

Letters

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Knowledge can flow from developing to developed countries

EDITOR—I am pleased that this issue of the *BMJ* explores the many aspects of research in developing countries. The first thing that comes to mind on this issue is how developed countries can teach developing countries, but few people realise that the flow of knowledge can sometimes be reversed. Developed countries can learn and benefit from research in developing countries, particularly from research on infectious diseases and alternative treatments.

More international travel has led to a resurgence of infectious diseases and to a rapid spread to developed countries of diseases that used to be exclusive to the developing world. The emergence of HIV infection has warned us about the global threat of new infections, which are more likely to start in developing countries.¹ Research and surveillance on infectious diseases are most effectively done in areas where the diseases are common. Early communication and attention to this epidemiological information from developing countries can prevent potential global disasters.

The different needs and healthcare settings in developing countries often stimulate new treatment methods, some of which

can be more cost effective than established practices in developed countries. Directly observed therapy, short term (DOTS) for tuberculosis was shown to be effective in Africa and Asia in the early 1950s and has been the standard method of treatment in Hong Kong since then. It was only in 1993 that the US Centers for Disease Control recommended it be considered for all patients with tuberculosis.² Earlier adoption of this research evidence might have prevented some of the deaths and multiple drug resistance associated with tuberculosis in many developed countries in recent years.

Traditional medical practices in developing countries can be a treasure box of alternative or complementary treatments for people in developed countries. Research on the effectiveness of acupuncture has made it a standard treatment in many developed countries. Qing hao su, a Chinese herbal medicine, has been proved to be an effective and safe treatment for malaria.³ Trials of many Chinese herbal medicines for the treatment of HIV infection and cancer are currently under way.

The lack of advanced technology and sophisticated equipment may limit the quality and scope of some research in developing countries, but a lot of knowledge can be acquired through careful observations and innovative ideas, which do not need a lot of money. Mutual exchange is a more satisfying process than one-way transfer of knowledge and resources. Developed countries will get more in return for their investments in research in developing countries if they are more receptive to findings from these countries.

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Let's consider ethics of medical practice first

EDITOR—During the past year I have attended three meetings on the ethics of research sponsored by the World Health Organization, the Harvard School of Public

Health, and the Indian Council of Medical Research. They were all ignored by the media, although the Indian media report daily on the poor state of the health service and unethical medical practices. The recent alleged maltreatment of a central government minister who died in a private hospital in Delhi has caused particular public concern.¹

That medical research in developing countries is meagre and of generally poor quality is well known,² and it has not improved in the past 20 years. Should one therefore discuss research ethics in developing countries when they barely exist?

In my view the ethics of medical practice is more important. To see how the public can be safeguarded from an inefficient and often corrupt medical system and receive comprehensive health care of a reasonable quality is paramount. Ordinary people have to choose between an underfunded and inefficient public sector with its long queues, dirty hospitals, and rude staff (not infrequently on strike for more pay) and the expensive private sector, perceived as being run by avaricious doctors fleecing patients through overinvestigation and overtreatment. Many patients, understandably, turn to the more accessible and cheaper practitioners of alternative systems of medicine or even to quacks, who regularly prescribe a cocktail of antibiotics, antimalarials, antipyretics, and steroids for fever. Despite this, 80% of the Indian gross domestic product spent on health care goes to the private sector.³

The medical councils, the main regulatory bodies, are generally ineffective, claiming that they do not have the necessary powers. Only one doctor (a well known actor who used his medical status in an advertisement) has been struck off since their inception. Even the Consumer Protection Act, which includes medical practitioners in its ambit, has not successfully curbed unethical medical practices because of the huge delays in its legal process.

In January 2000 the Ministry of Health recognised the growing concern about the absence of standards to measure the quality of health services and that the medical community in India is not accountable in any manner. It proposed setting up a system of monitoring hospitals and doctors in both the public and private sectors. Perhaps the sad and unfortunate death of a young minister will now result in some belated action.

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Letters will be edited and may be shortened.

