished masses. But as we all know, the underlying cause—or more exactly, the primary disease—is inequity: inequity of wealth, of land, of educational opportunity, of political representation and of basic human rights .... As anyone who has broken bread with villagers or slum dwellers knows only too well: *health of the people is far more influenced by politics and power groups, by distribution of land and wealth, than it is by treatment or prevention of disease*."

Health by the People, MF 27-683, book, 202 pages, edited by Kenneth Newell, 1975, order #1151072, 36 Swiss Francs or US $28.80 (30% discount for orders from developing countries) from WHO; also available in French.

These articles on 10 successful rural health programs in Indonesia, India, Guatemala, Venezuela, Niger, Iran, Tanzania, China and Cuba focus on community development and health services that use local people as health workers. The

programs described range from national to village scale.

"There is no longer any doubt that a primary health worker can work effectively and in an acceptable manner and that he or she does not need to be a nurse or a doctor as we at present know them."

"The wider issues presented here include ... self-sufficiency in all important matters and a reliance on outside resources only for emergencies, an understanding of the uniqueness of each community coupled with the individual and group pride and dignity associated with it; and lastly, the feeling that people have of a true unity between their land, their work and their household."

"Each country or area started with the formation, reinforcement, or recognition of a local community organization. This appeared to have five relevant functions: it laid down the priorities; it organized community action for problems that could not be resolved by individuals (e.g., water supply or basic sanitation); it 'controlled' the primary health care service by selecting, appointing, or 'legitimizing' the primary health worker; it assisted in financing services; and it linked health actions with wider community goals."

"In no example presented here is there a separation of the promotional, preventive, and curative actions at the primary health care level."

Written by planners, participants, and observers.

The Principles and Practices of Primary Health Care, Contact Special Series No. 1, MF 27-707, book, 112 pages, 1979, Christian Medical Commission, World Council of Churches, out of print.

This is the first book of the **Contact** Special Series, which reproduces articles on a single theme from the bimonthly periodical **Contact**. Includes 16 readings focusing on primary health care. Good background reading.

Health: The Human Factor, Readings in Health, Development and Community Participation, Contact Special Series No. 3, MF 27-688, book, 124 pages, edited by Susan B. Rifkin, 1980, Christian Medical Commission, World Council of Churches, out of print.

This book includes 11 readings on community participation in relation to health programs.

Recommended.

Pediatric Priorities in the Developing World, MF 27-705, book, 429 pages, by Dr. David Morley, 1973, also in Indonesian, Spanish, French, and Portuguese, out of print, revised edition may be available by 1995 from TALC.

Dr. Morley "examines the problem facing child health services throughout the developing world: the urgent need to decide which of all the measures that may be taken to reduce the appalling levels of childhood mortality and morbidity should have the highest priorities when financial resources are so severely limited .... The author is responsible for the innovation of the under-fives' clinic and for the design of a weight chart" to quickly identify and combat malnutrition. These two measures have subsequently been adopted by many developing countries.

"The author's objective is to orient the medical student or doctor towards the practical problems he will meet when involved in child care in a rural community. Careful emphasis is placed on the social, economic, cultural and ethical

considerations which are ignored by most medical schools. Not only doctors but also nurses and other health workers ... will benefit from this book. It is written for the doctor dissatisfied with the type of medical training which is based largely on European systems of health care, much of which may be inapplicable to his own country."

Morley emphasizes low-cost health services, within the means of the people involved, and the need to make extensive use of auxiliaries and villagers themselves. Primary focus is on rural societies because of the large numbers of children and the need for a different type of health care system than that suited to urban areas. Morley also stresses the need for the pediatrician to work on health education, and teach her/his own skills to her/his staff.

Morley worked for many years in a rural area of Nigeria. More recently, he was instrumental in creating the Tropical Child Health Unit at the Institute of Child Health in London. He also helped create the group Teaching Aids at Low Cost.

Medical Care in Developing Countries, MF 27-694, book, 500 pages, edited by Maurice King, 1967, reprinted 1973, 813.95 from Oxford University Press, 2001 Evans Road, Cary, North Carolina 27513, USA; Spanish edition $8.50 (40% discount to charitable groups) from Editorial Pax Mexico, Libreria Carlos Cesarman, S.A., Avenida Cuauhtemoc 1434, Mexico 13 D.F., Mexico.

"A primer on the medicine of poverty." This classic book evolved out of a WHO/UNICEF-supported conference on "Health Centres and Hospitals in Africa." In it, Maurice King, David Morley, Derrick Jellife and others come together under King's editorship to create a remarkable, comprehensive handbook for medical personnel. The slant is decidedly towards the doctor or other professional from the developed world who is working in the developing world. Material covered ranges from the organization of health services and the cross-cultural outlook in medicine to pediatrics, anaesthetics, and the laboratory. The recommendations are always realistically within the limits imposed by poverty and a commitment to get basic care to the largest number of people possible.

Primary Child Care: A Manual for Health Workers, Volume 1, book, 315 pages, by Maurice King, Felicity King, and Subagio Martodipoero, 1978, Oxford University Press, £3.50 from TALC; also available in Portuguese; also from TOOL.

Sponsored by the World Health Organization, this basic English text is intended to be adapted and translated for direct use by health workers everywhere "It contains a selection of the most appropriate technologies for primary child care taken from all over the world."

The step-by-step approach, from the basics to the needed level of understanding, makes this a valuable book for people with only a limited knowledge of the field. For each major category of illness (e.g., "Coughs"), the authors begin with illustrations and background information on the system or parts of the body affected (e.g., respiratory system). Then they discuss the different combinations of symptoms, diagnosis and treatment. They have included many effective diagrams that explain how infections and diseases spread.

More than 80 pages are devoted to community health problems, supplies and equipment, and procedures for examination, sterilization of equipment, and record-keeping. Dosage information is provided for all drugs mentioned. There is a glossary of 200 key scientific and medical terms, with which "you will probably be

able to understand anything written in the rest of the book."

