

How can research contribute to better global health?

The poorest part of the world's population must gain better access to existing knowledge, vaccines, diagnostic procedures and treatment. At the same time, new vaccines, medication and improved health services must be developed for those who carry the greatest disease burden globally. An increased focus on global health research will be in keeping with national and international prioritizations and commitments and will contribute knowledge that can help to shape Norwegian policies and involvement in international health initiatives.

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Research has promoted a number of innovations in global health. Vaccines have been developed against many infectious diseases, and this represents one of the most cost-effective interventions for better health. Vaccination eliminated smallpox and has almost eliminated poliomyelitis. The number of deaths from measles was reduced by 78 % in the period from 2000 to 2008 as a result of improved routine immunization and regular vaccination campaigns. The introduction of vaccines against pneumonia (pneumococcal vaccine) and diarrhoea (rotavirus vaccine) are together expected to save a further one million lives annually in the poorest countries (1).

Other important research contributions are the development of new and improved methods for the prevention, diagnosis and treatment of AIDS, tuberculosis, malaria and other tropical infectious diseases – e.g. medication for reducing the risk of mother-to-child transmission of HIV infection, insecticide-treated mosquito nets and artemisinin-combination therapies (ACT) for malaria (2–4). Another example is the drug

misoprostol. It is cheap, reduces postpartum haemorrhaging effectively and can be administered by non-professionals (5).

High-cost basic and clinical research targeted at developing new products is primarily conducted by large research institutions, laboratories and the pharmaceutical industry in high-income countries with a focus on national priorities. A range of partnerships within product development – Product Development Partnerships (PDP) – are instrumental in developing products aimed at treating diseases and health problems in low- and middle-income countries. Despite

«Despite the fact that the major part of the global disease burden rests on the poorest countries, only a small proportion of global health research resources have been targeted at their health problems»

the large disease burden, these countries do not constitute a profitable market because of low purchasing power. Another article in the journal (6) discusses how the development of new medication for such diseases can be promoted. But good basic and clinical research and new products are not sufficient to improve health conditions worldwide.

From knowledge to practice

A number of simple and inexpensive measures that clinical studies have shown to be

effective are not available to large parts of the world's population. Child mortality could have been reduced considerably if a larger number of vulnerable groups and patients had had access to relatively simple measures such as insecticide-treated mosquito nets, effective anti-malaria treatment or antibiotics for the treatment of serious infections (7).

Chronic non-infectious diseases, including cardiovascular conditions, cancer, chronic respiratory diseases and diabetes mellitus type 2, are the prime cause of death (60 %) and morbidity on a global basis. A total of 80 % of deaths worldwide and 44 % of the cases of premature death attributed to these conditions take place in low- and middle-income countries. Up to 80 % of premature deaths due to heart disease, strokes and diabetes can be prevented by lifestyle interventions and use of medication (8). Preventive programmes exist but research that sets the programmes in a local context is needed.

Studies have shown that lay people can play a role when it comes to promoting vaccination and breastfeeding, and can thus contribute to key health services where trained health professionals are in short supply (9).

A South African study shows that cooperation between international and locally-based research communities in the field of obstetrics and gynaecology promoted active use of research results and evidence based practice (10).

Research-based knowledge of how measures can be adapted to local resources is required. The health authorities in low- and middle-income countries need more knowledge about how the health services can be made more accessible and effective – based on research into the organization of health systems, the implementation of health measures and the health services, including economic assessments. Moreover, the necessary research competence is needed to monitor and evaluate the effects of health initiatives.

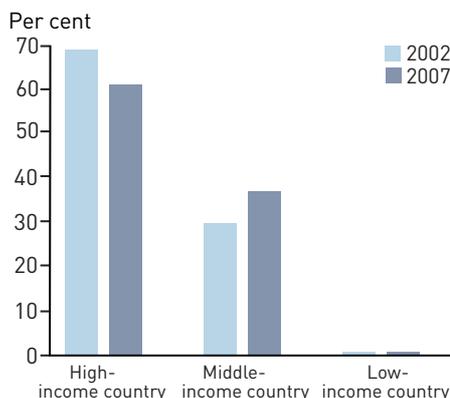
International recommendations and initiatives

Though the poorest countries bear the major part of the global disease burden, only a small proportion of global health research resources is used to address their health problems. In 1990 the Commission on Health Research for Development estimated that less than 10% of health research resources internationally was targeted at 90% of the global disease burden, which for the most part affects the poorest people – the «10/90 Gap». It was recommended that a minimum of 5% of development assistance programmes and projects should be earmarked for research, and that at least 2% of the health budgets in developing countries should be devoted to national health research, with priority being given to the country's own health problems (11).