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Information gaps have the same causes as wealth gaps

EDITOR—If I substituted the words “financial wealth” for “information flow” in the editorial by Godlee et al on global information flow in this issue,¹ I could imagine myself reading an upbeat briefing on the virtues of trickle down economics from the 1970s. Information gaps have the same causes as wealth gaps. They are a consequence of a powerful elite parading their culture and ideas as if these were universal. When there is the remotest opposition, the powerful will do everything to overcome it.

The notion that thoughtful articulation of alternative views about health and society might, through the information revolution, modify the behaviour of the powerful in a way which will improve the health of the poor is fanciful and misguided. The information gap can be closed only when we are closer to securing the economic, social, and environmental justice within which all societies can flourish and express themselves as equal partners. The question, therefore, is, can we expect the flow of information to move us closer to this desired state?

I fear the answer is no, and we are in danger of falling into an information revolution abyss. Haven't we got enough problems with the International Monetary Fund and the World Bank?

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- 1 Godlee F, Horton R, Smith R. Global information flow. *BMJ* 2000;321:776-7. (30 September).

Improving access to reliable information in developing countries

EDITOR—Imagine you're a medical student in one of the least developed countries in sub-Saharan Africa. You're studying for your final exams. But you can't afford to buy books, let alone a computer. Your friends are in the same position. And so is the library. It hasn't had any money to purchase new books or journals for five years. You used to dream of bringing better health to your rural homeland, providing frontline health care in the public sector. Now your ambition is to get into private practice in a desirable part of the city as soon as you can, offering specialist services to those who can afford to pay. It's the only way you'll get a decent standard of living. An older colleague recently told you: “If you work in the rural areas, you'll be isolated—professionally as well as physically. You want continued medical education? You're more likely to get con-

tinued medical ignorance, a disease with a particularly high prevalence in the rural health professional, characterised by loss of morale, lack of enthusiasm, and poor performance, and caused largely by chronic deficiency of information.”¹

International agencies, non-governmental organizations, publishers, libraries, training schools, and others—all are seeking to improve access to information for healthcare workers. Collectively they bring a wealth of skills, but their overall effectiveness has been limited by, ironically, lack of communication. Players have often been unaware of one another's activities, even when such activities have been similar.

The INASP (International Network for the Availability of Scientific Publications)-Health programme was launched after an international meeting in 1996 to promote cooperation, analysis, and advocacy in this sector.^{2,3} The programme runs a series of themed meetings—the Health Information Forum—at the BMA in London. These meetings are intended to promote sharing of experience and lessons learnt and are open to anyone interested. Thanks to support from the BMA, they are free of charge.

In cooperation with the World Health Organization, INASP-Health has just launched an email discussion list, which has already attracted more than 250 people, including many from Africa, Asia, Latin America, and the newly independent states. To find out more send an email to INASP_Health@compuserve.com with a brief description of your professional interests or visit our website (www.inasp.org.uk).

With cooperation, appropriate use of technology, and financial and political commitment, access to relevant, reliable information for healthcare workers can be improved in developing and transitional countries. Lack of access to basic information should not be allowed to continue to harm the professional development of healthcare workers and, moreover, the health of their patients.

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Don't forget traditional medical care

EDITOR—As midwives and reproductive health educators in Mexico we work with two systems of health care: western biomedicine and indigenous traditional medicine. These systems have different concepts and practice and run in parallel, sometimes together and sometimes in opposition. For



Traditional healing in Mexico

example, families living in poor rural and peripheral urban areas may be told that the best of all solutions is to be found in hospitals with skilled medical staff. They have to travel long distances, at great difficulty and considerable cost, to be offered a solution that differs from their long standing practices and health concepts.

