

NEW GOALS FOR NEW CHALLENGES

Overuse of antibiotics in developed nations and the irregular use of quality medicines in developing nations, owing to poverty as well as a lack of effective healthcare, have turned the tables on us. David L Heymann explains why old killers such as tuberculosis and malaria are defying earlier treatments and the importance of making a combined and concerted effort with the drugs we have, in order to stem this problem.

If we fail to make rapid progress during this decade, it may become very difficult and expensive - if not impossible - to do so later.

We are the first generation ever to have the means of protecting itself from the most deadly and common infectious diseases. Today, we possess the knowledge to prevent or cure diseases such as malaria, tuberculosis, HIV, diarrhoeal diseases, pneumonia and measles in both wealthy and poorer nations.

In all countries, these diseases can be prevented or treated with tools and medicines that usually cost a few dollars — often mere cents. Due to the use of anti-malarials and insecticide-treated bed nets, malaria deaths are no longer common in Vietnam. Mexico has achieved a five-fold reduction in diarrhoeal deaths through the use of oral rehydration. Increased condom use and health education have enabled Thailand and Uganda to reduce the spread of HIV. The effective use of antibiotics in parts of India has resulted in a seven-fold decrease in tuberculosis deaths.

Sluggish response

But now that life-saving drugs, interventions and control strategies are available, the world has been slow to put them to wide use. In disease endemic countries, global efforts have remained embarrassingly modest. Only 3% of Africa's children have bed nets. Effective anti-TB medicines and treatment strategies reach only 25% of the world's TB cases and only half of developing countries have adopted the effective Integrated Management of Childhood Illnesses (IMCI) package.

We are now beginning to pay for our neglect — a price over and above the tragedy and suffering infectious diseases inflict on millions of people annually. Our failure to make full use of recently discovered medicines and products means that many will slip through our grasp.

Drug resistance is the most telling sign that we have failed to take the threat of infectious diseases seriously. It suggests that we have mishandled our precious arsenal of disease-fighting drugs, both by overusing them in developed nations and by misusing and under using them in developing nations. In all cases, half-hearted use of powerful antibiotics now will eventually result in less effective drugs later.

The window of opportunity is closing

Before long, we may have forever missed our opportunity to control and eventually eliminate the most dangerous infectious diseases. Indeed, if we fail to make rapid progress during this decade, it may become very difficult and



J. Schyette/WHO

Effective TB medicines reach only a few

expensive — if not impossible — to do so later. We need to make effective use of the tools we have now.

The eradication of smallpox in 1980, for example, happened not a moment too soon. Just a few years' delay and the unforeseen emergence of HIV would have undermined safe smallpox vaccination in populations severely affected by HIV.

While many exciting research efforts are currently underway, there is no guarantee that they will yield new drugs or vaccines in the near future. On average, research and development of anti-infective drugs takes 10 to 20 years.

The pharmaceutical industry reports that it costs them a minimum of US\$500 million just to bring one drug to market. Combined funding for research and development into ARI, diarrhoeal diseases, malaria and TB last year was under that amount.

Terrible old visitors who won't go away

Today's most virulent killers have been at work for centuries. Malaria and acute respiratory infections have killed multitudes throughout much of human history. Infectious disease continues to be an omnipresent threat to life and livelihood to a large segment of the world population.

The changed scenario

The 20th century has seen an almost complete transformation in our understanding and treatment of infectious disease. Successful medications have reconfigured our approach to most bacterial and fungal infections, while effective vaccines have been developed against infections such as smallpox, measles, typhoid fever, rubella, diphtheria, tetanus, yellow fever, pertussis and polio.

In developing nations the story has been tragically different. Separated by poverty, geography, scarcity of antimicrobials and a lack of political will on the part of governments whose priorities may not be public health, individuals living in such areas have long been consigned to the

health care margins.

Apart from smallpox vaccines, quinine and penicillin, few of these breakthroughs have been accidental discoveries. Instead, they are the result of dedicated scientific effort and vast amounts of money, time and human labour expended over decades. But after a flurry of discoveries between 1930 and 1970, the past 30 years have witnessed fewer discoveries in the fight against infectious killers.

