

# Programme plan

Research for sustainable improvements in health  
in low- and middle-income countries

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Programme  
Global Health and Vaccination Research – GLOBVAC

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## **1. Summary**

**Globally, less than 10% of the public and private expenditure on health research is devoted to the health problems in developing countries that are responsible for 90% of the global health problems. In Norway this proportion was until recently estimated to be only 5%. A research programme in global health and vaccination research (GLOBVAC) has been established at the Research Council of Norway, with an overall aim of strengthening and expanding research that can contribute to sustainable improvements in health in low- and middle-income countries. This will be achieved through i) developing knowledge and tools to combat the major disease burden in these countries; ii) developing and strengthening of sustainable Norwegian public and private research groups and institutions; iii) developing and strengthening of international collaboration; iv) developing and strengthening of partnerships with research groups and institutions in low- and middle-income countries to secure capacity building. This programme currently (2007) has annual budgets of 15 million NOK for global health research and 50 million NOK for vaccination research, respectively. This important increase in funding, although still a relatively modest contribution, to global health and vaccination research in Norway provides an opportunity to building Norwegian research expertise in this field that is very timely and in line with international efforts. Continued and increased funding to global health research through the Research Council of Norway and other institutions, beyond the current time frame of the GLOBVAC programme and in accordance with the government's commitment to a substantial investment in vaccination research until 2015, is needed to ensure sustainability for this type of research in Norway and in particular for the partners in low- and middle- income countries.**

## 2. Background

### 2.1 *The need for global health and vaccination research*

#### **The global burden of disease**

The major part of the global burden of disease affects marginalised populations in low- and middle-income countries<sup>1</sup> who experience excessive morbidity, disability and mortality due to a number of infectious and non-infectious diseases. Annually an estimated 10.5 million children < 5 years old die from diseases that are largely preventable and that are relatively minor health problems in high income countries. A wide range of poverty-related health problems remain prevalent, such as respiratory and diarrhoeal diseases, malnutrition, HIV/AIDS, tuberculosis, malaria, and maternal and perinatal health problems<sup>2</sup>. A number of diseases are neglected since they are largely absent in the developed world.

Most diseases responsible for the large disease burden in low- and middle-income countries are related to poverty, where poverty can both be the cause and consequence of disease in a vicious cycle. First, poverty might be a cause of disease, as poor living conditions and lack of access to preventive measures and health care contribute to poor people being more likely to acquire diseases and subsequently, not receiving proper diagnosis and treatment. Second, poverty might be a consequence of disease, since illness and disability can have a series of consequences for working ability, education and economic growth.

#### **Global health and vaccination research**

Globally, less than 10% of the public and private expenditure on health research is devoted to the health problems in developing countries that are responsible for 90% of the global health problems. This is often referred to as the 10/90 gap<sup>3</sup>. Until recently, only 5% of the Norwegian health research funds were directed towards diseases and health

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<sup>1</sup> World Bank: Country groups by income, <http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,,contentMDK:20421402~pagePK:64133150~piPK:64133175~theSitePK:239419,00.html>

<sup>2</sup> WHO: Global burden of disease project, <http://www.who.int/healthinfo/bod/en/index.html>

<sup>3</sup> Global Forum for Health Research (2004): The 10/90 report on health research 2003-2004, Geneva: Global Forum for Health Research

problems in developing countries<sup>4</sup>. It was estimated in 2003 that Norway has spent NOK 70 - 90 million annually on global health research in the university sector.<sup>5</sup>

Global health research can be defined as research aiming at improving health and health care for marginalised populations in low- and middle-income countries. This includes epidemiological studies, and the development and evaluation of new methods for prevention, diagnosis, treatment and care and more efficient and equitable use of existing methods.

Vaccination research, although fitting under the above definition of global health research, can be more specifically defined as research aiming at providing existing and improved vaccines for marginalized populations, especially children, in low- and middle-income countries. This includes studies of the disease burden, the development and evaluation of new or improved vaccines, implementation of vaccination strategies, and studies to measure the costs and outcomes of such strategies.

### **Imperatives for global health and vaccination research**

There are several reasons for why research efforts in global health and vaccination should be strengthened and expanded:

#### *Humanitarian / moral imperative*

It is morally unacceptable that health problems responsible for the major burden of disease globally receive only a small proportion of the health research funding. Such research can contribute to better implementation of existing preventive, diagnostic and treatment measures, and the development of new measures, and ultimately save millions of lives.

#### *Economic imperative*

The rates of economic return from investment in health and health research are often multiple of the rates of return from public investment in other sectors of the economy. Improved health in developing countries will lead to increased ability to attend school, work, give care, and hence, lead to improved personal and national economies.

