Diseases of poverty and the 10/90 gap

Diseases of poverty and the 10/90 Gap

Diseases of poverty and the 10/90 Gap

Written by Philip Stevens, Director of Health Projects,
International Policy Network
November 2004

Introduction: What is the 10/90 Gap?

Activists claim that only 10 per cent of global health research is devoted to conditions that account for 90 per cent of the global disease burden – the so-called '10/90 Gap'.[1] They argue that virtually all diseases prevalent in low income countries are 'neglected' and that the pharmaceutical industry has invested almost nothing in research and development (R&D) for these diseases.

Citing this alleged imbalance as justification, activists have been calling for a complete redesign of the current R&D paradigm in order to ensure that more attention is paid to these 'neglected diseases'.[2] This could include measures such as an 'essential research obligation' that would require companies to reinvest a percentage of pharmaceutical sales into R&D for neglected diseases, either directly or through public R&D programs.[3]
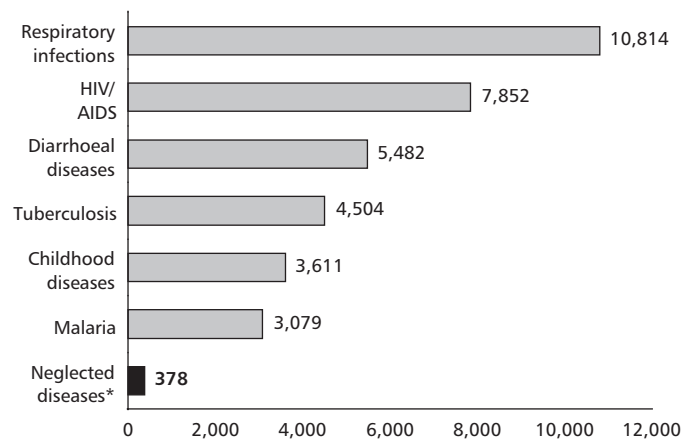
But does such an imbalance really exist and what would be the effect of redesigning the R&D system? This paper investigates the realities of the 10/90 gap and its relation to the diseases of poverty.

Neglected diseases

Many scholars and activists have suggested that the pharmaceutical industry is failing to devote sufficient R&D effort towards finding effective cures and treatments for tropical infectious diseases such as leishmaniasis, lymphatic filariasis, Chagas' disease, leprosy, Guinea worm, onchocerciasis and schistosomiasis. These so-called 'neglected' diseases predominantly effect poor populations in low income countries,[4] and pose particular social and economic problems for those affected.

Patrick Trouiller, for example, has pointed out that of the 1,393 total new drugs approved between 1975 and 1999, only 1 per cent (13 drugs) were specifically indicated for a tropical disease.[5] Research conducted by the DND Working Group and the Harvard School of Public Health in 2001

Figure 1 **Number of daily deaths from diseases[7]**

Disease	Daily deaths
Respiratory infections	10,814
HIV/AIDS	7,852
Diarrhoeal diseases	5,482
Tuberculosis	4,504
Childhood diseases	3,611
Malaria	3,079
Neglected diseases*	378

*Neglected diseases are defined as African trypanosomiasis, Chagas disease and leishmaniasis

revealed that of the 20 global pharmaceutical companies surveyed, only two had research projects underway for the 'neglected' diseases of Chagas and leishmaniasis.[6]

Neglected diseases are a tiny fraction of total mortality

However, these bare statistics serve to mislead people into thinking that the poor are suffering at the expense of the rich. The reality is that 'neglected' diseases often do not represent the most pressing public health priorities in low income countries. They constitute a small fraction of their total disease burden (Figure 1). According to the 2002 World Health Organisation's (WHO) World Health Report, tropical diseases accounted for only 0.5 per cent of deaths in high-mortality poor countries, and only 0.3 per cent of deaths in low-mortality poor countries.

Moreover, treatments already exist for many of these diseases. Schistostomiasis (bilharzia), which predominantly affects children in Africa, can be treated with praziquantel at a cost of 30 cents per child per year. Onchocerciasis (river blindness) is

controllable with ivermectin. A range of treatments exist for lymphatic filariasis (elephantiasis). The only significant tropical disease for which there is no existing medicine is dengue fever, but even for this disease there are five compounds currently at the state of discovery and preclinical development, a further two in Phase 1 trials and one more in Phase 2 trials.[8] In fact, the WHO acknowledges that there are only three diseases that are genuinely 'neglected': African trypanosomiasis, leishmaniasis and Chagas disease.[9]

Most disease in lower-income countries is caused by poverty

A large proportion of illnesses in low-income countries are entirely avoidable or treatable with existing medicines or interventions. Most of the disease burden in low-income countries finds its roots in the consequences of poverty, such as poor nutrition, indoor air pollution and lack of access to proper sanitation and health education. The WHO estimates that diseases associated with poverty account for 45 per cent of the disease burden in the poorest countries.[10] However, nearly all of these deaths are either treatable with existing medicines or preventable in the first place.

