

GLOBAL HEALTHSHARE INITIATIVE AND THE "POWER OF SHARING"

GLOBAL HEALTHSHARE INITIATIVE



nutrigenomics.ucdavis.edu/ghs

Megan Doyle, Editha Setiawan, Somen Nandi, and Raymond Rodriguez

Department of Molecular and Cellular Biology, University of California, Davis, One Shields Avenue, Davis, CA 95616

Global HealthShare® (GHS) initiative is a new program at the University of California at Davis with a vision to increase global economic citizenship, one healthy village at a time. Its mission is to promote global health and wellness through the power of sharing knowledge, technology and resources.

GLOBAL ECONOMIC PYRAMID



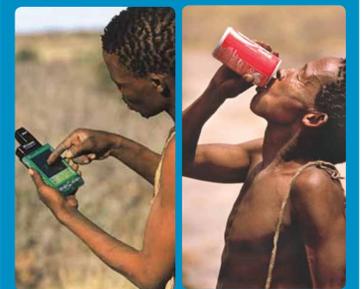
GHS BRIDGES THE GAPS

GHS is bridging gaps that have prevented proven healthcare products and services from reaching those who need them the most — women, children, the poor and the underserved. GHS members and partners have identified six major gaps that contribute to global health disparities:

Gap	Description
Knowledge	Knowledge to reduce diseases exists, but dissemination of knowledge is difficult to achieve in the developing world.
Nutrition	Nutrition enhancement in developing countries has been difficult largely due to insufficient funding, regulatory oversight, and food processing capabilities.
Vaccine	Most vaccines are too expensive for use in the developing world and cannot be delivered without refrigeration and needle injection.
Clinical Trials	There is a shortage of reliable, reproducible clinical studies validating the effects of therapeutic nutrition and vaccines on health.
Production	Low-cost manufacturing of drugs, vaccines, and nutritional products unavailable due to unreliable sources of energy and clean water.
Distribution	Efficient and culturally-appropriate distribution networks have been difficult to establish and maintain in the developing world.

A PUBLIC-PRIVATE PARTNERSHIP TO REACH THE UNDERSERVED

If products like cell phones and soft drinks can be found even in the most rural corners of the developing world, so should basic health education, products, and services.



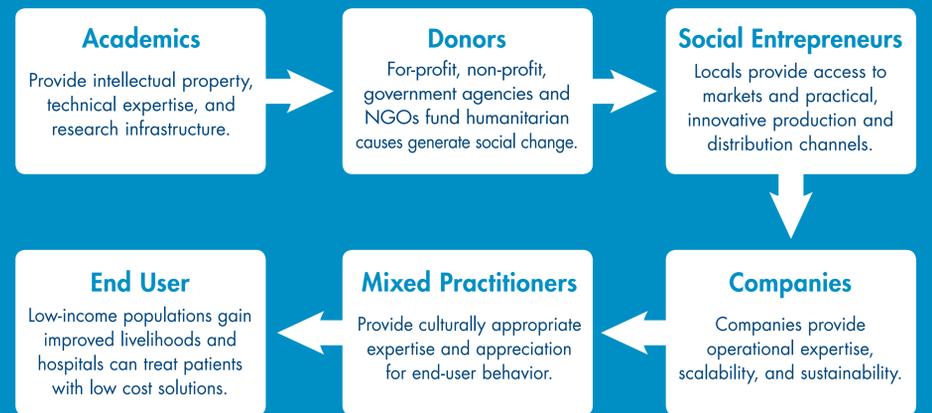
POWER OF SHARING

GHS's operational strategy integrates the talents of over 40 world-class academic researchers, philanthropic organizations, local social entrepreneurs, and private-sector partners to bridge the healthcare gaps between the developed and developing world. By leveraging its resources to support mature, proven technologies and downstream development, instead of discovery research and capital expenditures, GHS can deliver safe and effective health solutions in a timely and cost-effective manner to those who need them the most — women, children, the poor and the underserved. Capitalizing on the collective assets (e.g., expertise, experience, intellectual property, materials, social capital, infrastructure, research, and production capacity) of its members and partners, GHS is clearing a path to market for its nutrition and immunity-based health solutions.



