



The JiVitA Project

A Maternal and Child Health Research Program of
Johns Hopkins Bangladesh
*serving the Ministry of Health and Family Welfare of the
Government of the People's Republic of Bangladesh*

Introduction

JiVitA is presently one of the largest population health and nutrition intervention research projects in South Asia. Operational since 2001 in northwest rural Bangladesh, the project covers a population of ~650,000 people in area of ~435 sq. km with 850 trained staff. JiVitA was formerly a Research Component within the joint, bilateral health and population program (UBHPP) between the Governments of the People's Republic of Bangladesh and the United States of America and is now registered as a non-profit research project of Johns Hopkins Bangladesh Limited, a subsidiary of the Johns Hopkins University in Baltimore, Maryland, USA.

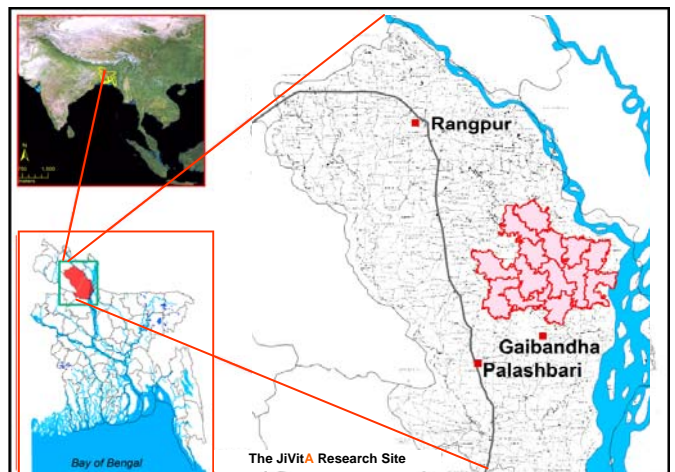
JiVitA seeks to inform, guide and motivate policies by identifying effective and low-cost nutrition interventions that can improve health and survival of mothers, infants and children in rural Bangladesh, and more generally across rural South Asia. This goal is achieved through the conduct of community-based research that evaluates the extents to which maternal, infant and child micronutrient and other nutrition interventions can reduce mortality and morbidity and advance quality of rural life. JiVitA focuses on testing approaches that can safeguard pregnancy by reducing risks of miscarriage, still birth, preterm birth, small birth size and maternal morbidity, including obstetric complications. The project seeks to improve infant health and survival by reducing neonatal and post-neonatal mortality, infectious illnesses and postnatal growth and developmental stunting. An example is the recent finding of the JiVitA-2 trial (see back page) that has revealed an ability of newborn vitamin A supplementation to reduce infant mortality by 15%, serving to stimulate national and regional interest in this low-cost approach to improving infant survival through a home-based nutrition intervention. Recognizing the inseparability of mother and child, JiVitA also seeks to identify facets of breast and infant feeding practices that favorably affect infant health and development. Through its epidemiologic studies, JiVitA seeks to inform the public about neglected areas of health; for example, the burden of birth defects in rural society, care-seeking responses to life-threatening illness, and the potential importance of local area variation in illness, malnutrition and mortality in health care system design and outreach. JiVitA has pioneered the use of appropriate technologies, including mobile phones, in improving the quality of research and delivery of care in its research area. JiVitA shares its research findings regularly with local and national professional bodies, government stakeholders, and international agencies through national and international conferences, scientific seminars, and peer-reviewed journal publications.

Methods

JiVitA pursues its goals by identifying key questions related to the effectiveness and safety of practical nutrition interventions that can have a public health impact in rural societies. Answers to these questions are sought through the design and conduct of randomized trials, often supported by epidemiologic, ethnographic and laboratory research.

Location

The JiVitA research area (Figure 1) covers 19 Unions (163 Mauzas) of a population-dense, rural area in the districts of Gaibandha and Rangpur. This area is continuously enumerated and GIS-mapped at the household level. This GIS includes over 90,000 landmarks of potential public health relevance (e.g. EPI Centers, health care providers, growth centers, markets, etc.). JiVitA has an infrastructure of 70 field offices, a bio-specimen processing laboratory and a field management station in Gaibandha. The project center in Rangpur performs data management & archival and GIS functions. The JiVitA national liaison office is located in Banani, Dhaka.



BILL & MELINDA
GATES foundation

JiVitA Research Activities

▶ **JiVitA-1:** (July 2001 - Jan 2007) A ~60,000-pregnancy, placebo-controlled community trial that assessed effects of antenatal-to-postnatal, weekly supplementation of women with a vitamin A, beta-carotene or placebo capsule on mortality of women related to pregnancy, fetal loss and infant mortality.

▶ **JiVitA-2:** (Jan 2004 - Jan 2007) A ~16,000-newborn, placebo-controlled, community trial nested into the JiVitA-1 trial (see figure at right) to assess effects of newborn vitamin A supplementation (single 50,000 IU oral dose) on infant mortality.

▶ **JiVitA-3:** (Dec 2006 - Jan 2012) A ~36,000-pregnancy, placebo controlled community trial assessing the effects of a daily antenatal-to-postnatal multiple micronutrient supplement on infant morbidity and mortality against that of an iron-folic acid standard of care comparison group. Nested sub-studies collect biospecimens to assess the impact of supplementation on nutrient biomarkers and study the biological pathways through which micronutrient supplementation can impact fetal growth.

▶ **Nested Studies:** Epidemiology of bacterial vaginosis in pregnancy, impact of adolescent pregnancy on linear growth, salt iodization and iodine status in pregnancy, the relationship between maternal iodine status during pregnancy with children's cognitive development at 5 years, epidemiology of infantile bleeding, assessment of the health impact of chronic exposure to iron through water, effect of vitamin A supplementation on nasopharyngeal colonization with *S. Pneumococcus* and *H. Influenzae*, development of body composition assessment methods using bioelectrical impedance analysis (BIA), validation of quantitative ultrasound to assess bone density, development of field methods to identify low birth weight infants and ascertain time of birth, validation of a Portable Field Dark Adaptometer to screen and identify early vitamin A deficiency and a study of the effect of income and employment on rural women's empowerment.

▶ **Nationally Disseminated Data (2001-2010):** Adolescent Health and Pregnancy, Birth Spacing, Delivery and Newborn Care Practices, Birth Size/Weight and Mortality Risks, Breastfeeding, Prolactal and Complementary Feeding, Dietary Diversity, Treatment Seeking Behavior, GIS and Field Research Techniques, etc.

Ethical Review and Institutional Oversight

All JiVitA activities are under the ethical oversight of the Bangladesh Medical Research Council (BMRC) and the JHU Committee on Human Research (JHU-CHR). JiVitA research is regularly monitored by an international, independent Data Safety Monitoring Board (DSMB). A National Technical Advisory Panel (NTAP) consisting of leading Bangladeshi scientists in the fields of nutrition, obstetrics and gynaecology, paediatrics, and public health serve as the advisory board of JiVitA.



JiVitA Collaborations

Children's (Shishu) Hospital

MotherNewBornNet

Institute for Nutrition and Food Sciences (INFS), Dhaka University

Institute for Child and Mother Health (ICMH)

Bangladesh Atomic Energy Commission (BAEC)

International Atomic Energy Agency

Institute of Nutrition, Mahidol University (Thailand)

St. John's Medical College Hospital (India)

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Nutriline Health Institute, California, USA

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