The three authors invested years of hard work in this wonderful book, undoubtedly the most valuable one that WHO has ever sponsored. This is an outstanding resource, which could become the basis for training programs for child health workers at many levels.

First Aid: Responding to Emergencies, book, American National Red Cross 1991, stock no. 650005, available from Mosby Year Book, 7250 Parkway Drive, Suite 510, Hanover, Maryland 21076, USA.

A very good basic first aid book. Well-illustrated. A good value at the price.

What is AIDS?, MF 27-728, booklet, 28 pages, by Christian Medical Commission available from Christian Medical Commission, World Council of Churches, 150 route de Ferney, 1211 Geneva 20, Switzerland.

A brief illustrated manual for health workers, this booklet provides basic information on AIDS, such as how to prevent its spread, AIDS and pregnancy, what the HIV carrier should know, how to diagnose patients with AIDS, care and treatment, and handling equipment.

Animals Parasitic in Man, MF 27-670, book, 320 pages, by Geoffrey LaPage, 1963, out of print in 1985.

This is a detailed discussion and description of most of the parasites that commonly attack humans. The life cycles of the parasites, ways humans are infected, prevention techniques and some medical treatments are discussed in detail.

"In any event each parasitic animal is limited to a certain range of hosts. It is, that is to say, *specific* to these hosts and cannot live in others. This *host-specificity* is an important feature of parasitism and it will be necessary to refer to it throughout this book. It will be evident, for instance, that if a particular host, such as man, is one of the usual hosts of a certain species of parasitic animal, it is necessary, if we wish to prevent the spread of this parasitic species, to know what its other usual hosts are, because all these hosts may be sources from which the parasitic animal may spread. These other hosts are reservoirs of the infection and they are called *reservoir hosts*."

Parasites are a problem in every part of the world that humans inhabit. Many of the parasites are so common in certain areas that it is quite unusual if an individual does not have them. Health campaigns to eliminate parasites must include education of the affected people about parasite hosts and requirements for preventing the spread of parasites. This book could be a useful reference in such an educational effort.

Communicable Diseases: A Manual for Rural Health Workers, MF 27-678, book, 349 pages, by Jan Eshuis and Peter Manschot, 1978, revised edition August 1992, $3.50 from AMRF, P.O. Box 30125, Nairobi, Kenya; also available from TOOL.

A training and reference manual for Medical Assistants and Rural Medical Aides in Tanzania. "Most of the common diseases in Africa are environmental diseases due to infection by living organisms—viruses, bacteria, protozoa, or metazoa. These are called communicable diseases because they spread from person to person, or sometimes animals to people. Together with malnutrition they are today the major cause of illness in Africa .... For the first time, all the essential

information on communicable diseases, from both clinical and public health aspects, has been collected in one volume, adequate for the training of paramedical staff."

This manual groups diseases by how they spread—by contact, by fecal contamination, by airborne germs, and so on. For each disease, information is provided on where it is found in Tanzania, causes, symptoms and diagnosis, and control. Much of the content is relevant in other regions. Most of the text is in simple English, although medical terms are also used. Drawings show sources and agents of disease in the African village environment. The authors discuss the kinds of public health measures which interrupt the transmission of diseases and prevent their spread. Historically, adequate supplies of water and safe handling of human waste have been the most important factors in the prevention of communicable diseases.

The African Medical and Research Foundation has published a series of similar books on child health, health education, pharmacology, immunology, and other topics. More information on the series can be obtained from the Foundation at the address above.

Control of Communicable Diseases in Man, book, 418 pages, 13th edition, edited by Abram Benenson, 1975, revised 1980, American Public Health Association, Dfl. 22.70 from TOOL.

Communicable diseases and malnutrition are the major killers in the South. This is a good reference for teachers of health workers, and contains valuable ideas for program leaders who must cope with epidemics. The difficult language means that this book cannot be directly used in explaining the information to health workers. No attempt has been made to deal with the human, social, and cultural factors that must be considered before many of the recommendations can be followed. Some of the recommendations are not "affordable" in the Third World.

Helping Health Workers Learn: **A Book of Methods, Aids and Ideas for Instructors at the Village Level**, MF 27-689, book, 632 pages, by David Werner and Bill Bower, 1982, $13.00 ($6.00 to developing countries) plus $1.00 overseas shipping from the Hesperian Foundation, P.O. Box 1692, Palo Alto, California 94302, USA; also available from ITDG and TOOL.

This excellent book is the best of several new manuals on the training of village health workers. It is drawn primarily from more than 15 years' experience with an unusual community-based clinic and network of health workers operating in the tiny communities of mountainous Sinaloa in Mexico. Some of the material comes from visits and communications with health worker training programs in 35 countries.

Here is a wealth of good ideas for teaching about health and demonstrating health care practices, using simple materials and group participation. Some of these nonformal educational approaches can be effectively applied to disseminate information in other fields.

David Werner is the primary author of the widely used and translated manual **Where There Is No Doctor** (see review). Bill Bower has contributed to the Spanish and English translations and revisions of **Where There Is No Doctor**, and has worked extensively in health worker training in Central America and Mexico. Both authors have visited many different training programs around the world.

Child-to-Child, book, 104 pages, by Audrey Aarons and Hugh Hawes, with Juliet Gayton, 1979, £3.90 from MacMillan Education, Houndmills, Basingstoke RG21 2XS, United Kingdom.

"We know a group of community workers who know every inch of the village in which they work, who are accepted by everyone, who want to help their community, who will work hard (for short periods of time) and cheerfully (all the time). Last month, the health worker used them to collect information about which children had been vaccinated in the village. Next Tuesday, some of them will help to remind the villagers that the baby clinic is coming and they will be at hand to play with the older children when mothers take their babies to see the nurse. Next month they plan to help the school teacher in a village clean-up campaign. These health workers are the boys and girls of the village .... This book ... calls on us to recognize what children already do towards helping each other and helping us. It suggests ways in which we can support them and in which we can make their contribution more effective, easier, and more fun."