Ambivalence about traditional systems of medicine is growing among many of the young indigenous population because new or modern knowledge carries most prestige and is considered most valid. Thus the importance of indigenous practices and remedies (herbal medicine, ointments and massages, hydrotherapies) is fading, although such practices are often the only medicine accessible to people in distant and poor regions. Since Western biomedical knowledge is on paper only it has proved extremely difficult to implement locally. Thus village communities are increasingly being left with very little or no health care at all. One example is the lack of attendance and follow up of women after childbirth. They are delivered in hospitals, very often operatively, and after discharge find it difficult to return for postpartum check ups; community midwives do not look after them because they have not been involved in their care.

We have found from our work with women in impoverished localities and by talking with traditional midwives and healers from India, Uganda, Bolivia, and Mexico that similar approaches and techniques have been used consistently for generations to overcome risks by making use of local resources. These include the use of hot and cold; manoeuvres; time rhythms (natural cycles); herbs, minerals, and animal substances; and extended social support networks. To understand the logic behind these approaches we need to reconsider the benefits of strategies that have evolved according to local needs. More open and inclusive programmes are urgently needed with the aim of reaching a consensus among researchers, policymakers, managers, teachers, health practitioners, and consumers.

We look forward to the development of research policies that encompass the different body concepts in existing worldwide cultures. Public health officials will then have the complex task of drawing up recommen-

dations on what functions best for everyone. Such policies might also help to improve the support of people who are poor in the developed world or are living in the developing world.

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Asking “how?” rather than “what, why, where, and who?”

EDITOR—Over the past two decades experienced health policymakers and practitioners have noted a widening gap between scientific knowledge and policies on the one hand and their implementation on the other.¹ For example, despite the availability of powerful drugs and the existence of comprehensive programme policies many developing countries are still struggling to maintain acceptable cure rates for tuberculosis.² This implementation gap has been aggravated by health sector reform and fiscal stringency, which have placed greater demands for performance on local health systems and practitioners.

Health systems research often focuses on operational aspects of health systems development. It commonly uses a combination of quantitative and qualitative methods and sometimes entails practitioners participating in reflective action research. Health systems research therefore has powerful potential to bridge the implementation gap through testing and evaluating activities and systems while simultaneously enhancing the capacity of health staff to evaluate and improve their performance. In other words, instead of focusing on the traditional “what, why, where, and who?” it focuses on “how?”

Well conducted health systems research has improved the quality and provision of health programmes even where resources are constrained.^{2,3} For example, paediatric ward sisters in hospitals in the impoverished former homeland areas of the Eastern Cape in South Africa used record reviews, interviews, and structured observations to identify several deficiencies in their management of severe malnutrition. Their changes led to case fatality rates almost halving.⁴

The relevance and importance of health systems research is unfortunately not reflected in resource allocation by funding bodies or in the curriculum of many public health courses. We have found that the flexible use of methods and an emphasis on timely and appropriate information rather than increased precision give health practitioners and researchers the confidence to use research to address health problems in a meaningful way.⁵

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Let's start helping our neighbour

EDITOR—I grew up by the sea in a Spanish island then studied at university in a big city; in both these places I had seen inequities, particularly in health care. I came to the United Kingdom for my postgraduate training and practised in different hospitals for nearly nine years. I saw a great health service, the envy of other countries, mine among them. Health care was available to all in a human effort to achieve equity—again that word which we are quick to forget in a society that has everything at hand, where the social privileges that the nation provides are quickly forgotten because we compare ourselves with the perfect circumstances promoted by the media, and we always fall short of the mark. Our attempt to achieve equal rights for all has gone so far that minorities, whatever they defend, become advocates of a society where values are simply personal desires, above the necessity of caring for others.

From that idyllic scenario of occidental wealth, blind to inequities, I moved to Bolivia, South America, where the poverty trap and corruption are the main problems separating the rich from the poor. The wealthy enjoy that idyllic Western status with no shame or mercy. The poor, fully aware of the achievable goals that success is supposed to bring, are impotent in their condition to change their fate and unable to pay for health care in a country that cannot provide it free of charge (often cannot provide it at all because life in undeveloped countries has different priorities).