- Tuberculosis, malaria and HIV/AIDS, for example, together account for nearly 18 per cent of the disease burden in the poorest countries.[11]

- Malaria can be prevented through a combination of spraying dwellings with DDT, using insecticide treated mosquito nets and taking prophylactic medicines such as mefloquine, doxyclycline and malorone. Malaria can also be treated with artemisinin combination therapy. Education can also play an important role in reducing the incidence of insect-borne diseases, for example by encouraging people to remove sources of stagnant water (insect breeding sites) from near their dwellings.

- Tuberculosis can be prevented by improving

nutrition, and can be treated with DOTS therapy. This can detect and cure disease in up to 95 per cent of infectious patients, even in the poorest countries.[12]

- Education is vital for the prevention of HIV/AIDS – and this entails the full engagement of civil society. A combination of anti-retrovirals (ARVs) and good nutrition can help to control the viral load and suppress the symptoms of HIV/AIDS.

- Treatable childhood diseases such as polio, measles and pertussis, account for only 0.2 per cent of Disability Adjusted Life Years (DALYs) in high-income countries, while they account for 5.2 per cent of DALYs in high mortality low-income countries.[13] Vaccines for these diseases have existed for at least 50 years, yet only 53 per cent of children in sub-Saharan Africa were immunised with the diphtheria-tetanus-pertussis (DTP) jab in 2000.[14]

- Diarrhoeal diseases are caused by the poor sanitation inherent to the condition of poverty, yet are easily and cheaply treatable through oral rehydration therapy. However, diarrhoeal diseases still claim 1.8 million lives each year. [15]

- Respiratory infections caused by burning biomass fuels in poorly ventilated areas also place a considerable health burden on poor people. According to the WHO, exposure to biomass smoke increases the risk of acute lower respiratory infections (ALRI) in childhood, particularly pneumonia. Globally, ALRI represent the single most important cause of death in children under 5 years and account for at least two million deaths annually in this age group.[16]

- Malnutrition particularly affects people in poor countries. As a result of vitamin A deficiency, for example, 500,000 children become blind each year,[17] despite the fact that such outcomes can be avoided by cheap, easy-to-administer food supplements.[18]

Table 1 **Deaths caused by poverty-related diseases[20]**

% of deaths caused by/in	High mortality low-income countries	Low mortality low-income countries	High-income countries
Infectious and parasitic diseases	34.1	24.8	2.1
Respiratory infections	9.9	8.0	3.7
Perinatal and maternal conditions	8.4	6.8	0.4
Nutritional deficiencies	1.3	1.1	0.0
Tropical diseases	0.5	0.3	0.0
Total 'poverty-related' diseases	54.1	40.7	6.2

Poverty-related diseases cause far higher levels of mortality in low-income than high-income countries (Table 1). Most of these diseases and deaths can be prevented with pre-existing treatments and prevention programmes. Diseases for which there is no treatment currently available, such as dengue fever, contribute towards a far smaller proportion of low-income country mortality rates than diseases which are easily preventable or treatable. It is estimated that 88 per cent of child diarrhoeas, 91 per cent of malaria and up to 100 per cent of childhood illness, such as measles and tetanus, can be prevented among children using existing treatments.[19] This means that up to 3 million child lives could be saved each year if these medicines could be distributed effectively to all areas of need.

Illnesses of low and high-income countries are converging

Exponents of the 10/90 Gap are also inaccurate when they claim that low-income countries, which constitute the majority of the world's population and disease burden, suffer from completely different diseases than high-income countries. The premise that only 10 per cent of the global health research budget, both private and public, is used for research into 90 per cent of the world's health problems is factually incorrect.

In reality, the nature of diseases suffered by both rich and poor countries is converging rapidly, with both spheres suffering from an increasingly similar spread of diseases. For example, non-communicable diseases such as cancers, neuropyschiatric and cardiovascular diseases – traditionally associated with high-income countries – now represent over 60 per cent of the total global disease burden, and impact both rich and poor countries. Cardiovascular diseases alone account for one-quarter of all deaths in low mortality low-income countries, with this proportion set to rise as these countries gain access to diets richer in fats and calories. In absolute terms, non-communicable diseases now kill greater numbers of people in the lower-income countries than they do in high-income countries.

