Public-private partnerships: an overview

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Summary
The development and marketing of medicines needed specifically to combat diseases of the developing world are commercially unattractive because the populations concerned are among the poorest on earth. Partnerships which bring together pharmaceutical companies, academics, not-for-profit organizations, philanthropists, governmental and inter-governmental agencies are an increasingly popular solution. These partnerships result in a complementarity of skills and resources that can accelerate the development and delivery of new medicines to those in need. Over the last 10 years or so, these public-private partnerships (PPPs) have grown significantly in number and diversity. However, they tend to cluster into two main groups: those dealing with product development (PD PPPs), and those concerned with improving the access of new medicines to target populations (Access PPPs). The Initiative on Public-Private Partnerships for Health was set up four years ago to monitor the performance of these new partnerships. After a series of studies of Access PPPs, it concluded that they provide significant benefits with very few side effects, particularly in the case of tropical diseases. © 2005 Published by Elsevier Ltd on behalf of Royal Society of Tropical Medicine and Hygiene.

1. Introduction

Infectious and parasitic diseases remain a major cause of death worldwide (WHO, 2004). The so-called ‘neglected diseases’ affect the very poor in particular and therefore ‘diseases that disproportionately affect the poor’ is perhaps a better description. In a vicious circle, poverty is a major cause of health inequality in developing countries, and ill-health perpetuates poverty. There are an estimated 11 million premature deaths per year in the world’s poorest populations, and 80% of these are due to infectious diseases (Gwatkin and Guillot, 2000). In the age of globalization, many people still lack access to essential medicines (Figure 1).

The UN Millennium Development Goals, adopted in September 2000, set targets for progress in
tackling diseases of the developing world. These were to halt and begin to reverse the incidence of HIV/AIDS, malaria and other major diseases by 2015.

At present, however, it is very doubtful that these targets can be achieved in most of the poorer countries. The problem is that the array of 'tools' currently available to meet the international targets on child mortality, HIV/AIDS, tuberculosis (TB) and malaria are inadequate for the poorer countries.

There are no vaccines against HIV infection or malaria and there is no vaccine to prevent the majority of TB cases (in adults). Existing diagnostic tools or therapies for most diseases disproportionately affecting the poor are old and/or difficult to use. First-generation vaccines against pneumococcal pneumonia may be too complex and expensive for use in developing countries. Vaccines against rotavirus diarrhoea are only just emerging. Other childhood killers lack prevention. Most drugs are threatened by increasing resistance.

In an ideal situation, products developed for global use move steadily along the research-development-access continuum. Research is translated into product concepts, these are developed into proven products and manufacturing takes place. The products go through regulatory approval to ensure consumer safety and are then introduced and used in well-functioning health systems.

The reality for the poor of the developing world is very different. Products developed for global use have a relatively slow introduction into poor countries, usually caused by lack of planning and high initial cost. Meanwhile, the development of products specifically needed to combat diseases disproportionately affecting the poor has been sorely neglected. Pharmaceutical companies are, after all, commercial concerns with shareholders to consider. New medicines are very expensive to develop. Poor populations do not, by definition, provide a good return on this investment.

The solution to this deadly conundrum is 'partnership'. Public-private partnership (PPP) brings together funders such as philanthropists and governmental and inter-governmental agencies with academics, industry and not-for-profit organizations.

Public-private collaborations are needed to tackle diseases of the developing world because no single sector — the for-profit private sector, the not-for-profit private sector or the government agencies of the public sector — has all the skills and resources needed to make an impact on its own. Independent efforts by the public sector or by non-governmental organizations (NGOs) have mostly failed. Public-private partnerships, however, result in a complementarity of skills and resources that can accelerate the discovery, development and delivery of new products to those in need.
Public-private partnerships

Figure 2

Trends in ‘partnering’.
2. Public-private partnerships — why now?

The 1990s saw the emergence of a number of trends conducive to the establishment of PPPs. A systematic analysis of the global burden of disease highlighted "diseases associated with poverty" and deficiencies in the tools to combat them. Pharmaceutical companies faced rising research and development (R&D) costs, consolidation and greater competitive pressures. This increased their aversion to commercially risky or unattractive projects. Vaccines increasingly became "orphan" products despite their importance, especially in developing countries. Meanwhile, the HIV/AIDS pandemic drew global attention to the need for greater action on the health needs of low and middle income countries. Last but not least, public sector and public interest organizations began to realise that they could achieve a positive health impact if they could find a way of tapping pharmaceutical industry skills and resources. These factors, coupled with the emergence of disease ‘champions’ (see below) in the right place at the right time, have driven the growth of PPPs.