This well-illustrated book was put together with ideas from around the world, from people who believe that development starts with local level action. It provides a selection of possible activities, such as organizing a survey, making a community health map, discovering common accident patterns and preventing them, treating children with diarrhea (including making a special salt and sugar spoon for the water mixture to treat diarrhea), caring for sick brothers and sisters, and finding out what younger children eat and whether it is nutritionally adequate.

Experience thus far suggests that this is an effective approach to health education. These examples of community-based learning and action (in which local resources skills and problems are identified) are models of the kinds of steps essential for people's participation in any type of development effort.

Teaching Village Health Workers: A Guide to the Process, two books, 117 pages total plus several charts and visual aid cards, $3.00 plus postage from Voluntary Health Association of India, Tong Swasthya Bhavan, 40 Institutional Area, Near Qutab Hotel, New Delhi 110 016, India.

Book One vividly illustrates how trainers of village health workers can approach communities in a sensitive manner. Diagrams, cartoons, and text give examples of how knowledge of the community helps village health workers deal with problems more effectively. "Don't be blinded to the social, political and economic forces which will play an important part in the shape and direction of the community health programme."

The first requirement is that the trainer be a "changed person." "Do you really feel that a little-educated, or illiterate woman or man knows more than you do about the village? Are you willing to learn from them and the other 'students' in your class of village health workers?" With this orientation, Book One offers guidelines for curriculum development, teaching methods, and simple communications media.

Book Two (Lesson Plans and Curriculum Charts) describes how to teach a limited range of specific treatments and preventative measures to village health workers. Because the health workers in this program were mostly illiterate, the level of sophistication has been limited. Certainly, literate health workers in many communities will be able to go far beyond this material, to use of more

comprehensive manuals like **Where There Is No Doctor** or **Primary Child Care** (see reviews).

Reference Material for Health Auxiliaries and Their Teachers, MF 27-709, annotated bibliography, 164 pages, bilingual English/French, 1982, 2nd edition WHO Offset Publication No. 28, stock no. 1120028, $12.00 from WHO.

This reference work is WHO's response to "the shortage of suitable reference material (textbooks, manuals, course guides, etc.) for health auxiliaries and their teachers and a nearly complete lack of such material in the local language spoken by these auxiliaries. In the delivery of health care the biggest need is for health auxiliaries working in rural and 'ultrarural' areas, i.e. medical assistants, auxiliary nurses, midwives, nurse-midwives and auxiliary sanitarians. Therefore REMEHA decided to concentrate its attention on reference material for these categories ...."

"It was also agreed that by first giving priority to reference material suitable for the use of teachers—both groups, teachers and students, would be served. The main long term objective, however, should be to promote production at national and local level of reference material for students—in other words to compose a kind of 'do-it-yourself kit' for teachers which should include a set of good examples of existing reference and source materials, a guide on the writing of manuals, and illustration material. This could enable them to undertake the local production of reference material for students which would meet the local requirements better and may be written in the local language."

540 references were selected from those gathered. The annotations are brief but concise. Publisher and price are given where possible.

Medicine and Public Health in the People's Republic of China, MF 27-697, book, 333 pages, edited by Joseph Quinn for the Fogarty International Center, 1973, Department of Health, Education, and Welfare Publication No. (NIH) 73617, out of print.

Here is a collection of articles with information not found in the other books on China we've reviewed. The section "Chinese Medicine Throughout the Ages" includes articles on acupuncture, surgery, traditional medicine as a basis for medical practice and the role of the family in health care. The second section treats public health laws, health care in rural areas, and the training of medical workers and the Academy of Medical Sciences. The last group of articles describes the health problems that China is struggling to overcome today.

Health Care in China—An Introduction, MF 27-685, book, 140 pages, Christian Medical Commission, 1974, out of print in 1985.

The Christian Medical Commission gathered a group of medical and social scientists in Hong Kong (3 of whom then visited the People's Republic of China). This group was asked to try to answer the question "What in the Chinese experience of rebuilding a health care system might be of value to communities in other cultures and social systems?"

The resulting book was intended to "be of value to health workers both in the developing world and in the industrially developed countries where the failures in health care systems stand out so sharply against the technological and economic advancement."

The topics include: the relationship of health to national development goals, health care organization, epidemic disease control, population policies, traditional and Western medical practices, and human power for health care. At the end, an interesting list of the contents of a barefoot doctor's bag is provided.

A good overview of the Chinese health care system by an impartial group.

A Barefoot Doctor's Manual, MF 27-674, book, 384 pages, translation of a 1970 Chinese manual by the United States Department of Health, Education and Welfare, Public Health Service, Madrona Publications, out of print.

This enormous paperback was translated by the U.S. Dept. of Health, Education and Welfare, from a manual originally published by the Institute of Traditional Chinese Medicine of Hunan Province, People's Republic of China, in September 1970. "It focuses on the improvement of medical and health care facilities in the rural villages. The purpose is to integrate the following areas: prevention and treatment; disease and symptoms, with stress on disease; traditional Chinese and Western medicine, with attention on traditional Chinese medicine; the native and the foreign, with focus on the native; and mass promotion and quality improvement with mass production as the base, and quality treatment as the goal. By following these principles and adapting itself to actual conditions on the rural level, this manual aims to basically meet the working needs of the "barefoot doctors" serving the broad rural population.

The first six chapter headings are: Understanding the Human Body, Hygiene Introduction to Diagnostic Techniques, Therapeutic Techniques (Chinese herbs, folk treatment, Western treatment), Birth Control, and Diagnosis and Treatment of Common Diseases. The seventh chapter is an extensive one (400 pages) on Chinese medicinal plants.

The successful integration of traditional with Western medicine serves as a useful model for many other societies.

Better Child Care, MF 27-676, booklet, 52 pages, 1977, revised 1989 edition available for $0.60 plus postage from Voluntary Health Association of India, Tong Swasthya Bhavan, 40 Institutional Area, Near Qutab Hotel, New Delhi 110 016, India.

Good use of photos and a weatherproof plastic cover make this a model low-cost booklet on proper feeding and ensuring normal growth. Excellent color photos will be of great help in identifying anemia, which in 80% of cases is visually evident.