There is now broad international agreement on strengthening research initiatives within global health, particularly regarding health system research (12–16). WHO also recommends greater efforts to introduce measures that can promote the transfer of research-based knowledge to policy practices – «knowledge translation». During the last decade, research funding for global health problems has risen substantially, partly as a result of the UN Millennium Development Goals and a number of large international initiatives such as the Global Fund to Fight AIDS, Tuberculosis and Malaria and the Global Alliance for Vaccines and Immunization (GAVI).

Strengthen research capacity locally

In order to achieve a sustainable improvement in health conditions in low- and middle-income countries it is essential that the countries themselves develop their research capacity and carry out their own health research. Globally both the number of researchers and the total investments in research are growing. The percentage of researchers in middle-income countries has increased somewhat in the period from 2002 to 2007, while no similar growth has



Figur 1 Percentage distribution of researchers in high-income, middle-income and low-income countries in 2002 and 2007. Based on data from UNESCO (17)

been recorded in low-income countries (fig 1). UNESCO has estimated that the investment of low-income countries in R&D only constitutes 0.1% of global research investments and that researchers in these countries amount to 0.5% of the total number of researchers worldwide (17).

Competence and capacity-building are essential and important initiatives in the years ahead, and there are a number of organizations and stakeholders. In partnership with European and African researchers, the European and Developing Countries Clinical Trials Partnership (EDCTP) will, through partnership between European and African researchers, contribute to the development of new drugs and vaccines as well as capacity building related to HIV, tuberculosis and malaria. Capacity building through long-term research cooperation in the field of public health sciences is another key measure to improve health in low-income countries. Such health gains are difficult to measure but capacity building enables health professionals and researchers to evaluate the current level of knowledge, to measure the impacts of preventive initiatives and to adapt the knowledge base so as to improve health policies.

A 16-year long cooperation in research and higher education between the University of Oslo and Palestinian institutions has resulted in the establishment of a centre for general epidemiology at Birzeit University in Ramallah, and a number of researchers have been educated at the master's and doctoral degree levels (18).

The Norwegian Programme for Development, Research and Education (NUFU), Norad's Programme for Master Studies (NOMA) and the Quota Programme, which is a national scholarship programme for master's and PhD students from developing countries, have promoted research, education, capacity-building and institution development in low- and middle-income countries also in the field of health.

Strengthen Norwegian research capacity

The proportion of Norwegian research funding that was devoted to poverty-related global health research was estimated in 2003 as being approximately 5% (19). Through the Programme for Global Health and Vaccination Research (GLOBVAC) at the Research Council of Norway (www.rcn.no/globvac) almost 60 research projects have been financed in the period from 2004 to 2011, and a ten year extension of this initiative is planned. The programme funds Norwegian research environments, often with activities in low- and middle-income countries and in cooperation with leading international research environments. The Norwegian Forum for Global Health Research (www.globalhealth.no) is

a network of health researchers and institutions that have helped to highlight the need for more global health research and to improve the coordination between Norwegian health research environments.

The necessity of strengthening Norwegian efforts in the field of global health research can be justified from the perspective of development assistance – we have a co-responsibility to contribute to efforts to diminish the large proportion of global health problems borne by poor countries (20). This entails greater efforts in connection with diseases and health problems that are often neglected, which affect the weakest and in which there is a lack of research. However, at the same time this can be justified from a broader perspective – international research cooperation is of mutual benefit in the form of increased knowledge and competence. In this respect research can enable Norway to acquire stronger evidence-based experience in its international health policies. At the same time internationalization of research is important to strengthen the quality and relevance of Norwegian research and to gain access to research conducted outside Norway.

The Ministry of Education and Research, the Ministry of Health and Care Services and the Ministry of Foreign Affairs provide funding for global health research through budget allocations and priority guidelines for educational and research institutions, Regional Health Authorities and through contributions to international organizations and initiatives. Viewed in light of the fact that allocations of almost NOK 900 million of the 2010 development aid budget were unused, it is gratifying that the Prime Minister has now announced that he will increase allocations to health-related development assistance (21). We in Norway can play a key role by building up our own research capacity and not least by being an attractive international partner for research cooperation contributing to capacity-building in low- and middle-income countries.

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