The growth of PPPs has been helped by the establishment of global coordinating and financing mechanisms such as the Global Alliance for Vaccines and Immunization and the Vaccine Fund (GAVI/VF), Roll Back Malaria (RBM), the Stop TB Partnership and the Global Fund for AIDS, TB and Malaria. These create a significant ‘market’ by funding the uptake of new products.

Over the last 10 years or so, PPPs have grown significantly in number and diversity (Figure 2). The Initiative on Public-Private Partnerships for Health (IPPPP) was set up four years ago to undertake long-term monitoring of PPP performance with the aim of recommending best practices. The IPPPP is part of the Global Forum for Health Research, a small Swiss not-for-profit organization. The IPPPP is funded by the World Bank, the Rockefeller Foundation, the Gates Foundation and bilateral agencies.

3. Definition of a public-private partnership

Most PPPs comprise partners from three distinct spheres. These are (i) the public sector, essentially governmental agencies and those institutions at the international level that are controlled by governments, such as the WHO; (ii) the for-profit sector, which includes the pharmaceutical and biotech companies; and (iii) the civil society sector, which includes academia, non-profit making organizations such as NGOs and philanthropic institutions (Figure 3).

Public-private partnerships are not legally joint ventures in the business sense. Rather, they are joint ventures sharing a set of attributes, the most important of which is a shared objective. The motivations of the partners vary, as do their contributions and benefits they expect to receive in return. Public-private partnerships involve shared decision making and risk taking.
4. Public-private partnerships today

Today there are over 100 ventures involving pharmaceutical or other health sector companies that can be described as PPPs. They are concerned with diverse topics including research, global coordination and financing mechanisms, health system strengthening, public education, advocacy and regulation, quality and standards. The majority, however, tend to cluster into two main groups: those dealing with the development of drugs and vaccines, the so-called product development partnerships (PD PPPs), and those concerned with improving access to medicines (Access PPPs). A third small group, noted above, includes the global coordination and financing mechanisms (Table 1).

4.1. Public-private partnerships for product development

Public-private partnerships for the development of new products to combat diseases of the developing world began to emerge in the mid-1990s. There had, of course, been earlier sporadic collaboration on an ad hoc basis around individual candidate products between public sector agencies and pharmaceutical companies.

The new PD PPPs are different. Instead of taking a specific candidate product as their starting point, these new partnerships survey the field and then promote the parallel development of a range of different products. This ‘portfolio’ approach, borrowed from the pharmaceutical and venture capital fields, is designed to manage the risk of failure accompanying any individual project.

The first PD PPP addressing infectious diseases was the International AIDS Vaccine Initiative (IAVI), established in 1996. Some features of IAVI’s and Medicines for Malaria Venture’s (MMV) approach can be seen in the contraceptive field, around the mid-1990s (Widdus and White, 2004). The IAVI was the brainchild of Seth Berkley, a public health epidemiologist with experience of the early HIV/AIDS epidemic in Uganda. Berkley was then working at the Rockefeller Foundation. He realised that in order to meet a global health need on this scale both expertise and resources which may not exist within the PD PPPs themselves: e.g. specialized laboratory equipment, animal models or access to human populations at risk of the target disease. Public-private partnerships for product development, unlike large pharmaceutical companies, do not generally conduct all their activities “in house”. Instead they act as managers, bringing together the needed expertise and resources in collaborative project teams. These teams, drawn from pharmaceutical companies and other organizations, are contracted to carry out specified testing steps in...
Table 1  Diversity – the legal status of various partnerships addressing health problems