It is hardly surprising that a significant amount of resources are being devoted by the current global R&D effort towards developing treatments for cancers, cardiovascular diseases, neuropyschiatric diseases and diabetes. Although such diseases have been traditionally associated with richer countries, they are now also significant and growing problems in poorer parts of the world.

This convergence of patterns of mortality suggests that, in the future, low-income countries will derive significant benefit from drugs currently being researched with high-income country markets in mind. This is particularly the case for those drugs in which most R&D effort is currently being focused,

Table 2 **Deaths caused by 'developed-country' diseases[21]**

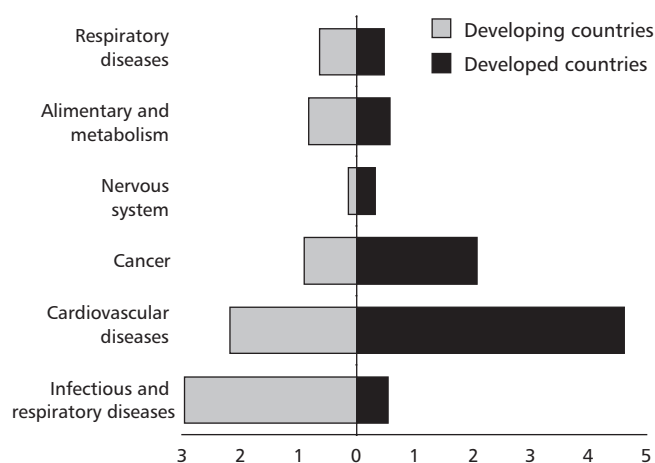| % of DEATHS caused by/in	High mortality developing countries	Low mortality developing countries	Developed countries
Malignant neoplasms (cancers)	6.3	9.9	21.2
Diabetes	0.6	1.5	1.7
Neuropsychiatric disorders	1.3	1.4	2.9
Cardiovascular diseases	18.9	23.4	47.8
Respiratory diseases (asthma)	4.0	6.7	5.0
Digestive diseases	2.7	3.4	3.7
Total 'developed-countries' diseases	33.8	46.4	82.3

namely treatments for cancers, cardiovascular and neuropyschiatric diseases.

The fact that low-income countries are rapidly catching up with high-income countries in their levels of obesity only serves to reinforce the point that the two spheres will increasingly suffer from similar diseases in the future. According to the International Association for the Study of Obesity (IASO), 50 per cent of South African women are

Figure 2 **Weighted distribution of deaths caused by major global diseases (deaths per mil of relevant population)[22]**

now overweight, whilst in Morocco 40 per cent of the population are overweight.

In Kenya, the figure stands at a startling 12 per cent, and in Nigeria it is estimated that between 6 per cent and 8 per cent of people are obese. As Professor Arne Astrup of the IASO puts it, 'on an African level we see now that obesity is a really major disease, in line with HIV and malnutrition.' [23] With growing levels of obesity, it is safe to predict that low-income country populations stand to suffer more in the future from obesity-related diseases such as strokes and diabetes.
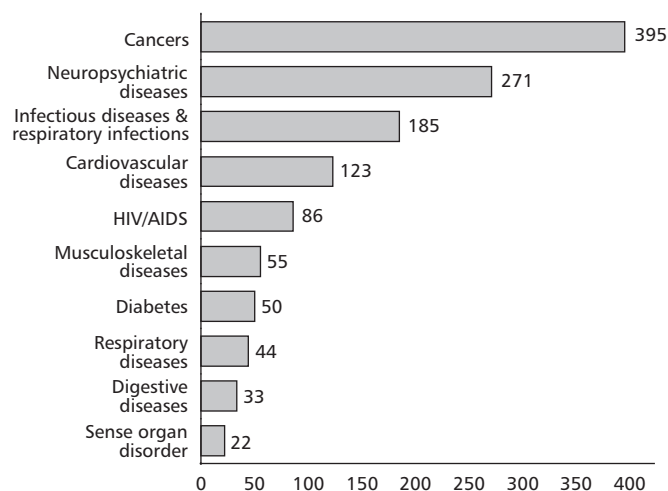
It would seem rather unjust, then, to vilify the pharmaceutical industry for spending research money on finding treatments for these areas; it is a simple case of the supply of research following the demand of mortality patterns (Figure 3).