Whether in a developing, developed, or undeveloped country, two principles are a constant challenge: justice and mercy. Human justice has always been a personal value; without a coherent and uniform justice there will be no chance for equity, a utopia we should abandon as soon as possible. For the same reason we cannot have one single human moral. Therefore, without a unique code of what is right and what is wrong it is impossible to terminate inequity, because caring for others implies recognising wrongs and unfair situations, an alien concept until we all acknowledge the idea of a supreme moral justice.

In other words, let's stop having these grandiose and expensive global meetings trying to find a solution for the world when we know there is no human effort that will

ever achieve that. Instead, let's start helping our neighbour.

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Research on a shoestring in Colombia

EDITOR—Medical research in Colombia is a joint effort between two sectors: education and health. These two sectors, however, have low budgets that continue to be reduced, which is reflected in the number of research projects. In Colombia most medical research is carried out within the universities, but, although 70% of university education is privately run, most of the research is government funded. Thus closures of public universities and hospitals and cut backs in their budgets have an impact on medical research. An example of this is the reduction in expenditure on education, from 42% in 1980 to 30% in 1998, which means that the state agency in charge of financing research is paralysed because it has no budget. In 1999 the Universidad Nacional de Colombia, which is government run and has the largest number of students in the country, financed 141 research projects, with an overall investment of 1 033 000 000 Colombian pesos (\$516 500). The faculty of basic sciences had the most support with 56 projects financed, followed by the faculty of medicine with 20; the faculty of economics had only two projects financed.

The quality of research in Colombia varies from good to mediocre and bad. Although some of it is internationally recognised, most has limited appeal. The predominant projects are epidemiological studies and clinical trials, with a few studies in basic sciences. Most are bibliographic reviews rather than experimental studies. There are fewer than 10 annual prizes. The available information about international agencies that support research is scanty. A good indicator of the research carried out is the difficulty national medical journals have in finding material to publish in each issue. There are not enough research projects, and the journals also face economic constraints that threaten their continuity because many rely on the support of the pharmaceutical industry, which is also in economic crisis.

Notwithstanding this, some medical research projects of good quality are considered but never carried out because of lack of funding. The faculties of medicine are trying to keep the groups that carry out research and recruit students into them with mixed results. And although academics manage to keep abreast of scientific information, daily tasks fill their time, leaving research as a task undertaken by the few.

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Community participation is essential in clinical trials

EDITOR—Health research should be treated as a public good, but currently the positive impact of clinical trials in developing countries is limited. The research agenda is usually set without consulting the communities concerned, and disadvantaged people may not have fair access to treatment in trials.

Trials of more relevance to the community may be undertaken in a way that maximises adherence to trial protocols by taking into account the cultural, language, literacy, and socioeconomic barriers that have an impact on people's behaviour and ability to participate. Involving consumers and community leaders in research planning is one way of addressing these concerns. Furthermore, the knowledge gained will be better fed back through the community.

Ethics in clinical research may be affected by cross cultural variations. For example, in AIDS trials in South Africa myths and beliefs about the disease hamper progress and treatment is unavailable to most patients. An AIDS consumer advocate has said, "To researchers the trials are often seen as experiments and we are research subjects, whereas to people like myself the trials are something far more important: they are seen as treatment rather than research."¹

The burdens of taking part in trials, such as the cost of transport, are not always covered. For example, an HIV drug trial is currently being run in an upmarket suburb of Cape Town, which makes it less accessible for people from disadvantaged communities, the very people who would benefit from taking part. Disease in Africa predominantly affects those living in poverty. Developing countries largely focus their healthcare provision on primary healthcare services, so trials need to be conducted in these settings rather than in the tertiary medical institutions where most trials are based.

Another major problem is the lack of commitment by drug companies to continue to provide all participants who would benefit with free drugs after the trial has ended. This is most important in the treatment of AIDS. Some researchers are worried about how trial treatments may affect the virus in an individual or whether they will lead to drug resistance, which could limit the ability to benefit from any drugs that may become available.

Thus a trial may leave participants and the community worse off than they were before. Stronger community scrutiny and negotiation with researchers and drug companies in developing countries is therefore essential, as is the role of governments in ensuring the ongoing provision of treatment.

