Tackling the crisis of workforce shortages in the pharmaceutical sector

The pharmaceutical workforce is a vital part of the medicine supply system. Yet, its effectiveness in the health system has been hindered by insufficient numbers and skill mix to respond to population needs - especially as donor-funded programmes, such as those related to HIV/AIDS, TB and malaria, expand in the developing world. Pharmaceutical human resource challenges have to be addressed to improve availability and rational use of medicines, and hence ensure positive health outcomes.

It is no secret that countries around the world, particularly those in sub-Saharan Africa, are struggling with a severe shortage of health personnel. The 2006 World Health Report estimated health workforce shortages of crisis proportions in 57 countries, and this phenomenon has contributed to the ongoing, rampant burden of infectious diseases.

Despite this crisis, little mention has been made of the need for a robust pharmaceutical workforce to ensure safe, effective, efficient and timely distribution of medicines. Yet in 2008, the Taskforce on Millennium Development Goal (MDG) 8 reported availability of medicines at only 35% in public facilities. Clearly the existence of an adequate pharmaceutical cadre with the right skill mix has a role to play in overcoming this challenge to the MDGs. Pharmaceutical expertise is a critical element of the health workforce, bringing a discrete set of skills to health service delivery. The development, production, distribution and appropriate use of medicines, as well as the supportive functions of regulation, research and training are essential to a strong health system. All of these activities require the participation of competent pharmaceutical professionals.

As stated, human resources for pharmaceuticals are often lacking. In the United Republic of Tanzania, for example, there are 29% as many pharmaceutical professionals as there are pharmacies, leaving 71% of the country’s pharmacies staffed by workers without accredited pharmaceutical training. Sudan has also reported a 62% deficit in the availability of pharmacists and a 92% deficit of other pharmacy specialists. Many other countries are in a similar situation. There are simply not enough pharmaceutical professionals available. And the consequences for public health are dire.

MANAGING INTERNATIONAL AID

Between 2002 and 2010, Zambia was the recipient of more than US$340 million in grants from the Global Fund to Fight AIDS, Tuberculosis and Malaria. As is to be expected with a massive effort to eradicate infectious disease, a large part of these funds was used to acquire medicines. But the impact of this effort was diminished by the absence of sufficient trained pharmaceutical professionals to ensure safe and efficacious distribution of these treatments.

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Where is the pharmaceutical workforce?
Photo: Helen Tata, WHO

The Key Challenges

The current human resources capacity of four African countries has been assessed, leading to valuable insight on the common gaps to a fully functioning medicines supply system.

<table>
<thead>
<tr>
<th>Country</th>
<th>Pharmacists per 10 000 pop</th>
<th>Pharmaceutical Technicians</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghana</td>
<td>0.78</td>
<td>0.47</td>
</tr>
<tr>
<td>Nigeria</td>
<td>0.93</td>
<td>0.08</td>
</tr>
<tr>
<td>Sudan</td>
<td>1.01</td>
<td>0</td>
</tr>
<tr>
<td>Tanzania</td>
<td>0.16</td>
<td>0.11</td>
</tr>
</tbody>
</table>

Lack of supply

There are simply not enough pharmaceutical experts to go around. Our case studies revealed very low ratios of pharmaceutical personnel per 10 000 inhabitants. These do not even take into consideration the difference in density between urban and rural areas, which is often pronounced.

Limited training capacity

<table>
<thead>
<tr>
<th>Country</th>
<th>Dip. Programme</th>
<th>Applicants</th>
<th>Enrolment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghana</td>
<td>B. Pharm</td>
<td>600</td>
<td>240</td>
</tr>
<tr>
<td></td>
<td>Pharm. Tech</td>
<td>300</td>
<td>100</td>
</tr>
<tr>
<td>Nigeria</td>
<td>B. Pharm</td>
<td>7863</td>
<td>901</td>
</tr>
<tr>
<td></td>
<td>Pharm. Tech</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sudan</td>
<td>B. Pharm</td>
<td>Not known</td>
<td>950</td>
</tr>
<tr>
<td></td>
<td>Pharm. Tech</td>
<td>Not known</td>
<td>60</td>
</tr>
<tr>
<td>Tanzania</td>
<td>B. Pharm</td>
<td>517</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>Pharm. Tech</td>
<td>806</td>
<td>64</td>
</tr>
</tbody>
</table>

Even in countries where pharmaceutical education programmes exist, schools are often unable to accommodate all deserving applicants. Nigeria only admits 11% of its Bachelor of Pharmacy applicants, which is particularly alarming because there is less than one pharmacist for every 10 000 Nigerians. While this is the most extreme example, in all of the case study countries less than half of applicants to pharmaceutical training opportunities are accepted.