Low-income countries benefit from treatments originally developed for wealthier countries

Low-income countries stand not only to benefit in the future from drugs that are currently in the R&D pipeline, but that they also currently benefit from drugs that were originally developed for wealthier markets. Polio, pertussis (whooping cough) and diphtheria, for example, were once endemic in

Figure 3 **Number of compounds in development by major disease categories[24]**

Disease category	Number
Cancers	395
Neuropsychiatric diseases	271
Infectious diseases & respiratory infections	185
Cardiovascular diseases	123
HIV/AIDS	86
Musculoskeletal diseases	55
Diabetes	50
Respiratory diseases	44
Digestive diseases	33
Sense organ disorder	22

Figure 4 **Percentage of WHO regions lacking access to essential medicines[29]**

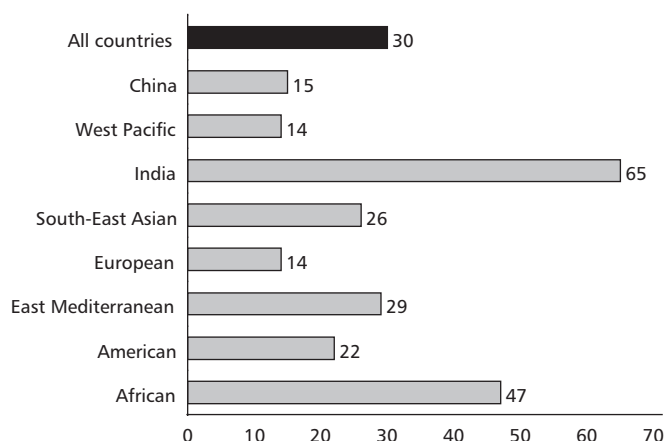| Region	Percentage
All countries	30
China	15
West Pacific	14
India	65
South-East Asian	26
European	14
East Mediterranean	29
American	22
African	47

wealthier countries, but they have practically been eradicated from these areas due to simple vaccines and treatments that were developed a few decades ago.

Now, three-quarters of the world's children are vaccinated against such diseases, including millions in low-income countries, saving some three million lives a year and preventing long term illness and disability in millions more. Tuberculosis treatments were originally devised to combat the disease in wealthier countries, and many populations in low-income countries are now reaping the dividends of this advance in medical science in the form of mass vaccination programmes. HIV/AIDS treatments, in the form of ARVs, were originally developed with wealthy consumers in mind, but treatments have now spread to those poorer countries most affected by the disease and unable to bear the cost of R&D for such treatments themselves.

The pharmaceutical industry is also currently engaged in research projects for diseases that affect high-income countries, such as rotavirus and pneumococcal infections. Lower-income countries

also stand to benefit from this R&D investment in the future if workable treatments are found.

Access is the real problem – not innovation

If treatments exist for the majority of poor countries' health problems, why then do mortality rates remain so high? Any discussion of this question must address the problem of access to essential medicines, which remains an intractable political and economic problem. According to the WHO, an estimated 30 per cent of the world population lacks regular access to existing drugs, with this figure rising to over 50 per cent in the poorest parts of Africa and Asia[25] (Figure 4).

Within these populations, it is the poorest socio-economic groups that disproportionately suffer from a lack of access to existing medicines.[26] The implications of this failure of public health policy on global mortality are profound – according to one study, over 10 million children die unnecessarily each year, almost all in low-income or poor areas of middle income countries, mostly from a short list of

preventable diseases such as diarrhoea, measles, malaria and causes related to malnutrition. [27]

Only one-half (approximately) of sub-Saharan African children are vaccinated against childhood diseases, and in isolated areas that number is as low as one child in 20.[28] A variety of factors conspire to create this desperate situation, many of them caused by government mismanagement and interference.

> An estimated one-third of the world population lacks regular access to essential drugs, with this figure rising to over 50 per cent in the poorest parts of Africa and Asia. And even if drugs are available, weak drug regulation may mean that they are substandard or counterfeit.
>
> WHO Medicines Strategy Report 2002–2003

Intellectual Property Rights

Much debate on this issue of access has centred around the claim that patents held by pharmaceutical companies are a significant contributor to the dire health outcomes experienced by people in the poorest parts of the world. This claim is based on the premise that pharmaceutical companies use their patents to withhold drugs from poorer people in order to maximise their profits.