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We thank the six women who shared their experience of being on a drug trial, as well as Hilda Bastian from the Cochrane Collaboration, for their help.

¹ Busse P. Strident but essential: the voices of people with AIDS. *BMJ* 1997;314:888.

Disaster relief and development could be twinned in health research

EDITOR—Whenever decisions must be made about the allocation of resources to deal with health issues, research plays a key part. This theme issue testifies that developing countries are not short of health issues.

We have recognised the need for advanced research in our master of science (MSc) course on disaster relief nursing. Both natural and manmade disasters have the greatest effect where the municipal infrastructure is already weak—in developing countries. So, for the purposes of health research, disaster relief and development could be twinned. Healthcare professionals must act at all stages of a disaster.¹ Decision making must be rapid and informed by a brief needs assessment. Nurses take a keen interest in holistic care and user participation. In a disaster this ethos is even more important as initiatives for health and wellbeing must be sustained long after the rescue workers have gone.

Our course makes extensive use of the internet—the latest tool for learning at a distance. In a disaster zone distance may separate the student not only from the tutor but also from the context of care. This suggests that distance learning may also facilitate health research in developing countries as some of the same issues—for example, remoteness from normal resources—may arise. As in other areas of work, both quantitative and qualitative research methods have a place, and the two approaches often inform each other. Qualitative methods such as participatory action research play a part in the context of developing countries as they provide deeper understanding, lead to emancipation, and include the potential to change things for the better.²

Observational study is also particularly relevant in overcoming the language barrier to health research in the absence of a translation service. Advanced study and research in a disaster zone is not for everyone, so initiatives need to adopt a multicentre approach to gain a critical mass of students and researchers. The MSc in disaster relief nursing, supported by colleges and universities in five countries in the European Union, is working towards this aim.

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¹ World Health Organization Regional Office for Europe. *Development of a disaster preparedness tool kit for nursing and midwifery*. Copenhagen: WHO Regional Office, 1999. (EUR/ICP/DLVR 02 04 02.)

² Wuest J, Merritt-Gray M. Participatory action research. In: Morse JM, ed. *Completing a qualitative project*. Thousand Oaks: Sage, 1997:283-309.

Effect of drug patents in developing countries

EDITOR—Do drug patents kill? If they do the risk is felt overwhelmingly by the poor. AIDS will soon become the leading cause of death worldwide, and 95% of people infected with HIV worldwide live in the world's poorest countries. Effective treatments are mostly patent protected, with the result that the annual cost to treat a single patient with AIDS is up to 100 times the average gross domestic product per capita in developing countries.¹

These staggering facts have led to a campaign to increase access to essential AIDS medicines in poorer countries, including a loosening of patent protections on medicines.²

Opposition comes mainly from pharmaceutical companies, which argue that without patent protection profits will dry up, eliminating the incentive to conduct research into new drugs. But who really pays for AIDS research? The reality is that taxpayers, not shareholders, have borne most of the cost. Publicly funded research councils have contributed hundreds of millions of taxpayers' dollars to AIDS drug research. Indeed, the Pharmaceutical Research and Manufacturers of America, an industry lobby group, estimates that private industry finances only about 43% of drug development.¹ Five commonly used drugs against AIDS—didanosine, lamivudine, nevirapine, stavudine, and zidovudine—were developed largely as a result of public funds.¹

But beyond this argument lies the question of what a loosening of patent protection means. The access to essential medicines campaign advocates for the right of poorer countries to use completely legal trade measures in a public health emergency.¹ These include compulsory licensing—the legal right to produce patented medicines in exchange for a royalty payment to the patent holder—and parallel imports—the legal right to import patented drugs from another country where they can be obtained more cheaply.