Nutrition for Developing Countries, MF 27-702, book, 300 pages, by Maurice King and others, 1972, revised 1992 English edition available at the end of 1992 from TALC; Spanish edition $10.00 from Editorial Pax Mexico, Libreria Carlos Cesarman, S.A., Avenida Cuauhtemoc 1434, Mexico 13 DF, Mexico; 40% discount to charitable organizations for the Spanish edition.

"There are many reasons why children are malnourished. One of them is that people do not know enough about nutrition or how to feed children. This is why we have written this book. Some of the people who might read it have not been long in school, so we have tried to write it in easy English with as few new words as possible. We hope that it will be useful to everyone who can do anything to improve nutrition and especially to medical assistants, medical students, nurses, midwives, agricultural assistants, community development and home craft

workers, and also to teachers in schools. All these people can teach other people. This, therefore, is mostly a book to teach what and how to teach."

Chapter headings include: Growth, When Growth Fails, Proteins, Energy Foods, Vitamins and Minerals, Non-Foods and Water, More About Food, The Need for Food and its Cost, Feeding the Family, Artificial Feeding, The Food-Path, Helping Families to Help Themselves, and Helping the Community to Help Itself. The appendix explains how this book can be used in class. There is also a vocabulary index which explains the unusual terms.

The authors say that this is mostly a book for Malawi, Tanzania, Zambia, Botswana, Rhodesia, and Kenya. It certainly has much that would be of interest anywhere. Includes many drawings.

Nutrition Rehabilitation: Its Practical Application, MF 27-703, book, 130 pages, by Joan Koppert, 1977, out of print in 1985.

Nutrition information refers to care and dietary supervision for malnourished children and their mothers. It is an attractive alternative to hospital care for under-nourishment. "In most developing countries, around 1 percent of all children under the age of five years will be suffering from a severe degree of malnutrition at any one time, and in many countries the figure is far higher. In addition, there is a very much larger group of undernourished children. Admitting a tiny minority of the malnourished children to highly expensive hospital wards is almost irrelevant, particularly since studies have shown that a high proportion of such children die either in hospital or in the year subsequent to discharge. A more fundamental and realistic approach to the problem by promoting adequate growth—monitored by a weight chart held by every child—has been developed with the advent of the 'Under-Fives' Clinics. However, even in the few countries where such services are widely available, some children will develop a more severe malnutrition, and it is for these that nutrition rehabilitation centers are desperately needed."

This book is intended to be "an instruction manual with detailed information on the setting up of a center and its day-to-day running, a place where mothers would learn how to prepare balanced meals for their young, especially weaning children, on returning to their homes. Home economy, household budgeting, home gardening, food values, fathers' cooperation and ways and means of improving the family income have been included. Practical advice is given on the siting and construction of a center along with the financial implications .... Methods of administration and follow-up care are described."

Also included are helpful sections on community surveys and record-keeping. A useful, low-cost book summarizing a practical approach to an important problem in rural health care.

Mosquito Control: Some Perspectives for Developing Countries, MF 27-701, report, 63 pages, attached summaries in Spanish and French, National Academy of Sciences, 1973, quote accession number PB 224-749 when ordering from NTIS, paper copies $17.00 domestic, $34.00 foreign; microfiche $8.00 domestic, $16.00 foreign; from NTIS.

"Not a technical handbook, this report aims at arousing interest in some unusual but promising mosquito control methods that might otherwise be ignored. It is written for administrators or program directors of agencies that fund mosquito

control research and application projects and for scientists working on neighboring topics."

The booklet deals exclusively with biological control of mosquitoes, though the need for simultaneous environmental control (e.g., drainage) is stressed. No pesticide approaches are discussed, in part because "... mosquito resistance to chemical pesticides has caused the failure of many vector-control campaigns."

Particularly successful seems to be the minnow Gambusia Affinis, which can destroy large numbers of mosquitoes by feeding on the larvae. This approach is "particularly appropriate for controlling mosquitoes in rice paddies and small water impoundments."

Handbook on the Prevention and Treatment of Schistosomiasis, MF 27-682, book, Geographic Health Studies, FIC, 1977, translation of a Chinese publication, DHEW Publication No. (NIH) 77-1290, out of print, a few copies still available free of charge from FIC Publications Office, Building 16, Room 306, National Institute of Health, Bethesda, Maryland 20892, USA.

This is an English translation of a Chinese handbook, originally published by the Shanghai Municipal Institute for Prevention and Treatment of Schistosomiasis (also known as bilharzia). China is perhaps the only developing country that appears to have been highly successful in controlling schistosomiasis. This book offers some valuable insights into how this can be accomplished.

There are five stages in the life cycle of the schistosome: 1) adult schistosomes, in humans and animals, produce eggs which 2) hatch in water, 3) enter snails and change form, 4) leave the snails, 5) reenter humans and animals, and develop to adult size. If any of these stages can be eliminated, schistosomiasis can be stopped. Most control efforts concentrate on the destruction of the snails.

The snails in irrigation canals and rivers "are mostly distributed in a line on the water level .... Snail elimination can be coordinated with dredging of riverbed soil as fertilizer .... Build a dam and drain the water to lower the water level or utilize the dry season to expose the noninfested area of the base of the bank. Dig a ditch .... The noninfested soil is piled on the side of the ditch near the center of the riverbed .... Pare the soil 3 inches deep. First pare the heavily infested soil near the water level, and dump it into the ditch. Clean up the loose soil, and cover the whole ditch with noninfested soil .... A five-inch layer of soil is used which is then pounded and hardened"

Other chapters in this handbook discuss frequently used chemicals for killing snails (some of them very environmentally hazardous), personal protection, diagnostic procedures, treatment of patients, safe treatment of manure, and schistosomiasis in farm animals.

Better Care in Leprosy, MF 27-675, booklet, 64 pages, 1978, revised 1990 edition available for $0.55 plus postage from Voluntary Health Association of India, Tong Swasthya Bhavan, 40 Institutional Area, Near Qutab Hotel, New Delhi 110 016, India.