HYBRID VALUE CHAIN

The hybrid value chain (HVC) model of management leverages the capabilities and resources of both the business and citizen sectors to enable the delivery of health products and services to low-income populations in a more cost-effective way. By simply rethinking existing cost structures, we actually broaden our market to include millions of people not previously included in the global market. GHS has created a hybrid value chain to generate sustainable social change and to increase the global economic citizenship of countries burdened by poverty and disease. Products and services are sold as low as possible to large markets to generate modest revenues, which will enable GHS to expand our range of service and create lasting impact.



PROMOTING NUTRITIONAL HEALTH IN THE SUNDARBAN REGION OF INDIA

Access existing social capital in the form of RKMVU educators and health practitioners, leveraging their technology, infrastructure, and social networks to deliver world-class nutrition and agricultural expertise to rural populations.

Country/Region: Sundarban Region, India

Partners: Ramakrishna Mission Vivekananda University (RKMVU), Belur Math, India

Background: The ecologically important mangrove forests of the Sundarbans, India are a unique, vulnerable region where households face socio-economic adversities and environmental hazards which lead to undernutrition morbidity among younger children. Transient and traumatic climatic changes create a cycle of chronic poverty, seasonal crop failures, and physical access barriers, compounded by a lack of public health education and inefficient delivery of health services.

Project Objectives

- Conduct epidemiological studies of issues in nutritional health
- Create distance learning programs for crop management advisory
- Vocational training and tele-medicine support for rural health workers



Khan et al. Environment: Science and Policy for Sustainable Development, 2011 5(3):5.
Mukherjee et al. Future Health Systems, 2011.

RWANDA DAIRY COMPETITIVENESS PROGRAM II

Building one healthy village at a time: smallholder dairy farming lowers the rate of malnutrition, elevates social status, and provides self-employment, particularly to women and their families.

Country/Region: Kigali City, Rwanda

Partners: Land O'Lakes, Inc. International Development, USAID

Background: Despite the importance of the smallholder dairy industry to the livelihood of the Rwandan people, farmers continue to face numerous challenges to successful dairy development. For example, low on-farm productivity, serious quality issues, high costs of production and marketing, and inefficiencies along the dairy supply chain.

Project Objectives:

- Training in animal husbandry, farm management practices, all-hazards preparedness
- Streamlined milking and processing with novel technologies designed for the rural setting
- Reverse innovation immunotherapies against bovine mastitis, respiratory, and diarrheal disease
- Conduct animal trials for an affordable mastitis vaccine



Perez-Aleman Proc Natl Acad Sci USA 2011.
Midegeta et al. Journal of Veterinary Medicine 2004, 51(3).

REDUCING THE BURDEN OF RABIES IN BANGLADESH

The aim of this project is to produce novel anti-rabies therapies crucial for reducing the socio-economic burden rabies places on the developing world.

Country/Region: Syedpur, Chittagong, and Dhaka Districts, Bangladesh

Partners: Government of Bangladesh, OneWorld Health, and more.

Background: Rabies is a reemerging zoonotic viral disease present throughout much of the developing world, including Bangladesh. Globally, over 15 million people seek post-exposure prophylaxis (PEP) treatment for rabies every year. Without treatment, rabies is almost 100% fatal however, the cost and availability of PEP limit its widespread use and a low-cost alternative is greatly needed. Endemic canine rabies causes an estimated 70,000 deaths each year in Asia and Africa alone.

Project Objectives:

- Accelerate translation of novel, plant-made rabies therapies into safe, cost-effective alternatives to currently manufactured rabies treatments
- Establish safety and efficacy data in human and animal clinical trials
- Aid local entrepreneurs in building a profitable enterprise to produce therapies locally in Bangladesh
- Distribute therapies through existing infrastructure and our network of physicians, veterinarians, business leaders, policy makers, and social entrepreneurs
- Conduct outreach and education programs to raise rabies awareness

Bourhy et al. PLoS Negl Trop Dis. 2010;4(11):e839.
Hossain et al. 2012 Epidemiol & Infect (in press).