However, this premise is false. A study by Amir Attaran has shown that in 65 low- and middle-income countries, where four billion people live, patenting is rare for the 319 products on the World Health Organisation's Model List of Essential Medicines. Only seventeen essential medicines on the list are on patent in any of the countries, so that overall patent incidence is low (1.4 percent) and concentrated in larger markets. Those drugs on patent include 12 antiretrovirals and one antifungal, with most of those ARVs belonging to one company.[30]

Furthermore, many companies choose not to enforce

their patents in certain lower-income countries. Of the 969 cases surveyed by Attaran where companies probably could have obtained and maintained patents for these essential medicines, they did so only 31 per cent of the time.

However, intellectual property rights (IPR) are still important factor in ensuring access to essential medicines. Without IPR, it is unlikely that sufficient incentives would have existed to develop many of the 319 products on the WHO's essential medicines list in the first place. This is substantiated by the fact that 90 per cent of the products on the list were originally discovered and/or developed by private companies.[31]

Taxes and tariffs

High prices sometimes constrain access to medicines in certain areas, but these high prices are not solely determined by the manufacturer. In many countries there exist significant local price inflators, including port charges, clearance and freight, importers' margins and central, regional and local taxation, which can add significant additional costs to the basic price of a drug. In addition, tariffs are often an important factor in determining the end-user price of pharmaceuticals in low-income countries. A 57-country study conducted on behalf of the European Commission in 2003 examined pharmaceutical products used in the treatment of communicable diseases. The study found that the countries which apply the highest tariff rate include Nigeria, Pakistan, India and China.[32] As a result, large sections of the populations of these countries are being priced out of treatment by their own governments.[33]

Another disturbing government levy on pharmaceuticals is value added tax (VAT). VAT is a revenue-raising instrument that can exist at several levels of the political system, and may be applied to different classes of products, or certain sectors.[34] The 2003 European Commission study found that VAT

Table 3 **Duties and taxes on retail medicines**[36]

Country	Combined total duties and taxes
India	55%
Sierra Leone	40%
Nigeria	34%
Pakistan	33%
Bolivia	32%
Bangladesh	29%
China	28%
Jamaica	27%
Morocco	25%
Georgia	25%
Mexico	24%

rates imposed on pharmaceuticals averaged over 12 per cent.

Table 3 shows the combined impact of duties and taxes (customs duty + VAT + other duties) on the price of retail medicines in selected poor countries. The global average was 18 per cent; the lowest was found to be 0.01 per cent in Malaysia and the highest 55 per cent in India.[35]
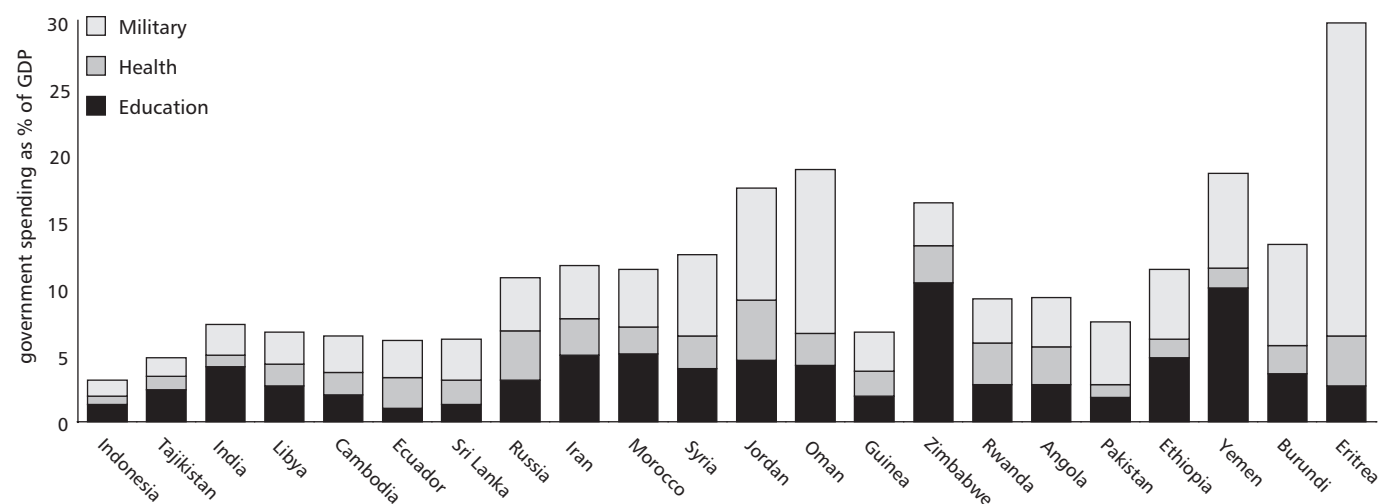
Compared with poverty and a lack of a health infrastructure system, tariffs may be a less important barrier to access to medicines. Nevertheless, it is morally reprehensible that the governments of poor countries should continue to drive up the costs of medicines through taxes and tariffs. These constitute a regressive, unwarranted tax on the sick and a barrier to life-saving treatment.