A simple booklet with good photos and discussion to help distinguish leprosy from other skin problems that are similar in appearance.

Philippine Medicinal Plants in Common Use: Their Phytochemistry and Pharmacology, MF 27-706, book, by Michael L. Tan, 1980, Alay Kapwa Kilusang Pangkalusugan (AKAP), Philippines, out of print.

Covering the major medicinal plants of the Philippines, this book discusses their cultivation, harvest, storage and medicinal uses. The chemical composition of each plant is provided. Plants are indexed according to Latin names (family, genus, species).

"The present thrust of research into medicinal plants is geared towards the screening of plants for cardiovascular, anti-cancer and anti-fertility drugs. While this type of research has its value, it seems inappropriate in countries where available forms of treatment for widespread diseases such as tuberculosis, malaria, and schistosomiasis continue to be beyond the reach of the majority of the victims. In the Philippines, the situation is even more disturbing, with recent studies revealing that 95% of the materials used to produce 'local' drugs are, in fact, imported."

There are sketches of many of the plants and the text is easy to read. Many of these plants are found or could be grown in other tropical, sub-tropical and mild temperate zones. The book also has a section on weights and measures, a guide to preparation of medicines using the plants mentioned, and a list of sources for further information.

Highly recommended.

Medicinal Plants, booklet, 39 pages, by I. and J. Lecup, 1984, from Lecup, French Embassy, P.O. Box 452, Kathmandu, Nepal; or UNICEF, P.O. Box 1187, Kathmandu.

In northern Nepal, medicinal plants are collected by animal herders and sold in the towns. "They collect in one place everything they can with no regard to the reproduction of the plants for the following years. This uncontrolled gathering is followed by methods of drying unsuited to all kinds of plants. Such methods include direct sunrays, or over-fire hanging. Dried in this way, the medicinal herbs lose the major part of the medicinal value for which they are gathered. After prolonged storage in damp conditions, and following a long commercial circuit to the final destination, plants arrive in very poor quality, in insufficient and irregular quantity."

This booklet describes the growth stages of 6 different categories of plants, and how and when to harvest them to allow for future regrowth. Advice on drying and storage for better quality is also provided. The specific plants mentioned are all local Himalayan species, but the harvesting recommendations based on root and tuber growth etc. can be applied to other plants as well.

Simple Dental Care for Rural Hospitals, MF 27-712, 26 pages, by D. Halestrap, available from Medical Missionary Association, 244 Camden Road, London NW1 9HE, England; also available from TOOL.

This booklet came out of the author's experiences with dental workers in rural Africa. Extraction, sometimes without local anaesthesia, was usually the only treatment provided in cases of severe toothache or advanced gum disease. "Consequently, it was considered that the dental workers in many of these hospitals would benefit from some further instruction in simple dental work, so the author arranged to provide this by revisiting some eighteen of them. Any necessary instruments were supplied where needed and an experimental edition of this

booklet was used during the work in order to provide a background to, and reminder of, what was being taught. It has now been revised in the light of further experience .... Its aim, therefore, is to offer a simple basic textbook for use in rural hospitals in developing countries, it being primarily for the benefit of the paramedical worker whose job it is to treat dental patients." It is not intended to replace training, but to reinforce it.

There are simple explanations of tooth decay, gum disease, and how to keep teeth clean. The treatment shown is removal of tartar, locating and giving injections prior to extraction, and methods of extracting teeth. Complications are briefly discussed. Sketches of a homemade headrest that attaches to a regular chair are included. Simple English text, well-illustrated.

Where There Is No Dentist, MF 27-719, book, 188 pages, by Murray Dickson, 1983, $6.50 (plus $1.00 overseas shipping) from the Hesperian Foundation, P.O. Box 1692, Palo Alto, California 94302, USA; also available from ITDG and TOOL.

This book fills a gap in the literature on dental care, between materials that are too simple and those that are too complicated for use by village health workers. As was the case with **Where There Is No Doctor**, the author begins from the fact that most people in developing countries have no access to dentists, and the dental treatment they receive, if any, is provided by people with few skills. This volume attempts to remedy the situation, emphasizing preventative dental education, especially among children, and providing the details necessary to carry out simple curative work when needed.

The Tooth Trip, MF 27-713, book, 232 pages, by Thomas McGuire (D.D.S.), 1972, Random House, Inc., out of print.

Delightful and well-illustrated, this very readable book "tells how you can completely prevent cavities and gum disease through self-examinations and home care." It explains tooth decay and gum and mouth diseases, and provides enough information for the reader to determine the likely nature of any mouth problem he or she may have. The author explains the procedures and associated equipment so that the patient can understand what's happening and participate in decision-making about what treatment he or she will get for a particular dental problem.

Highly recommended for Americans. The illustrated simple explanations of preventive dental care will be of interest to health and dental programs in developing countries.

Disabled Village Children: A Guide for Community Health Workers, Rehabilitation Workers, and Families, MF 27-730, book, 654 pages, by David Werner, 1987, $16.00 postpaid to highly-developed countries, $7.00 to less-developed countries, from Hesperian Foundation, P.O. Box 1692, Palo Alto, California 94302, USA.

In this remarkable book, David Werner and colleagues around the world have focused on the needs of disabled children, especially those in rural areas of poor countries where resources are severely limited. It covers the "most common disabilities of children: ... physical disabilities, blindness, deafness, fits, behavior problems, and developmental delay. It gives suggestions for simplified rehabilitation, low-cost aids, and ways to help disabled children find a role and be accepted in the community. Above all, the book helps us to realize that most of the

answers for meeting these children's needs can be found within the community, the family, and in the children themselves. It discusses ways of starting small community rehabilitation centers and workshops run by disabled persons or the families of disabled children." Four thousand line drawings and two hundred photos.

Alternative Limbmaking: The Manufacture and Fitting of Low-Cost Below Knee Prostheses, MF 27-722, book, 177 pages, by Bob Pluyter et. al., 1989, AHRTAG, £4.00 plus £2.00 postage from TALC.