These measures can hardly be considered a threat to drug research, especially since they already exist under the World Trade Organization's rules and would have no impact on patent protections in Western countries. Furthermore, the introduction of generic drugs lowers costs. A study by Médecins Sans Frontières found that the introduction of generic AIDS drugs in Brazil means that it now costs the same to treat 1000 patients there as it does to treat 552 in Thailand, where generic drugs are less available.¹

Patents restrict access to medicines, and poor patients die every day of diseases against which effective treatments exist. Those prepared to defend an unfettered

pharmaceutical market must acknowledge that the only freedom it offers these people is the freedom to die without access to essential medicines.

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Vaccines and medicines for the world's poorest

Quality of vaccines and medicines must be monitored

EDITOR—Smith points to increasing international awareness about inadequate supplies of vaccines and drugs in tropical countries.¹ Future private-public partnerships for better supply of vaccines and medicines for the world's poorest countries with "push" and "pull" mechanisms and financial allocation of billions of dollars by the American Congress would indeed imply adequate funds for researchers and others. Nevertheless, even that exorbitant fiscal input would provide little relief to many people living in tropical countries. Funds should be spared to monitor the quality of vaccines, drugs, and diagnostics in such countries.

There have been frequent reports of the poor quality of vaccines, drugs, and diagnostics in Asia, Africa, and Latin America. In Kelantan, a state in northwestern Malaysia, the contents of 14 of 33 phials of live poliovirus vaccine did not meet the criteria of a potent vaccine.² Assay of active ingredients of tetracycline, co-trimoxazole, ampicillin-clavulanate, and chloroquine being offered to patients in Nigeria and Thailand showed 37% of samples to be substandard; in six samples of chloroquine no active ingredient was left.³ Reagents for HIV antibody assay that had been improperly stored or were past the expiry period in a Zambian hospital had their sensitivity and specificity reduced by 11-18%. The use of blood pretested with such reagents was associated with at least a six times higher than expected risk of HIV transmission.⁴

The prospective international collaborators to address current issues with vaccines, drugs, and diagnostics in tropical countries should allocate money to assess the quality of these items available for local use. Representative aliquots should be retrieved for measurement of the active ingredients. Research towards standardisation of simple tests to assay active ingredients in the field is essential. A paracetamol specific test that does not require costly equipment and

trained staff has been useful as an initial screening test to monitor the quality of individual tablets in the field.⁵

Only pilot programmes for surveillance of vaccines, drugs, and diagnostics in the world's poorest countries would determine if there was any need to stabilise them. The addition of stabilisers to labile vaccines might well ensure the full stability and utility of vaccines, drugs, and diagnostics among people in the world's poorest countries. An inbuilt programme for surveillance of these items in any global push and pull strategy would ensure that billions of dollars would assist in alleviating the misery of masses.

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1 Smith R. Vaccines and medicines for the world's poorest. *BMJ* 2000;320:952-3. (8 April.)

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5 Roy J, Saha P, Sultana Kenyon AS. Rapid screening of marketed paracetamol tablets: use of thin layer chromatography. *Bull WHO* 1997;75:19-22.

Attempts of Global Forum for Health Research should be viewed with optimistic scepticism

EDITOR—The Global Forum for Health Research mentioned in Smith's editorial is attempting to tackle the complex issues involved in supplying vaccines and medicines for the world's poorest people,¹ but many areas of major concern remain.

The focus on the development, supply, availability, and use of vaccines and medicines is similar to that in the vertical disease programmes used in the past few decades. Such a targeted approach may have some benefits but does nothing to address the root cause of morbidity and mortality in poor countries—namely, poverty. Such programmes have always been favoured by donor countries as they achieve rapid results and seemingly pleasing statistics.

The supply of vaccines and medicines to the poorest in the world might attract publicity and media attention, but vaccines and medicines achieve little in the long term if the root causes of ill health are not addressed with similar resources and enthusiasm. Children may survive their first few years because of the high uptake of vaccines only to succumb later to diarrhoeal illness and malnutrition.