#### *Economic/ethical imperative*

Global health and vaccination research is important to ensure that interventions targeted at poverty-related diseases are based on solid evidence, so that the resources available to fund these measures are used effectively, ethically and equitably.

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<sup>4</sup> The Research Council of Norway estimated that in Norway only approximately 5% of the funds for health research were directed to research on diseases and health problems of developing countries.

<sup>5</sup> *Global helseforskning: Tid for å styrke norsk satsing* (2003) Report from a working group appointed by the Ministry of Health, Ministry of Education and Research and Ministry of Foreign Affairs.

### *Capacity building and sustainability*

Global health and vaccination research with partners in low- and middle-income countries should result in capacity building to obtain sustainable improvements in health. One should especially ensure that intellectual capacity is not drained from these countries (“brain-drain”).

### *Prevention (epidemiologic imperative)*

Evidence-based global health research is important to prevent spread of existing and emerging diseases to new areas.

## **Incentives for global health and vaccination research in Norway**

In addition to the incentives for strengthening global health and vaccination research listed above, a number of incentives are of specific importance for Norway:

### *International development should be based on knowledge*

Norway’s international development policy has increasingly focused on measures to reduce poverty and to improve health and education for marginalised populations in low- and middle-income countries. With 0.97% of Gross National Income (GNI) being spent on international development assistance, Norway is a highly esteemed actor on the global arena on these issues. International development should be based on solid knowledge about the effectiveness, costs, and potential side-effects of different interventions and their implementation to ensure the best possible outcome and use of funding.

### *Protect own population from emerging and recurrent infectious diseases*

Research capacity and competence in the field of infectious diseases is important for Norway’s ability to respond to the threat of emerging and recurrent infectious diseases.

### *Research niche with competitive advantage*

Despite the huge challenges and scientific problems that need to be addressed within global health, the investments in this area have previously been limited. Recently, however, there has been an increased focus on global health problems internationally which has attracted new funding. Therefore, building Norwegian research expertise in the field of global health research, including vaccination research, is very timely and in line with international efforts.

## **2.2 Norway’s commitments to global health and vaccination research**

### **The United Nations Millennium Development Goals (MDGs)**

Norway is strongly committed to the United Nation’s millennium development goals (MDGs). All MDGs are relevant for populations afflicted by poverty, and hence, also for poverty-related diseases. The MDGs 4, 5 and 6 address health specifically through targets of reducing the children under-five mortality rate by two thirds between 1990 and 2015 (MDG 4), reducing the maternal mortality ratio by three quarters between 1990 and 2015 (MDG 5), and have halted and begun to reverse the spread of HIV/AIDS, the incidence of malaria, tuberculosis and other major diseases by 2015 (MDG 6).

Increased research efforts, especially on health systems and implementation of interventions, are needed to meet these MDGs. Further strengthening and expansion of the research capacity in Norway and partner countries to meet the long term global health challenges are needed both in basic and applied research.

### **The Global Alliance for Vaccines and Immunization (GAVI)**

Norway has shown a particular commitment and leadership towards meeting MDG 4 by supporting childhood immunization<sup>6</sup>. In 2007 the government will spend 800 mill. NOK on vaccination, of which 500 mill. NOK is allocated to the Global Alliance for Vaccines and Immunization (GAVI). GAVI is a public-private partnership (PPP) with the goal to save children's lives and protect peoples' health by increasing access to immunization in poor countries. This includes 1) strengthening of routine immunization services, 2) increasing the use of underused vaccines and 3) accelerating the development of and access to new priority vaccines and immunisation-related technologies. Norway has emphasized that GAVI should not only be a supplier of vaccines, but should also promote the building of health systems.

### **Norwegian-Indian bilateral collaboration in vaccination research**

A Norwegian-Indian bilateral collaboration has been initiated on vaccine and vaccination research and development, including both human and veterinary vaccines<sup>7</sup>. The collaboration on human vaccination falls naturally under the GLOBVAC programme. The collaboration should strengthen vaccine related research and development in Norway and India and foster innovation, problem solving and global commitment. Potential synergy effects between Norwegian and Indian research areas should be explored, such as the role of India as an emerging producer of medicines including vaccines. The collaboration is further intended to create platforms for the private sector in both countries to exploit markets in these countries and globally. The collaboration has resulted in joint research projects with financial contributions from the two countries.