This begins with an examination of the stump on which a prosthesis is to be fitted, covering the important considerations in where pressure can be supported and where it cannot. The production of a stump cast, to allow a good fit, is covered next. The prosthesis itself is made of wood, rubber, aluminum, leather, and other materials. Very well-illustrated.

This is one of those technologies in which the developed-country alternative is extraordinarily expensive, whereas the use of craft traditions can mean low-cost, custom-fit, and local materials.

Some of the language is difficult, and not all of the steps are clear from the illustrations, but the careful reader will find this an illuminating and very helpful reference.

More With Less: Aids for Disabled People for Daily Living, MF 27723, book, text in English and Spanish, 90 pages, by Gerry van der Hulst et. al., 1990, Dfl. 11.50 from TOOL; or £3.95 from ITDG.

This is a collection of simple devices and easy-to-make aids which can make life easier for disabled children and adults. All of the items shown are used in the Netherlands, but they could be made in any developing country at low cost. There is a large drawing of each item in use, with a description in both English and Spanish. Clever articles of clothing, gardening tools, and devices to help with eating, walking, getting dressed, and reading are among the topics covered.

Independence Through Mobility: A Guide to the Manufacture of the ATI-Hotchkiss Wheelchair, MF 27-729, book, 154 pages, by Ralf Hotchkiss, 1985 $15.00 from Appropriate Technology International, 1331 H Street N.W., Washington, DC 20005, USA.

The ATI-Hotchkiss wheelchair is a high-performance, rough terrain, low-cost wheelchair designed for production and use in the difficult conditions of developing countries. The design represents the evolution of years of design work with input from wheelchair builders in over 20 countries.

"Third World wheelchair riders need wheelchairs that can fold to fit in crowded living quarters or in the aisle of a bus .... These wheelchairs should have good traction, stability, and should be light and agile enough for the rider to travel over rough ground ... strong enough to withstand rough handling (as they are tossed on and off the roof of a bus). When parts do fail, they must have been designed to be repaired locally. Last but not least, these wheelchairs must be affordable."

This well-illustrated production manual is intended to help the reader start a small business building wheelchairs. It provides information on costs and

equipment necessary along with the technical information needed to build these wheelchairs.

Personal Transport for Disabled People: Design and Manufacture, MF 27-724, book, 91 pages, by Michael Wyre of I.T. Transport, 1984, AHRTAG, £2.50 plus £2.00 postage from TALC; or £2.50 from ITDG.

A collection of simple designs for wheelchairs and carts, with attention to frames and wheel construction. This is at the very simple end of the continuum of such equipment. The Hotchkiss wheelchair designs are much more sophisticated and durable than these, representing a more intermediate technology between these designs and the very expensive industrial-country wheelchair.

Low Cost Physiotherapy Aids, MF 27-718, booklet, 45 pages, by Don Caston, 1982, Appropriate Health Resources and Technologies Action Group (AHRTAG) out of print.

Physiotherapy involves rehabilitation of injuries through exercise and stretching. Needed are devices that can be pulled, pushed, lifted and twisted by the patient. These devices can be quite expensive to buy.

Here are self explanatory drawings of a variety of simple aids that can be made of common, locally available materials: bamboo or wood, string, cloth, and old bicycle inner tubes. A small workshop at a clinic could make these devices for patients, or they could be made by relatives by looking at the drawings. Few tools are needed.

Rattan and Bamboo: Equipment for Physically Handicapped Children, MF 27-708, booklet with 13 large sheets of drawings, by J.K. Hutt, 1979, Disabilities Studies Unit, United Kingdom, out of print.

Detailed designs of a variety of chairs and walking supports made of rattan and bamboo. The ready availability of the materials, good strength and durability in the tropics, and ease of repair make these designs attractive. All drawings use English measurements. There is no text to explain the particular use of each piece of equipment.

How to Make Basic Hospital Equipment, MF 27-690, book, 86 pages, compiled by Roger England, ITDG, 1979, out of print.

This booklet contains construction drawings for 22 different pieces of hospital equipment that can be produced in a small workshop. All dimensions and assembly instructions are given.

The larger equipment includes an invalid carriage with chain drive, an instrument trolley, a hospital wheelchair (not self-operated), a rough terrain wheelchair, a bicycle ambulance (essentially a wheelchair with a bicycle-pulled towbar), a blood transfusion drip stand and a patient's trolley. In addition, there are such things as folding beds, a bamboo walking frame, and other furniture. Of particular interest are a neonatal suction pump, a premature baby incubator that uses standard electric light bulbs for heat, calipers, an exercising machine, a low pressure air bed, and thermoplastic aids made of plastic drainpipe.

All of the designs were developed in hospital workshops and the Zaria

Intermediate Technology Workshop (Nigeria). The drawings have been reproduced with the hope that they will "provide ideas and stimulation to those interested in intermediate techniques."

A Medical Laboratory for Developing Countries, MF 27-694, book, 500 pages, edited by Maurice King, 1967, reprinted 1976, out of print; Spanish edition may still be available from Editorial Pax Mexico, Libreria Carlos Cesarman, S.A., Avenida Cuauhtemoc 1434, Mexico 13 D.F., Mexico, at a 40% discount to charitable organizations.

"This book aims to bring the minimum level of laboratory services within the range of everyone in developing countries and is written especially for laboratory and medical assistants who work in health centres and district hospitals. Each piece of equipment needed in a medical laboratory is fully described and illustrated. (These drawings are not intended to be used for local production of the equipment.) Every step in the examination of specimens is simply explained and the method of performing it is illustrated; the methods chosen are those that give the greatest diagnostic value at the minimum cost. Ways of obtaining specimens are given, and where it might prove helpful, some anatomy, physiology and a brief account of treatment is included. The last chapter contains a detailed equipment list (total cost about $500 in 1973)."

Users should have some basic laboratory science training, and a good knowledge of English. King attempts to present the material in "easy English," but this does not mean that beginning English speakers will be able to use this manual. Good drawings help to overcome some language problems.