With the advent of HIV, the discovery and development of antiretrovirals has meant yet another leap for war in the fight against contagious diseases. The introduction of Zidovudine (AZT) in 1985 was followed a decade later by the first protease inhibitor.

Nowadays, the cache of antimicrobial weapons targeting infectious disease has swollen to an impressive arsenal of more than 150 compounds; but drug resistance is already nibbling away at medications that took decades to develop and a host of microbes challenge conventional treatment.

The poverty paradigm

In many developing nations drugs are freely available, but only to those who can afford them. This means that most patients are forced to resort to poor quality counterfeit or truncated treatment courses that invariably lead to more rapid selection of resistant organisms. A patient infected with a resistant strain may endure prolonged illness (often resulting in death) and hospital stays which in turn result in lost wages, lost productivity, family hardship and increased infectiousness.

A massive effort is required

Although prevention through vaccination continues to be the ultimate weapon against infection and drug resistance, no vaccines are available to prevent five of the six major infectious killers. Yet it is a needless tragedy that 11 million people perish each year awaiting the advent of newer miracle drugs and vaccines. Prevention and treatment strategies using tools available now can be

When diseases are fought wisely and widely, drug resistance can be controlled and lives saved.



Where there is no artist



Peter Williams/WCC

provided to populations throughout the world to help eliminate high-burden diseases of poverty.

We need not stand by helplessly watching drug resistance increase and drug effectiveness decrease. Resistance can be contained when an infection is addressed in a comprehensive and timely manner and rarely becomes a public health problem.

The most effective strategy against antimicrobial resistance is to get the job done right the first time – to unequivocally destroy microbes – thereby defeating resistance before it starts. Today, despite advances in science and technology, infectious disease poses a more deadly threat to human life than war.

We need to therefore use our resources wisely; to widen access to appropriate medications to encompass all people – regardless of race, gender or socio-economic status – while at the same time reserving these precious compounds to treat only those diseases for which they are specifically required. We need to continue the fight to end conditions of poverty, ignorance, greed and social injustice that force individuals and health care providers into decisions that will ultimately bring about our own downfall. The potential of drug resistance to catapult us all back into a world of premature death and chronic illness **is all too real.**

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LESSONS FROM THE LAST THIRTY YEARS

In our eagerness for results, we sometimes forget that the 'means' is often as important as the 'end'. With international initiatives substituting comprehensive primary health care with selective approaches there is a growing concern that the Alma Ata (and all that it stood for) is being shelved in our quest for instant solutions.



Mike Rowson

Mike Rowson raises a number of questions about these new trends.



Peter Williams/WCC

Waiting for vaccines

A return to selective approaches?

The focus on the group of communicable diseases has come about partly as a result of the much-needed concentration of the international community on the problems of absolute poverty. Donors have been making quite large promises of funds for diseases such as HIV/AIDS, malaria and tuberculosis. But with these promises and the eventual disbursement of money, will come pressure to show results quickly. It seems almost inevitable therefore that these new resources will be placed either in slightly better off

developing countries with adequately functioning health systems, or in states where health systems have broken down through vertical programmes.

But vertical programmes have several dangerous side effects: they often duplicate existing activities; distract health personnel who have to focus on the immediate outcomes of individual projects rather than the long-term development of systems; and they are sustainable only as long as donor priorities stay the same and funds continue to flow. In short, they have led to a fragmentation of health systems and the skewing of

priorities. They also remove control from national governments and give donors more power over national health policy. That disease-specific programmes are unsustainable, has been known since the 1960s and seventies, after the failure of malaria eradication in India. The implied need to look at health development in another way was part of the impetus behind the Alma-Ata declaration and the call for comprehensive primary health care and sustainable health systems. This did not stop the expansion of selective approaches during the economic crisis and re-retrenchment during the 1980s. Another question arises over defining what are the 'diseases of poverty' in the first place. What about maternal mortality, mental health issues and non-communicable diseases? A recent international report on malnutrition estimated that up to 30% of the urban impoverished in South Asia may be on the verge of major disability from diabetes and its consequences. *Pan American Health Organization (PAHO)* reports that obesity is a major problem amongst the poor in Latin America, and there is growing concern over these issues in Africa too.