### **The European and Developing Countries Clinical Trials Partnership (EDCTP)**

The European and Developing Countries Clinical Trials Partnership (EDCTP) intends through European research integration and in partnership with sub-Saharan African countries, to develop new clinical interventions to combat HIV/AIDS, tuberculosis and malaria. The EDCTP focuses on accelerating the development of new or improved drugs and vaccines, especially through phase II and III clinical trials. Norway is one of 16 European member states and has contributed with organizational and scientific resources to EDCTP. Currently the EDCTP has committed €200 million with the requirement of a similar amount of co-funding from the member states.

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<sup>6</sup> Stoltenberg J: Our Children: the key to our common future. Lancet, 368, 1042-1044, 2006.

<sup>7</sup> Roadmap: Indo-Norwegian collaboration in vaccination research, 2006



### **Other global funds and partnerships**

Norway supports many international initiatives established to fight poverty and poverty-related diseases. Current contributions to global health research includes: research programmes through the World Health Organization (WHO), the World Bank, the United Nations Development Programme (UNDP), the United Nations Children's Fund (UNICEF), the Global Fund to fight AIDS, Tuberculosis and Malaria (GFATM), the Bill and Melinda Gates Foundation, and the International Partnership on Microbicides (IPM). Further, Norway contributes to vaccination research through the International AIDS Vaccine Initiative (IAVI).

### **Norwegian contributions to global health and vaccination research**

A majority of global health research in Norway is conducted by the universities, in particular at the University of Bergen and University of Oslo. Norway has few and relatively small research institutions in the field of global health research (Appendix), and few institutions in Norway have global health research as a strategic priority. Several research activities are therefore fragmented without ensuring the necessary long-term sustainability. Norwegian global health and vaccination research is funded by a number of governmental bodies (Appendix).

### **3. The programme for global health and vaccination research (GLOBVAC)**

Investments in global health and vaccination research through Norwegian institutions have not matched the high international profile and commitments described above. The establishment of the Programme for Global Health and Vaccination Research (GLOBVAC) under the Research Council of Norway may contribute to meet the Government's Action Plan for reducing poverty<sup>8</sup>, and the needs for increasing the investments in global health research to reduce the 5/90 gap<sup>9</sup> and in vaccination research to meet the MDG 4 in particular.

The programme for global health and vaccination research has two subprogrammes, one on global health research, and one on vaccination research. The subprogramme on global health research is a continuation of the programme on global health research (GLOBHEL) that was established under the Research Council of Norway in 2003 to contribute to scaling up the research activities in this area. The funding for global health research has increased from 3 mill. NOK in 2003 to 15 mill. NOK in 2007. The subprogramme on vaccination research resulted from the Prime Minister's announcement in February 2006 of allocating 50 mill. NOK annually from 2006 to 2015 to strengthen vaccination research as part of Norway's particular commitment to meet the MDG 4. In the revised budget of 2006, 50 mill. NOK was reallocated from the GAVI funding to vaccination research under the new programme for global health and vaccination research (GLOBVAC) at the Research Council of Norway.

GLOBVAC represents an important increase in funding, although still a relatively modest contribution, to global health and vaccination research in Norway, which can contribute to initiating and building Norwegian research expertise in this field. Continued and increased funding to global health research through the Research Council of Norway and other institutions, beyond the current time frame of the GLOBVAC programme (2011) and in accordance with the government's commitment to a substantial investment in vaccination research until 2015, is needed to ensure sustainability for this type of research in Norway and in particular for the partners in low- and middle- income countries.

#### **3.1 GLOBVAC - one programme with two subprogrammes**

The new Programme for Global Health and Vaccination Research (GLOBVAC) is located under Department for Global Issues, Division for Strategic Priorities at the Research Council of Norway. The programme consists of two subprogrammes on global health research and vaccination research, respectively. The two subprogrammes have separate budgets and separate calls for proposals, but a joint programme board which is

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<sup>8</sup> The Norwegian Ministry of Foreign Affairs. 2002. Fighting Poverty – The Norwegian Government's Action Plan for Combating Poverty in the South towards 2015. Oslo: Ministry of Foreign Affairs.

<sup>9</sup> Report to Norwegian parliament no. 35 (2003 – 2004)

responsible for allocation of funds and for developing strategies and future calls for both global health and vaccination research.

Global health research is here defined as research aiming at improving health and health care for marginalised populations in low- and middle-income countries. This includes epidemiological studies, and the development, implementation and evaluation of new methods for prevention, diagnosis, treatment and care and more efficient and equitable use of existing methods.

Although vaccination research could be considered as part of global health research, the special commitment and large funding from Norway to vaccination has resulted in vaccination research being outlined as a separate priority under the new programme. Naturally, there might be some thematic overlap between research projects under the two subprogrammes.