Questionable political priorities

The governments of low- and middle-income countries often choose to spend their scarce resources on projects and priorities that do not coincide with the basic needs and demands of their populations. Many governments, for example, choose to spend more on their militaries than they do on healthcare. For instance, the government of Pakistan spends 4.7 per cent of its GDP on defence, but a mere 1 per cent on healthcare[37] (Figure 5).

Many of the diseases suffered by the poorest populations are a direct consequence of poverty and can be either treated or prevented with existing

Figure 5 **Public expenditure on health, education and defence**[38]

technologies. It seems perverse in the extreme, therefore, that many governments of low and middle income countries prioritise military spending over health spending, especially when the majority of these countries do not face any existential threat to their security.

Wealth creation as a means to improve health

Medicines also fail to reach the poor because of weak healthcare infrastructures, which are inherently the result of financial and human resource constraints. Malawi, for example, has the fewest doctors per capita in the world, with only one doctor for every 49,118 people.[39] Poverty often goes hand-in-hand with malnutrition, which again results in a host of debilitating but easily preventable diseases. Poor populations are often compelled to use animal dung, crop residues or wood to cook their food and heat their homes, which again results in a significant but ultimately avoidable disease burden. Poor sanitation, a by-product of poverty, results in a large number of deaths from diarrhoeal diseases. Poverty prevents those affected from purchasing the cheap oral rehydration therapy sachets that could easily save lives.

When poverty is reduced and eliminated, health outcomes improve. People in rich countries can expect to live longer and have better access to medical care. With greater wealth, scientists and innovators, both private and public, have better opportunities to conduct research into health and disease. With increased financial resources, more can be spent on education and to improve literacy, which in turn can promote the adoption of new technologies and ensure that these technologies are more widely diffused.

Improvements in agricultural technology, for example, have led to increased food production per capita and lower food prices, even at a time when

the global population has risen dramatically. When combined with more open markets and trade, these productivity increases have ensured that food has become more available to the poor. As new technologies are adopted more widely, economic growth accelerates. This in turn provides individuals and the state with the means to improve basic infrastructure, such as the provision of clean water, which in turn improves health.

Health and wealth can also be mutually reinforcing: a healthier population is better able to engage in economic activities and thereby generate increased income, some of which can be spent on health. In Mymensingh (Bangladesh), for example, agricultural yields increased by 15 per cent after malaria was controlled, because farmers had more time and energy for cultivation. [40]

However, it is unlikely that good health will ever be sustained without long-term wealth creation that can pay for the ongoing improvements in water, sanitation, hospitals and medical research. Those who genuinely hope to improve the health of the world's poorest people should therefore look to wealth creation as the fundamental solution to global health problems.

The 10/90 Gap is a red herring

The evidence presented here suggests that activists who cite the 10/90 gap as justification for the wholesale reform of the pharmaceutical R&D paradigm are setting their sights on the wrong target. It is fallacious and misleading to argue that commercial R&D neglects almost entirely the diseases of the poorer parts of the world. Private companies are responsible for developing and producing the majority of the drugs already on the WHO's essential medicines list, and hundreds of private research initiatives are currently underway to address the world's biggest killers that affect both rich and poor countries. The so-called 'neglected diseases' rarely constitute a country's most pressing

health priorities. The WHO has argued that the key factors behind the excessive mortality caused by these diseases include unavailability of health services and failure to use prevention and treatment strategies, rather than the unavailability of medicines. [41]

The health problems faced by the world's poorest populations are not caused by a lack of drugs specifically related to their problems and diseases. The real problem is ensuring that these populations can actually access vital medicines. Many governments fail their populations in this respect by imposing punitive tariffs and taxes on medicines, and by skewing their spending priorities in favour of defence over health. The governments of poor countries hinder the creation of wealth, imposing obstacles in the way of owning and transferring property, imposing unnecessary regulatory barriers on entrepreneurs and businesses, and restricting trade through extortionate tariffs. It is these and other political failures that have left poor populations without the necessary resources to access the medicines that could so easily transform their quality of life.