<table>
<thead>
<tr>
<th>Category by Principal Aim</th>
<th>Hosted In:</th>
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<tbody>
<tr>
<td></td>
<td>Independent</td>
<td>Public/International Agency</td>
</tr>
<tr>
<td>Knowledge generation/research</td>
<td>SHP</td>
<td>No holder</td>
</tr>
<tr>
<td>Product development</td>
<td>AAR, DNDI, FIND, GATB, ICRU, IDDR, IAP, IPH, Malaria, PGS</td>
<td>Artesunate, ENHY, JPMW, Lapdap®, MDP, PPD, SAD, TBI</td>
</tr>
<tr>
<td>Product access</td>
<td>CF, TTI</td>
<td>AAI, APD, GAEL, GAEL, GPEI, OCP, ORS, UNFPA/Industry, VVM, WPS, CoertmB, CYP at PATH, MDG (DNDI), GWEP, MaleneB, Mectizan®, MTCT-Plus, Merck, PluckyB, GSK-AMP, MNT, VBAR, VBAR</td>
</tr>
<tr>
<td>Global coordination &amp; financing mechanisms</td>
<td>GAIN, GFA, M, VP</td>
<td>CIV, GFV, GAIV, IRBM, SGAM, Stop TB, VISION 2020</td>
</tr>
<tr>
<td>Health system strengthening</td>
<td>AGM</td>
<td>GET 2020, IPAAA, MM</td>
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<tr>
<td>Public education &amp; advocacy</td>
<td>CCA, GCB</td>
<td>GFHW, HIN, IPCS</td>
</tr>
<tr>
<td>Regulation, quality &amp; standards</td>
<td>PSI, GRI</td>
<td>Anti-counterfeit drug initiative, ICM</td>
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4.2. Access public-private partnerships

These are partnerships addressing access to drugs in low to middle income countries. They are based on pharmaceutical industry donations or discounted pricing. Many are for tropical diseases and these are often embedded within larger collaborations, sometimes for the elimination of a particular disease.

Many of these access partnerships pre-date the emergence of the PD PPPs. It is not generally recognized how successful the Access PPPs have been so far. The oldest, the Mectizan® donation programme for onchocerciasis (river blindness) in West Africa, has reached 40 million people in the last decade. Meanwhile, GSK's donation of albendazole within the Global Alliance for the Elimination of Lymphatic Filariasis (GAELF) reached 80 million people in 2003 alone, through mass community treatment.

A series of studies of access partnerships undertaken by the IPPPH in Botswana, Sri Lanka, Uganda and Zambia in 2003–2004 (Caines and Lush, 2004) found that these PPPs have significant benefits with very few side effects, particularly in the case of tropical diseases. The studies concluded that pharmaceutical company involvement in tropical disease Access PPPs substantially improved drug availability in the four study countries.

In most cases, national programme managers dealt primarily with the WHO and had minimal contact with the participating pharmaceutical companies. No specific challenges arose from the involvement of the pharmaceutical companies. In fact, there were several instances of benefits beyond the donation or discounting of drugs, e.g. in contributions to capacity building.

Governments and clinicians welcomed the drug access PPPs. Without them, the countries studied would generally struggle to afford the drugs. The widely-held conclusion at country and global level was that these drug access PPPs have assisted the poor to obtain necessary drugs. The studies found no evidence of unreasonable conditionalities, impaired national ownership, distortion of national or district priorities, or unhelpful reallocation of human and financial resources at central, district or community levels.

However, the research showed that continued support by donors in the maintenance as well as the intensive phases of elimination/control is vital if resurgence of disease is to be avoided. Likewise, Access PPPs must ensure that their operations are integrated with the district health system within disease-endemic countries from the outset. Failure to do this resulted in the resurgence of African trypanosomiasis (sleeping sickness) in Uganda when project staff withdrew after control was achieved. In the case of donations or discounted pricing for access to HIV/AIDS drugs, where multiple players or programmes existed, there was a need for more coordination and more support to countries, particularly from international organizations, to reduce fragmentation and improve understanding of options.

5. Conclusions

Over the last 10 or 15 years PPPs have made significant progress in tackling diseases that disproportionately affect the poor.

The drug access PPPs, such as the Mectizan® donation programme for onchocerciasis in West Africa and the donation of albendazole within the GAELF, have already achieved, or are well on the way to achieving, significant public health impacts. They have helped the poor to access necessary drugs without distorting health priorities at national or local level.

Product development public-private partnerships, meanwhile, have made an impressive start since they began to emerge in the mid-1990s. There are now significantly more projects underway...
aimed at developing new drugs to combat diseases associated with poverty. What sort of public health impact today’s PD PPPs will eventually achieve, only time can tell. However, for millions of the world’s poorest people whose deadly afflictions have been ignored for so long, it is truly a great step in the right direction.

References