King covers the following major topics: basic relevant chemistry, sterile technique, descriptions of equipment and chemicals, records and specimens, weighing and measuring, the microscope, blood, urine, cerebrospinal fluid, stools, blood transfusion, and other specimens. There are more than 100 clear color plates of commonly seen slide specimens (in the hardback edition).

This manual is focused on what are certainly "intermediate" technology and techniques for medical laboratories. Medical technology, in the rich countries is rapidly becoming so capital-intensive that progressively fewer people can afford good quality care. Medical personnel are at the same time becoming increasingly dependent on expensive machines and tests to carry out their duties. Compared to this, King's book is a down-to-earth catalog of relatively inexpensive equipment for basic laboratory tests. However, virtually all of the equipment King mentions would have to be imported (at a cost which in 1973 amounted to $500 per health center).

Manual of Basic Techniques for a Health Laboratory, MF 27-693, large paperback book, 487 pages, 1980, stock no. 1150120, Swiss Francs 30.00 or US $24.00 (30% discount to developing countries) from WHO; also available in French.

"(This) manual is intended for use mainly in medical laboratories in developing countries. It is designed particularly for use in ... small or medium-sized laboratories attached to regional hospitals and in dispensaries and rural health centres where the laboratory technician often has to work alone .... The manual describes only direct examination procedures that can be carried out with a microscope or other simple apparatus. For example: the examination of stools for parasites; the examination of blood for malaria parasites; the examination of sputum for tubercle bacilli; the examination of urine for bile pigments; the

leukocyte type number fraction; the dispatch of stools to specialized laboratories for the detection of cholera vibrios."

This is the second, expanded edition of a book prepared both as a teaching manual and as a reference for health center laboratory technicians. Techniques are explained with text and line drawings in step-by-step fashion, from collecting specimens to recording results. Many photographs and drawings show what parasites and bacteria look like under the microscope. Also included: lists of all reagents (lab chemicals) used, and how to make or obtain them; and a list of all the apparatus needed to equip a laboratory which could carry out all the examinations in the book. An introductory chapter on "general laboratory procedures" gives detailed instructions on using and cleaning a microscope; sterilizing water and glassware; storage and preparation of materials and specimens; and simple plumbing and electrical repairs in a laboratory.

Medical Laboratory Manual for Tropical Countries, book, by Monica Cheesbrough, Volume I,1990 (revised second edition), £7.95 postpaid to developing countries, £17.50 postpaid to others; Volume II, 1990, £6.95 postpaid to developing countries, £14.50 postpaid to others; from Tropical Health Technology, 14 Bevills Close, Doddington March, Cambridgeshire PE15 OTT, England.

Cheesbrough discusses laboratory techniques for regional hospitals and essential tests for community health centers. She includes sections on lab organization, anatomy and physiology, diagnosis of parasitic infections (with wall charts of important parasites), and clinical chemistry.

Establishing a Refugee Camp Laboratory, MF 27-725, book, 40 pages, by Warren Johns, ANZIMLT, 1987, available from Save the Children, 17 Grove Lane, London SE5 8RD, United Kingdom.

A short, quick look at what needs to be done, and done quickly, in setting up a refugee camp laboratory under difficult circumstances.

This book provides the voice of experience, concentrating on what can and should be done with minimal resources and pressing needs. The author recommends books to be brought in to the laboratory setting, and lists laboratory equipment suppliers.

He also provides a detailed list of supplies and small equipment necessary to set up a refugee camp laboratory.

A Model Health Centre, MF 27-700, book, 167 pages, Conference of Missionary Societies in Great Britain and Ireland, 1975, British Council of Churches, out of print.

"A design primer and reference book for those engaged in planning, developing, and operating health services whether at a national or local level." This manual offers some practical ideas on the architectural layout of a model health center, building dimensions, and cost of materials, with many detailed sketches and diagrams. It also discusses clinic schedules, record-keeping, number and type of staff, operational policies, programs in immunization, nutrition and maternal-child health, under-fives clinics, oral hygiene, school visits, latrine construction, and community involvement and support.

"Not only are the staff to go out into the community, but also the community

is to have facilities within the centre; these facilities being the main new idea generated by this study." The need for medical auxiliaries is also identified, recognizing that they can do an "immensely valuable job extremely well" in promoting community-based preventive medicine. The center ideally would have a staff of eight: two nurses, midwives, or medical assistants working with 4 auxiliaries (with 1-2 years in-service training) and 2 local assistants. The center is expected to be able to refer patients to doctors in a district hospital when necessary, and to receive visits from doctors on a regular basis. The bibliography includes books recommended for the health center library.

Design for Medical Buildings, book, 146 pages, by Philip Mein and Thomas Jorgenson, 1975, reprinted 1980, $6.00 plus $2.50 surface mail plus $2.00 foreign bank charges, from The Director, Housing Research and Development Unit, University of Nairobi, P.O. Box 30197, Nairobi, Kenya.

"The manual contains design, construction and cost guidelines for the building of medical facilities with limited resources. It has been prepared primarily for the doctor and his staff who, in rural Africa, must often be their own architects. It should however also be of value to the architect who, perhaps for the first time, is confronted with the special problems associated with the provision of medical buildings in rural areas.

"Medical buildings at present tend to be excessively expensive, consuming funds which are sorely needed in other areas such as the primary health sector. The guiding principle of this book is that the expenditure of material, monetary and manpower resources (on buildings) should be reduced to the lowest level consistent with adequate and acceptable medical care."

The book covers everything from initial feasibility studies to supervision of the construction work. "Each building problem requires its own solution according to local needs." Design examples are given, but the emphasis is on "providing the tools and methodology for design in the form of standards and guidelines."

"The best guide to an appropriate type of construction is to study other buildings in the area, for example, their shape, whether they have flat or pitched roofs, and the materials from which they are made. It is generally true that the further one deviates from the local architecture, the more money and time will be used in building."