Campaigners who cite the 10/90 Gap as the prime mover behind the health problems of the poor are in fact betraying the very people they are attempting to help. In seeking to alter radically the current R&D paradigm, they risk undermining the incentive system that has led to the development of treatments for a great majority of the health problems suffered by both high and low income countries.

Emerging health threats, ranging from drug-resistant strains of AIDS and tuberculosis to avian flu, remind us of the importance of ensuring that the pharmaceutical industry continues to discover and develop new drugs. Innovation is a fragile process, and it can be weakened or thwarted by poor public policies. Heavy taxation, regulation or public vilification of pharmaceutical companies will reduce their incentives to invest in researching these vital

drugs, because shareholders will be uncertain of generating a return. If commercial companies are no longer able to prioritise and manage their own R&D spending unmolested by government, the consequences for global health will be tragic.

Furthermore, the public sector offers no panacea for activists who seek to wrest the ability to conduct R&D away from commercial enterprises and towards the public sector. The public sector's trophy cupboard of health R&D successes is almost empty, because governments lack both the technical skills and the ability to pick winning products that have rendered many pharmaceutical companies so commercially successful.

In the 1980s, the US Agency for International Development funded research into a vaccine for malaria, which absorbed $60 million and failed to achieve any of its goals. This failure is a neat illustration of the drawbacks to the public procurement of R&D. Because the researchers were operating to the demands of a public sector employer rather than the market, they gave out wildly optimistic statements about the progress of their work in order to ensure a continued supply of funds. Government-funded project directors also have an incentive to fund unpromising work – illustrated by the project leader's demand for further funds, despite the unpromising nature of his early work. Finally, because the recipients of government subsidies are paid before delivery, they remove incentives to properly conclude the research.

By seeking to derail the R&D capabilities of the pharmaceutical industry, exponents of the '10/90 gap' are in danger of creating a self-fulfilling prophesy. A global R&D treaty, in which the profits of pharmaceutical companies are heavily taxed and their intellectual property rights undermined, would be almost certain to have the unintended consequence of effectively turning off the tap of innovation that is essential to dealing with the world's changing health problems.

Notes

1 Drugs for Neglected Diseases Working Group, *Fatal Imbalance: The Crisis in Research and Development for Drugs for Neglected Diseases,* MSF, September 2001

2 Love J., Hubbard T., *An agenda for research and development. Meeting on the role of generics and local industry in attaining the Millennium Development Goals in pharmaceuticals and vaccines.* World Bank, Washington DC, June 2003

3 *Fatal imbalance,* 2001

4 Murray HW, et al, *Recent advances, tropical medicine,* BMJ Publishing, London, 2001: 490–94

5 Trouiller et al, *Drug development for neglected diseases: a deficient market and a public-health policy failure,* The Lancet, vol 359, June 22, 2002

6 Wirth, DF., *Survey for the Drugs for Neglected Diseases Working Group*, Switzerland, May 2001. [Online]. Original survey and letter available: www.accessmed-msf.org. Andra Brichacek, Top 50 Pharmaceutical Companies of 2000, Pharmaceutical Executive, April 2001. Available: http://www.pharmaportal.com/articles/pe/pe0401_06 2-82.pdf [2001, August 6].

7 World Health Report 2003, WHO.

8 IFPMA, Research and development for neglected diseases, Geneva, October 2004

9 WHO-IFPMA Round Table, *Working paper on priority infectious diseases requiring additional R&D*, July 2001

10 WHO, *World Health Report, 2002*

11 WHO, *World Health Report 2004*, Statistical Annex

12 WHO, *Removing obstacles to healthy development*, 1999

13 WHO, *World Health Report 2002*

14 WHO, *State of the world's vaccines and immunisation*, October 2002

15 WHO, *Removing obstacles to healthy development*, 1999

16 Bruce, N. et al, *The health Effects of indoor air pollution exposure in developing countries*, WHO, Geneva, 2002

17 WHO, *Global prevalence of vitamin A deficiency*, Micronutrient Deficiency Information System Working Paper No. 2, Geneva, 1995

18 WHO, *Vitamin A supplements: a guide to their use in the treatment and prevention of vitamin A deficiency and xerophthalmia*, Geneva, 1997

19 Jones, G., & Stetekee R.W et al, *How many child deaths can we prevent this year?* The Lancet, vol 362, 5 July 2004

20 Table figures come from *World Health Report 2002*, WHO

21 Table figures come from *World Health Report 2002*, WHO

22 Numbers of annual deaths occurring in developed and developing countries expressed as pro mil (1:1000) of total population of developed (1,354m) and developing (4,770m) countries. This allows a more relative estimation of disease burdens. Table adapted from WHO, The World Health Report, Statistical Annex.