Recently UNICEF undertook a major study looking at the reasons for the success of some low-income countries, such as Barbados, China, Cuba, Malaysia, Zimbabwe and Sri Lanka, in attaining high levels of human development. The report argues that what worked in these countries was not selective primary health care, but comprehensive primary health care: tackling causes of ill health outside the health sector, reducing inequalities and concentrating on system building are the broad outlines of the successful approach. All the ingredients outlined at Alma-Ata; a fact which the report enthusiastically acknowledges.

Given this compelling evidence, it seems strange that WHO doesn't defend the vision of comprehensive primary health care more strongly.

Emphasis on health systems

During the 1990s donors and govern-

ments have increasingly focused their attention on the need to build health systems. This new focus on health systems was accompanied by wide-ranging reforms including decentralization, integration, increasing private contributions to health care and contracting out of services to the profit and not for profit sectors. Decentralization and integration of services are important initiatives, but the processes are often underfunded and have resulted in muddle and chaos. Interviews with donors conducted for a forthcoming book on economic and health sector reforms in developing countries has shown that there is widespread agreement that the reforms were often of a 'one-size-fits all' nature and neglected service delivery. Some essential services have collapsed in the wake of reform.

The reforms on the financing side, and in particular the recommendation for increased user charges, have often been disastrous: increased charges have denied people access to healthcare.

Despite this concentration on health systems during the 1990s, evidence gathered by *MedAct* and *Save The Children Fund* indicates that health system effectiveness (as measured by assisted delivery and immunization rates) has been on the decline in sub

Vertical programmes often duplicate existing activities and distract health personnel from immediate needs.



Peter Williams/WCC

Weighed down by poverty



Research is important

M. Edwards/TDR/WHO

Saharan Africa and in other countries in the developing world during the last decade, indicating the need for changes in the reforms being undertaken as well as substantial new inputs of cash.

It is unclear whether the new initiatives such as *Global Alliance for Vaccines & Immunizations* (GAVI) and the global health fund will help us avoid any of these dangers in the health sector. GAVI has already been criticized for its focus on new technology

and the ultra-vertical, national immunization days. And it is unclear whether the global health fund will be used to strengthen health systems at all, or simply end up as a giant commodity purchase fund. And what role will developing countries and the private sector play in these new international structures?

Policies outside the health sector

Economic policies which have a direct impact on health need careful monitoring. Programmes such as those imposed by the World Bank and International Monetary Fund, needs to be re-evaluated as these affect livelihoods, in terms

of the incomes they receive, and growth of government health expenditures. Again, the one-size-fits-all approach to policy-making has been the culprit, together with an ideological focus of the reforms on market-based approaches.

Disturbingly, adjustment programmes appear to have had significant negative impacts on another key health determinant, education, with government expenditures falling dramatically over the last twenty years.

Role of governments?

In an effort to end a 'one-size-fits-all' approach the Poverty Reduction Strategy Paper (PRSP) is studying the possibility of giving back control over policy-making to low-income countries: decisions about economic and social policies will no longer be made in Washington at the headquarters of the International Monetary Fund and World Bank. Whether this will happen when of course all the money remains in Washington, and the IMF and World Bank still have the final say over what policies are implemented, is a moot question. But the fact remains that the rhetoric of country-control does give poor country governments a bit more space for manoeuvre in policy terms.

Local governments should realize that the comprehensive primary health care approach is the best way of tackling ill-health. Secondly, that economic policies which have detrimental impacts on the health sector need to be changed. Thirdly, governments will have to avoid adopting vertical approach blindly.

What is the role of WHO?

WHO can encourage all these developments at the international level, and give advice to national policy-makers on health policy and tackling the determinants of health outside the health sector. It can also be an advocate for comprehensive primary health care and take the lead role in revitalizing the health for all agenda. To do this, it must stand up for health when the policies and programmes of other organizations such as the IMF and World Bank, and the World Trade Organization threaten to undermine health.

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