Some drug companies are selling products in developing countries that are of no health benefit, simply because they know they can be sold. Many products available in poor countries are not on the World Health Organization's essential drugs list and are not formulated for use in richer countries. Sugar coated vitamin pills are a prime example of this. The way that such items are

marketed makes them seem desirable to poor families, who may give up a day's wages to buy them. As long as these activities continue the sincerity of certain pharmaceutical companies in their involvement in the battle to improve the health of people in poor countries remains questionable.

Before more medicines are to be made available, urgent action needs to be taken on the monitoring and control of the sale of medicines in developing countries. Inappropriate use of many medicines has led to ineffective treatment and drug resistance. For example, street vendors in some of these countries can sell various drugs used in the treatment and prophylaxis of malaria with no knowledge of their effectiveness. This has contributed to the rising morbidity and mortality from malaria and to resistance to chloroquine.

Until these concerns have been addressed this well intentioned initiative should be viewed with optimistic scepticism.

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1 Smith R. Vaccines and medicines for the world's poorest. *BMJ* 2000;320:952-3. (8 April.)

When public health may not be public health

EDITOR—Confronted with the health of people in developing countries, governments focus aid on healthcare services or high technology prevention. These are not necessarily a logical initial reaction. They may not even be "public health" practices.

Hospitals without inland revenue or a broader infrastructure can be white elephants to those who cannot afford to attend or whose conditions require more resources than are available. This is not the host country's fault, but it is a reality in countries which have suffered civil disruption.

Even preventive approaches are invariably medical. Immunisation requires a degree of organisation that exists only with external input: sterilisation, materials, vehicles and fuel, refrigeration, portable ice boxes, maintenance, trained staff, and vaccines or serum samples. Such operations are intrinsically unsustainable in certain environments.¹

Medical prevention tries to address the common childhood diseases that can be vaccinated against and were prevalent in Britain before the second world war, not the main problems of developing countries: acute respiratory infections, tuberculosis, malaria, and diarrhoea. In Europe these mainly decreased before drug treatments or preventions were available, not through health service management but through sanitation, water, land reclamation, decreased overcrowding, and improved nutrition. Many improvements were side effects of unrelated activities such as agricultural revolution, swamp drainage, economic growth, even war. These are not medical dis-

ciplines, hence the minimising of their role historically.

A focus on healthcare structures should ensure that governments are helped in the development of an equitable system of taxation, thus allowing programmes to continue. Even so, health services should not exist at the expense of genuine public health.

George Orwell said: "It is almost universally felt that when we call a country democratic we are praising it: consequently the defenders of every kind of regime claim that it is a democracy, and fear that they might have to stop using the word if it were tied down to any one meaning."² Similarly, public health is the current buzz word with donor agencies and relief programmes. Perhaps we need a totally new vocabulary.

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1 Lafond A. *Sustainability in the health sector*. Save the Children Fund, 1993. (Working paper.)
2 Orwell G. *Politics and the English language* (1946). In: *A collection of essays*. Harvest, 1970.

Accurate figures would help to assess countries' needs better

EDITOR—In his news item Lamar reports Médecins Sans Frontières as saying that developing countries spend twice as much a year on debt repayments as on health and education combined.¹ Over the past decade I have read similar comparisons for many countries and regions of the developing world. Occasionally the comparison is combined with the figure—sometimes grossly inaccurate—for debt servicing. Not once have I seen the figures for education or health expenditure, nor the figure for aid.

My own interest is in Zambia. From various sources I have learnt that in the mid-1990s Zambia's debt servicing was about US\$350m (interest US\$200m, repayments US\$150m). Annual aid in these years was about US\$500m. It may be true to say that debt service payments made by Zambia in the mid-1990s came to more than the country spent on education and health combined, but, if it is true, then it is also true to say that aid pays for all Zambia's education and health care. I have never seen this last truth mentioned.

Zambia, and much of southern Africa, is going through one of the great tragedies of history. The causes are many and include rapid population growth, AIDS, and incompetent government. This tragedy is not a result of rich countries taking cash out of Zambia. On the contrary, rich donors and creditors (the United Kingdom, the United States, Germany, France, Italy, Japan, the European Union, the International Monetary Fund, the World Bank, etc) are putting money into Zambia and most other sub-Saharan African countries as well.