23 Quoted on http://news.bbc.co.uk/1/hi/world/africa/3969693.stm, 31 October 2004

24 Table figures come from PhRMA, Medicines in Development Surveys 2003/2004

25 WHO, *Medicines Strategy Report 2002–2003*

26 Victora CG., et al, *Applying an equity lens to child health and mortality: more of the same is not enough*, Lancet, 2003; 362: 233–41

27 Black, RE., *Where and why are 10 million children dying every year?* The Lancet 2003; 361: 2226–34

28 WHO, *State of the world's vaccines and immunization*, October 2002

29 WHO, Medicines Strategy 2003

30 Attaran, A., *How Do Patents and Economic Policies Affect Access to Essential Medicines in Developing Countries*, Health Affairs 23:3, pp 155–166, May 2004

31 Europe Economics, *Analysis of the WHO Essential Drugs List*, unpublished study, 2003

32 European Commission, *Working Document on developing countries' duties and taxes on essential medicines used in the treatment of major communicable diseases*, European Commission, Directorate-General for Trade, 2003

33 Poor countries are not members of the WTO Pharmaceutical Agreement, a 22 member agreement, concluded during the Uruguay Round, which has led to the reciprocal elimination of tariffs (dubbed 'zero-for-zero') on approximately 7,000 products (European Commission, 2003 and 2002).

34 Levison, L. and Laing, R., *The hidden costs of essential medicines*, WHO, Essential Drugs Monitor, Issue 233, 2003.

35 European Commission, 2003. Applied customs rates were found for each of 27 HS numbers. To obtain and average customs rate per country, these numbers were arithmetically added without weighting them. The same process was used to calculate the average rates of VAT and other duties.

36 Table figures adapted from European Commission, 2003.

37 UNDP, *Human Development Report 2004*

38 Table figures adapted from UNDP *Human Development Report*, 2004

39 WHO, *Correspondence on human resources for health*, March 2004.

40 Easterlin, *Growth Triumphant: The Twenty-First Century in Historical Perspective,* Ann Arbor: University of Michigan Press, 1996

41 WHO, *Report on Infectious Diseases: Removing Obstacles to Healthy Development*, WHO 1999

About International Policy Network

International Policy Network (IPN) is a charity based in the UK, and a non-profit (501c3) organization in the US. It is a non-governmental, educational and non-partisan organization which relies on charitable donations from individuals, foundations and businesses to carry out its work. It accepts no money from government.

IPN aims to empower individuals and promote respect for people and property in order to eliminate poverty, improve human health and protect the environment. IPN promotes public awareness of the importance of this vision for all people, both rich and poor.

IPN seeks to achieve its vision by promoting the role of market institutions in certain key international policy debates: sustainable development, health, and globalisation and trade. IPN works with academics, think tanks, journalists and policymakers on every continent.

Specifically IPN

- Supports like-minded individuals and groups around the world with websites, small grants and advice

- Sponsors and co-ordinates conferences, workshops and seminars

- Works with experts to produce books, monographs and opinion articles for the media

- Co-ordinates the participation of experts at key international conferences

- Engages with and promotes our partners to the news media

Diseases of poverty and the 10/90 gap

Exponents of the so-called 10/90 gap claim that the current pharmaceutical R&D paradigm results in too many resources being invested in the diseases of the rich at the expense of the poor. They argue that nothing short of a fundamental redesign of the R&D paradigm will ensure the development of medicines that properly address the diseases of poverty.

However, the premise of this argument is both misleading and dangerous. Obsessive focus on so-called 'neglected diseases' threatens to distort priorities. The fact is that treatments already exist for the vast majority of the diseases of poverty. The problem is that poor people are unable to obtain these treatments because of obstructive and counterproductive government policies.

The reform of the pharmaceutical R&D paradigm along the lines envisaged by these activists would substantially weaken the incentives of pharmaceutical companies to continue investing in research and development, effectively turning off the tap of innovation that has so far provided the world with effective and vital medicines. The consequences would be dire for the health of people in both rich and poor countries alike.

International Policy Network