These countries are also consolidating their bottlenecks, strategies, expected health outcomes and additional fund- ing needs into ‘investment cases’ to leverage political and financial support for their national plans.

**Strengthen health systems at the district level**

Strengthening health systems remains a daunting and complex task, especially in many countries that are making insufficient progress towards the health-related MDGs. The decentralization of health systems and an increasing focus on the district level can be seen as an effective vehicle for delivering primary health care to marginalized children and families at the community level.38 But decentralization is not without risks. It can have unintended consequences, such as deepening existing inequalities in communities, based on factors such as poverty, gender, language and ethnicity.39 Furthermore, even where decentralization efforts have been successful, experience suggests that transforming an administrative district into a functional health system takes time. In 2000, for example, only 13 of Niger’s district hospitals were equipped to perform a Caesarean section. Only 17 of the 53 district hospitals in Burkina Faso had appropriate facilities 10 years later. In Ghana, after districts had been established; moreover, only 5 of those 17 hospitals had the three doctors required to ensure continuity of care through- out the year.40

Nevertheless, the experience of decentralization during the past decade suggests that, on balance, health dis- tricts remain a rational way for governments to roll out primary health care through networks of health cen- tres, family practices or equivalent decentralized structures, backed by referral hospitals. Where districts have become stable and viable structures, they have demonstrated notable results, even under situations of complex emergencies, as in the Democratic Republic of the Congo and Guinea. Similarly, Mali has broadened its health-centre networks and services for mothers and children.41 In countries where decen- tralization has been accompanied by reforms of public administration, there has been significant progress within a few years. Examples include Mozambique, Rwanda and Uganda, all countries that experienced many years of conflict and economic col- lapse but have since made significant progress in reforming government institutions and performance, includ- ing their health systems.22

In recent decades, evidence on the performance of district health systems has grown. However, the evidence base is still relatively small, the study coverage is inconsistent, and the approaches advocated by practitioners do not enjoy the same level of consensus and visibility within the scientific community as those on essential interventions. Work on the district approach to delivering the continuum of mater- nal, newborn and child health care requires a new impetus and more rigorous systematization. In particu- lar, a key focus of research should be on the reorientation of national health systems to create the condi- tions in which district health and nutrition systems providing a contin-uum of care can thrive. Systematic analysis and case studies from coun-tries that have tried this approach

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**The urgent need to address the health worker crisis in Africa**

The lack of adequate human resources represents a major barrier to scaling up integrated approaches to maternal, newborn and child survival, health and nutrition at the community level. The current experience sug- gests that limited effectiveness, high staff turnover and inadequate supervision characterize most programmes in developing countries. The massive migration of health professionals, the impact of AIDS, which in some high-prevalence countries has decimated the workforce, as well as the presence of armed conflict, serve to under- mine the national health workforce in many developing countries. The migration of skilled health providers is particularly severe in sub-Saharan Africa.

**Health workers at the district and community levels**

The number of migrant health workers is not known, but in particular nurses and doctors, is a significant determinant of variations in rates of infant, under-five and maternal mortality across countries. For example, research reveals that the prospects for achieving 80 per cent coverage of measles immunization and skilled attendants at birth are greatly enhanced wherever the health worker density exceeds 2.5 per 1,000 inhabitants. Yet many developing countries, particularly in sub-Saharan Africa, face overwhelming shortages of health personnel.

The migration of skilled health professionals is a cause of grave concern in many developing countries. A point of particular alarm is the massive migration of health profes- sionals from poor countries to rich countries (the so-called ‘brain drain’). But other forms of movements of health pro- fessionals within a country – from rural areas to zones of conurbation, from the public domain to the private sector, and from the health sector to other sectors – are also limiting the pool of skilled health professionals involved in primary health care in developing countries.

The reasons doctors and nurses leave the health sector alto- gether appear to be similar in places as diverse as the Pacific Islands and the European Union. They include low remunera- tion, inflexible hours with many extra duties, lack of contin- uing educational opportunities, difficult working conditions, demanding patients and shortages of supplies and equip- ment. Recent statistics indicate, for example, that half of medical school graduates from Ghana emigrate within 4.5 years of graduation, and 75 per cent leave within a decade. In South Africa, more than 300 specialist training places every month – many never to return. The main destinations for migrant health workers are Europe and North America. This is particularly true for the United Kingdom, where one third of the health workforce originate from other countries. Research suggests that the density of health workers (doctors, nurses, midwives) is more than 10 times higher in Europe and North America than in sub-Saharan Africa.

The negative impact of migration on the delivery of health services in developing countries is often severe, since this movement of human capital affects the most highly trained professionals, in whom the government has invested heav- ily through training and professional development.

In addition to these general causes, the AIDS epidemic and armed conflict have also been powerful causes underlying the loss of health personnel in sub-Saharan Africa in particular.

In situations of conflict and post-conflict reconstruction, qualified health providers are vital to provide general and specialized services to vulnerable populations that may have been displaced and injured as a result of the strife. However, in many conflict-affected countries years and sometimes decades of conflict have led to an acute shortage of trained health-care personnel.

To address these shortages of skilled health personnel, at least in the short to medium term, national health systems must build incentives for practising health care at home. While this remains an ongoing challenge, a number of countries have been successful in recruiting and retaining health workers, including in rural areas, where shortages are often most severe. Incentive packages to retain health work- ers or reverse migration are being devised to address the crisis. One such example is taking place in Mali, where the Ministry of Health encourages newly graduated doctors to serve in rural areas by offering them training, accommoda- tion, equipment and transport if needed.

Training that is focused on local conditions can also help limit workforce attrition. Longstanding efforts to expand the numbers of health workers in rural areas suggest that train- ing local workers – in local languages and in skills relevant to local conditions – facilitates retention. Such approaches to training often lead to credentials that do not have inter- national recognition, which further limits migration. Success, however, is contingent on providing incentives and support at the local level.

There is a growing concern that affluent countries are ben- efitting from the brain drain at Africa’s expense. As a result, there has been a growing movement calling for an end to the recruitment of health workers from Africa, or, if that proves unrealistic, as is likely to be the case, to conduct recruitment only in a way that is mutually beneficial. In the past five years, about a dozen international instruments have emerged from national authorities, professional asso- ciations and international bodies that have set norms for behaviour among the key stakeholders involved in the international recruitment of health workers, and similar concerns have been the focus of bilateral agreements.

See References, page 108.