Vaccination research can more specifically be defined as research aiming at providing existing and improved vaccines for marginalized populations, especially children, in low- and middle-income countries. This includes epidemiological studies, the development and evaluation of new or improved vaccines, implementation of vaccination strategies, and studies to measure the costs and outcomes of such strategies.

### **3.2 Aims**

The overall aim of the programme is to strengthen and expand research that can contribute to sustainable improvements in health in low- and middle-income countries. This includes i) the development of knowledge and tools to combat the major disease burden in these countries ii) the development and strengthening of sustainable Norwegian public and private research groups and institutions; iii) the development and strengthening of international collaboration; iv) the development and strengthening of partnerships with research groups and institutions in low- and middle-income countries to secure capacity building.

The main goal for the subprogramme in global health research is to strengthen and expand research that can lead to improved prevention, diagnosis, treatment and care, leading ultimately to reduced morbidity and mortality, and increased equity in health in low- and middle-income countries.

The main goal for the subprogramme in vaccination research is to generate new knowledge about the disease burden of infectious diseases, and the need for, effect and cost of vaccines, to provide new and better vaccines, and to provide improved immunization strategies for new and existing vaccines, with the ultimate goal of improving the health of marginalized people, especially children, in low- and middle-income countries.

### **3.3 Time span and funding**

The subprogramme for global health research was initiated in 2003 and runs until the end of 2010. The annual budget for global health research has gradually increased from 3 million NOK in 2003 to 15 million NOK in 2007, of which 7 million is allocated from the Ministry of Foreign Affairs, 4 million NOK is allocated from the Ministry of Health, and an expected 4 million is allocated from the Fund for research and innovation.

The subprogramme for vaccination research runs from 2006 until the end of 2011, with an annual budget of 50 mill. NOK from the Ministry of Foreign Affairs. The Prime Minister has announced his commitment to allocate 50 mill. NOK annually to vaccination research until 2015 as part of Norway's particular commitment to contribute to meeting the MDG 4.

A continued increase in funding for global health and vaccination research through the Research Council of Norway and other institutions is needed to achieve the aims listed above. It is assumed that the government will increase and extend its support to both subprogrammes to ensure sustainability for this type of research in Norway and in particular for the partners in low- and middle-income countries. The GLOBVAC programme would welcome opportunities to collaborate with other funding organizations.

### **3.4 Expected outcomes**

The programme shall contribute to the development and strengthening of Norwegian research capacity and competence, by supporting public and private research groups and institutions that can:

- contribute to increased knowledge on priority areas for global health and vaccination research and thus contribute to reduce the 5/90 gap
- contribute to the building of national competence on emerging and recurrent infectious diseases
- have research capacity and competence to be attractive partners for international cooperation in the development of research capacity and essential national health research programmes in low- and middle-income countries
- have research capacity and competence to be attractive partners for international cooperation in consortia that can access funding from other funding sources
- have experience and infrastructure for research training and supervision of MSc and PhD students and post doctoral fellows from developed and developing countries
- contribute to research and evidence-based knowledge to support Norwegian and international policy development in the field of global health and vaccination, through systematic cooperation with Norad, relevant ministries and funding agencies

### **3.5 Proposed actions**

The programme will undertake the following actions:

1. contribute to developing and adopting a co-ordinated strategy for global health and vaccination research in Norway
2. contribute to establishing high quality and sustainable global health and vaccination research units in Norway by:
  - a. identifying and strengthening research groups and activities at Norwegian public and private institutions in global health and vaccination research
  - b. stimulating young as well as established scientists to engage in global health and vaccination research
  - c. supporting research training in global health and vaccination research
  - d. supporting strategic initiatives based on strong institutional involvement and funding in global health and vaccination research
  - e. supporting collaboration between Norwegian and international institutions and research groups in global health and vaccination research
  - f. strengthening co-ordination and networking among Norwegian institutions and groups in global health and vaccination research
3. strengthen cooperation and networking between Norwegian institutions and institutions in low- and middle-income countries and contribute to sustainable capacity building through local training and other measures
4. contribute to securing increased and sustained public and private funding for global health and vaccination research in Norway
5. support private sector and public-private partnerships in research and development of products

### **3.6 Modes of support**

The programme will support public and private Norwegian research groups and institutions. The programme will apply appropriate modes of support that are available at the Research Council of Norway, such as project support, institutional support etc. Assessment of quality and relevance will be the basis for such support.