Anaesthesia at the District Hospital, MF 27-720, book, 143 pages, by Michael B. Dobson, 1988, 20 Swiss francs or US $18.00 (order no. 1150289) from WHO.

"The needs of a small hospital are best served by the regular use of relatively few anaesthetic techniques that can provide good anaesthesia for virtually any clinical situation. This book is intended to be a manual of such techniques."

"Prepared for the guidance of medical officers (not specialists) in small hospitals, who find themselves responsible for providing anaesthesia for both elective and emergency surgery, to help them provide safe and effective anaesthesia for their patients. The techniques described have been chosen to be suitable for use in hospitals that are subject to constraints on personnel, equipment, and drugs and where doctors have limited access to specialist services. Indeed, the content of the book reflects the fact that good anaesthesia depends much more on skills, training, and standards than on the availability of expensive and complicated equipment."

First there is "a description of the fundamental principles and techniques

underlying the practice of anaesthesia. This section includes the immediate and continuing care of critically ill, unconscious, or anaesthetized patients and the principles of fluid and electrolyte therapy. Both general and conduction anaesthesia are then described in detail. The reader is taken from the state of assessing the patient before anaesthesia through postoperative care, via chapters focusing on the methods, equipment, and drugs used for different types of anaesthesia. Special consideration is given to pediatric and obstetric anaesthesia and to medical conditions of importance to the anaesthetist. Numerous illustrations accompany and complement the text throughout."

General Surgery at the District Hospital, MF 27-721, book, 231 pages, edited by John Cook, Balu Sankaran, and Ambrose E.O. Wasunna, 1988, 30 Swiss francs or US $27.00 (order no. 1150300) from WHO.

"This handbook describes general surgical procedures suitable for use in small hospitals that are subject to constraints on personnel, equipment, and drugs and where doctors have limited access to specialist services. It has been prepared for the medical officer who does not necessarily have a formal surgical training, but nevertheless has experience, gained under supervision of all the relevant techniques.

"After an overview of basic principles, the book describes, with numerous detailed illustrations, surgical procedures for the face and neck, chest, abdomen, gastrointestinal tract, and urogenital system; pediatric surgery is covered in a special section. Most of the operations included are for saving life, alleviating pain, preventing the development of serious complications, or stabilizing a patient's condition pending referral. Simple but standard surgical techniques have been selected wherever possible, and procedures that require specialist skills or that could add unnecessarily to the doctor's workload have been avoided. Essential surgical instruments, equipment, and materials for the district hospital are listed in the annexes."

"This book is not intended for specialist surgeons or for non-physicians; it has been prepared ... to serve the needs of small hospitals with limited resources."

How to Look After a Refrigerator, MF 27-717, book, 58 pages, by Jonathan Elford, 1980, AHRTAG, £5.00 plus £2.00 postage from TALC.

"Vaccines need to stay cool all the time. If they are allowed to get hot, they become useless. Refrigerators keep vaccines cold and safe. Therefore, they play a very important role in protecting children against infectious diseases. But refrigerators break down easily, so they must be carefully looked after to keep them working properly."

This volume includes information on simple maintenance and operation of kerosene absorption refrigerators (cleaning burners, trimming and adjusting the wick, cleaning the flue, etc.), and the regulation of gas and electric refrigerators. The author also discusses where to place different vaccines within the refrigerator, and how to pack cold boxes and vaccine carriers to protect vaccines as they are transported. An emergency action chart indicates how to identify and correct the problem if the refrigerator is too warm.

Dermatological Preparations for the Tropics, MF 27-726, book, 221 pages, by Peter Bakker et. al., 1991, Dfl. 30.00 from TOOL.

This book contains formulas and directions for the local, small-scale production of a wide range of medicines for the treatment of common skin diseases.

"In the Third World, skin diseases form one of the main reasons for seeking medical advice. Nevertheless, little attention has been paid to the provision of adequate dermatological drugs for use in the tropical South. At best, some preparations developed for use in temperate climates are available. For use under tropical conditions, dermatologicals should meet more stringent requirements, such as being stable at higher temperatures ...."

Advice is provided on basic methods of small-scale production and good manufacturing practice.

For each drug, directions are provided for preparation, packaging, storage, dose and instructions for use, precautions, side effects, and symptoms and remedies in case of intoxication. Background information is provided on ointments, pastes, creams and lotions, and the stability of these drugs.

The Provision of Spectacles at Low Cost, MF 27-727, booklet, 28 pages, by WHO, 1987, $4.80 from WHO.

Here is a quick look at the technical requirements and costs of setting up small scale production units to produce eyeglasses.

"It is possible to produce lenses from inexpensive, 'non-optical' glass, but it is better to import high quality lens blanks made from ophthalmic glass. These can be ground and polished on both surfaces using machines that can either be imported or made from locally available components. Polishing compound will also be required. A small workshop, employing two or three workers, can produce 2000-3000 pairs per year, with a capital investment of US $2000-$2500 ...."

"The assembly of spectacles includes the process of cutting the ground and polished lenses (edging) to fit into the finished frames. This requires very limited resources and facilities. With the aid of two electric edging machines and some hand tools, one person can assemble over 3000 pairs of finished spectacles per year. The capital investment is between US $600 and US $900, and will allow the cost of finished spectacles to be kept within the range of US $2.50-3.50. The skills required for production, assembly and fitting can be acquired with 2-3 months of training. No special prior education is needed for such training."

Health Records Systems, MF 27-687, booklet, 20 pages, by C. Frost and G. Ellmers, VITA, out of print in 1985.

"The development of this manual grew out of a need for an easy and concise health record system that required little or no experience with filing methods .... Because there are so many variables present in each medical application, this manual is not designed as a definitive answer to problems. Instead, it is hoped that the suggested methods can be adopted or modified to meet any situation."

The booklet stresses the need for simplicity and uniformity in a health records system—for easy implementation and local use by workers with minimal training. Several record systems are explained, and sample charts and cards are included for each one

ADDITIONAL REFERENCES ON HEALTH CARE

An Agromedical Approach to Pesticide Management; see AGRICULTURE.