Zambia and much of sub-Saharan Africa needs ten times as much aid as it is getting. If organisations that previously have given us

incomplete and misleading figures could give us accurate and agreed figures on debt servicing, aid, and health and education expenditure country by country, we would be better able to assess each country's needs and help more effectively and generously.

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1 Lamar J. G8 countries accused of ignoring debt relief. *BMJ* 2000;321:320. (5 August.)

Maternal mortality and mothers' deaths as development indicators (See p 809)

EDITOR—In the new millennium maternal mortality has come to be recognised as a lead development indicator, replacing financial indicators such as gross national product that were used during the 20th century. Although this shift represents progress, the interpretation of maternal mortality needs reconsideration. For example, a key international development target selected by the Development Assistance Committee is a three quarters reduction in maternal mortality by 2015.¹ At country level, maternal mortality ratio is used as the main verifiable indicator in health planning and programming—for example, the \$3.3bn health and population sector programme in Bangladesh.²

The World Health Organization's 10th Revision of the International Classification of Diseases (ICD-10) defines a maternal death as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes. A maternal death thus defined is limited to a very short period of motherhood, and a woman may die a maternal death and not even be a mother if she has lost a potential child through ectopic pregnancy, menstrual regulation, abortion, or stillbirth.

The maternal mortality ratio is an episodic measure that considers a maternal death only during the 294 days associated with pregnancy—a limited reflection of the risks of death to mothers (for example, from tuberculosis) at any point during the entire

span of their reproductive years (15-45), or 10 950 days per woman. The implication of this is that many more mothers are dying than are included in the standard definition of maternal mortality.

The World Bank has calculated globally that tuberculosis kills more women annually than all causes of maternal mortality combined.³ The WHO has calculated globally that tuberculosis is the leading individual cause of death among women aged 15-44. In Bangladesh, the WHO estimates that there are 33 000 maternal deaths each year,⁴ of which many may be from tuberculosis. The United Nations estimates that almost double that figure, about 63 000 women, die each year in Bangladesh, during their reproductive years. Most women who die during their reproductive years in Bangladesh—for example, because of tuberculosis—are also likely to be mothers, unless they are infertile, perhaps as a result of tuberculosis.⁵

Because of this limited definition of maternal mortality, the deaths of these additional 30 000 mothers every year, a total of 150 000 women over the five years of the health and population sector programme, are excluded when the impact of the programme in Bangladesh is monitored.

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1 Organisation for Economic Co-operation and Development. *Shaping the 21st century: the contribution of development co-operation*. Paris: OECD, 1996. (DCD/DAC(96)15/FINAL.)
2 Ministry of Health and Family Welfare. *Health and population sector programme, 1998-2003*. Dhaka: Government of People's Republic of Bangladesh, 1998.
3 Connolly M, Nunn, P. Women and tuberculosis. *World Health Stat Q* 1996;49:115-9.
4 Abou-Zahr C, Wardlaw T, Stanton C, Hill K. Maternal mortality. *World Health Stat Q* 1996;49:77-87.
5 Parikh FR, Nadkarni SG, Kamat SA, Naik MSN, Soonawala SB, Parikh RM. Genital tuberculosis—a major factor causing infertility in Indian women. *Fertil Steril* 1997;67:497-500.

Correction

Doctors and nurses

We apologise for the editorial error that occurred in the first letter of this cluster. Let's celebrate the difference between doctors and nurses, by Patrick White (16 September, p 698). In the first sentence of the third paragraph the word "not" was omitted. The sentence should have read, "As a general practitioner I do not expect nurses to do the things I dislike doing more cheaply and more efficiently" [rather than the published, "As a general practitioner I do expect nurses to do the things I dislike doing more cheaply and more efficiently"]. The version on [bmj.com](http://www.bmj.com) (www.bmj.com/cgi/content/full/321/7262/698) was corrected on 19 September.



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