Money talks

Most private pharmacies are in urban areas and attract more pharmaceutical personnel. Very few professionals in the sector remain in the public facilities that extend into the hinterlands and even fewer work for NGOs and faith-based services (except in cases where large multilateral NGOs are operating within a country). This is probably because of the difference in remuneration among sectors. In the United Republic of Tanzania, pharmacists employed by manufacturers, international NGOs and academia had an earning potential roughly 100 to 150% above that of pharmacists in the public sector. In Nigeria, the most common reason cited for moving to another workplace was an expected salary increase.

Proportion of pharmacists in the private sector:

- Ghana: 75%
- Nigeria: 64%
- Sudan: 73%
- Tanzania: 38%

You can’t fix what you can’t see

The lack of comprehensive data on pharmaceutical personnel and related shortages means that capacity issues simply remain undetected. The result is a gap in national policy-making such that no action is taken to correct the human resource crisis. This is where we can help.
Making the Case for Action: United Republic of Tanzania

Support from the Ministry of Health allowed the United Republic of Tanzania to be one of the pilot countries in the WHO Pharmaceutical Workforce programme. In 2009, the country began work by collecting information from the Pharmacy Council and from universities. Human resource managers and other senior officials across the health sector were interviewed about their personnel using various questionnaires. Individual pharmacists working in the facilities visited were also interviewed to assess their job satisfaction.

The study found that the United Republic of Tanzania continues to suffer from a nationwide lack of pharmaceutical expertise. The overall availability of pharmacists was consistently insufficient and unequally distributed, with a mean of 0.16 pharmacists per 10,000 population across the country, and with a ratio as low as 0.02 in some regions.

On average, for every 10,000 Tanzanians, there are only 0.16 pharmacists and 0.11 pharmaceutical technicians.

The primary hurdle to expanding the pharmaceutical workforce is the lack of training opportunities. Only two schools in the country offer a Bachelor of Pharmacy degree, with a low rate of enrolment, and there is only one postgraduate programme. Financial support is a huge challenge for the existing programmes. The School of Pharmacy at Muhimbili University of Health and Allied Sciences, a public institution supported by the Ministry of Health, employs half of the country’s qualified lecturers in pharmacy. Much of the financing requested by the School was not provided, leaving laboratories and classrooms ill-equipped.

WHO Action Plan for Strengthening the Pharmaceutical Workforce

In line with the WHO Medicines Strategy 2008-2013 recognizing the importance of pharmaceutical human resource development and to enhance workforce capacity for medicines supply, the WHO Department of Essential Medicines and Pharmaceutical Policies implemented a pilot programme in 2009. The programme was launched with the support of the European Commission and with technical input from the WHO Department for Human Resources for Health and the International Pharmaceutical Federation. Four countries (Ghana, Nigeria, Sudan and the United Republic of Tanzania) have piloted the three-phase approach and are now in different stages of development. Another six countries will start the programme in 2011.
Phase I: Assessment

The first step is to collect evidence for policy development. In collaboration with the ministries of health in Ghana, Nigeria, Sudan and the United Republic of Tanzania, the programme sought to quantify the pharmaceutical workforce serving in both the public and the private sectors. A set of tools have been piloted and finalized to assess workforce availability, development and attrition trends, human resource management policies and job satisfaction. Issues such as gender and urban-rural disparity were also taken into account. Some results of the pilot tests are presented in the section on key challenges.

Phase II: Policy Guidance

After baseline information is collected, the data are analysed and shared with key stakeholders. Stakeholder consultations are held for the development of a national pharmaceutical human resources framework. The framework is developed around the following pharmaceutical activities:

- Planning
- Development
- Management

Relevant stakeholders involved in these areas are also identified. The framework informs the development of a pharmaceutical human resources plan to be integrated into a national human resources plan for health.

Phase III: Policy Implementation

The plans developed in phase II receive budget allocations and key responsibilities are defined within the country. WHO then provides technical assistance to implement the plans, supporting such activities as a needs-based review of the pharmacy curriculum, and the establishment of electronic systems for registration and licensing of pharmacists.

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The United Republic of Tanzania assessment report is available at: http://apps.who.int/medicinedocs/documents/s17397e/s17397e.pdf

The Ghana assessment report is available at: http://www.who.int/medicines/areas/coordination/ghana_assessment_hr_pharmaceutical_services.pdf

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