The programme will support research projects that can lead to capacity building and sustainable research groups and institutions in Norway. For instance could funding from this programme be used for enticing additional funding and/or sustainable commitments from own institution or other sources. The programme will especially encourage research collaboration with public or private institutions in low- and middle-income countries, research collaboration with high-quality international research groups, and research networks. The programme will support projects that can lead to capacity building among researchers and institutions in low- and middle-income partner countries. The programme will also support private sector involvement and public-private partnerships.

### **3.7 Partnership and sustainability**

The inclusion of partners from low- and middle-income countries with a high disease burden is strongly encouraged and in many cases a prerequisite for receiving support from the programme. International cooperation is therefore encouraged, especially with research institutions in these countries. Cross-disciplinary research is also encouraged.

A special challenge for this programme is to secure sustainability and capacity building both for Norwegian institutions and their partners in low- and middle-income countries. Hence, there is a need for long-term sustained commitments to funding in this area. Plans have to be developed, both for the programme and for the projects funded by the programme, for how to continue commitments to global health and vaccination research after the current funding allocated through this programme has ended.

Currently, funding of global health and vaccination research from the private sector is limited in Norway. The programme board strongly recommends initiatives from the government that will stimulate contributions from the private sector for public-private partnerships in global health and vaccination research.

### **3.8 Priority research areas**

This programme will support research on poverty-related diseases and health problems that affect marginalized populations, especially children, in low- and middle-income countries.

Special focus should be on:

- diseases and health problems that account for a large proportion of the global disease burden
- diseases and health problems that are neglected
- thematic areas where Norway is strongly involved in health programmes and research
- thematic areas where Norway has the capacity and competence to be in the international forefront

The subprogramme for global health research will focus on research related to poverty-related diseases and health problems in low- and middle-income countries, in particular countries where collaboration is established with Norwegian institutions. This includes:

- development and evaluation of new methods for prevention, diagnosis, treatment and care
- more efficient and equitable use of existing methods for prevention, diagnosis, treatment and care
- improved equity in health through research on interventions that address structural and individual determinants of poor health
- improved quality, accessibility and affordability of health care through health policy and systems research

- stimulation of technology transfer to low- and middle-income countries

The subprogramme for vaccination research will focus on research related to vaccination against infectious diseases in low- and middle-income countries, including:

- development of diagnostic tools, and identification of the need for vaccination programmes based on epidemiological studies
- development of new candidate vaccines and identification of optimal formulations and immunization regimens for new and existing vaccines
- development of methods to assess vaccine-induced protection (immune correlates), toxicity and side-effects
- determination of impact of vaccination, including protective efficacy and effectiveness for relevant outcome parameters and the development of national surveillance systems
- increasing the availability and ensuring equitable coverage of existing vaccines
- stimulation of technology transfer to low- and middle-income countries, including improved strategies for cost-effective production of vaccines and the development of trial sites

### **3.9 Activities**

Calls for proposals will focus on one or several thematic areas from the priority areas defined above or other thematic areas where Norway has the potential to develop strong research capacity. Information about ongoing activities will be published on the programme web site: [www.rcn.no/globvac](http://www.rcn.no/globvac).

## **Appendix: The context of Norwegian global health and vaccination research**

### ***Norwegian institutions conducting global health and vaccination research***

A survey of Global health research at Norwegian institution in 2004<sup>10</sup> showed that a majority of global health research in Norway is conducted by the universities, in particular at the University of Bergen and University of Oslo. Most of the research programmes at these two institutions are run in collaboration with institutions for higher learning and/or ministries in low- and middle-income countries, and capacity building and staff development are important parts of the programmes. Both institutions run master- and PhD programmes for students from low- and middle-income countries and from Norway. In addition, there are research groups in the field of global health research attached to the University of Tromsø and the Norwegian University of Science and Technology (NTNU) in Trondheim, and at some of the university colleges, the Norwegian Institute of Public Health, the National Health Services Research Centre and a few private companies. A more updated inventory is needed, with special focus on vaccination research.

### ***Norwegian funders of global health and vaccination research***

Norwegian global health and vaccination research is funded by a number of governmental bodies, including:

- The Research Council of Norway
- The Norwegian Agency for Development Cooperation (Norad)
- The Ministry of Foreign Affairs
- The Ministry of Health
- The Directorate for Health and Social Affairs

Global health and vaccination research is relevant for several ministries and other parts of the government. For a stronger involvement in this area, better co-ordination is needed of the responsibilities between the Ministry of Health and Care Services, Ministry of Foreign Affairs, Ministry of Education and Research, the Directorate for Health and Social Affairs and Norad. Further, a more systematic dialogue is needed between the government and the research institutions in this field to ensure that research based knowledge and competence are utilized in a better way.

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<sup>10</sup> Programme plan: Global health research, 2004



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