Grameen Health Initiative (GHI)
Achieving Sustainable and Affordable Community Healthcare

1.0 Summary

More than 10 million persons in low income countries die each year from preventable causes. Innovative solutions are urgently needed to establish sustainable and effective local systems to reduce disease burden and develop human resource capacity to manage future challenges. Our goal is to develop a sustainable community-based health delivery approach that reaches the millennium development goals (MDGs) of reducing child deaths by 2/3, and maternal deaths by 3/4 by 2015. This effort seeks to work collaboratively with national and international partners to move beyond the existing health infrastructure toward an innovative and responsive system that provides customized health information and care for underserved populations.

In recognition of the multiple health challenges faced by the poor in Bangladesh, the Grameen Bank (GB) initiated Grameen Health in 1993 as a program to provide primary care services for both Grameen Bank members and non-members. This program has since expanded to a network of 48 Grameen Clinics (GC) linked with community-based micro-insurance to provide low cost health care to the poor. The clinics currently operate with 93% cost recovery and initial evaluations indicate growing health benefits. However, the impact of this system could be enhanced by expanding access and coverage, improving disease prevention activities along with quality of care, and further enabling local long term sustainability. We, at Grameen Health, propose to strengthen and expand the processes underpinning the success of the existing model, and promote the key principles of sustainable social entrepreneurship for health to create a replicable model that will expand throughout Bangladesh and to other countries.

The Grameen Health Initiative (GHI) described herein consists of a three-tiered framework of activities to enhance the reach, impact, and sustainability of Grameen Health services:

Tier 1.

Create a network of household health promoters (HHP) working door-to-door to provide health promotion, disease prevention, and early detection through active referral and follow-up by:

a. Utilizing simple and low-cost field-based screening and diagnostics to increase referral and demand
b. Deploying cell phone technology for real time flow of health information
c. Providing customized health education messages to enhance:
    i. Adoption of preventive health practices
    ii. Early diagnosis of illness
    iii. Compliance with treatment
d. Strengthening health promotion, detection and prevention activities in coordination with the weekly meetings for the network of 7.5 million Grameen borrowers and 27,000 employees of Grameen Bank.

Tier 2.

Build continuous improvement systems to enhance quality of care and professional service at Grameen Clinics by:

a. Developing patient based clinical care record systems and health informatics
b. Improving local healthcare competencies through shared standards and protocols
c. Introducing continuous tracking, monitoring, and analysis of patient symptoms, diagnosis, treatment, compliance, and outcomes
d. Improving diagnosis by imaging technology with remote feedback, and low cost point of use micro-assays

Tier 3.

Establish a cluster of local Medical, Nursing and Public Health (MNPH) Colleges and Hospitals that will focus on sustainable health development. These clusters will be referred to a Grameen Health Cities. They will prioritize:

a. Improving human resources for health with knowledge and practice through the application of novel education methods based on use of data and simulation center techniques
b. Developing and maintaining health information services
c. Focus on monitoring, evaluation and improving health at the population level
d. Catalyzing social business activities through:
    i. Tailored product application and development
    ii. Evidence based health practice and marketing of health products through locally-based social entrepreneurs.

Providing such sustainable high quality services with high coverage in resource poor settings is inextricably linked to sound decision-making, operational efficiency, and strong local partnerships. These elements require an active information backbone to engender evidence-based processes. To this end a framework of data driven enhancement of local interventions for empowerment and results (DELIVER) will be pursued. The program will begin with the development of the local tools and establish the initial platform from which to expand prior to full sustainability. GHI will therefore make use of local knowledge and data to inform rapid and effective optimization of Tiers 1, 2 and 3, and foster participation and accountability of all stakeholders for long term sustainability.

Initially the GHI activities will be pursued by creating centers of excellence within the existing GC system with a focus on maternal and newborn care. Based on prevailing health conditions in the population serviced by the GCs we expect to reduce the death of children below 5 years of age by 1/4 in 3 years and by 2/3 by 2015. In addition, by 2015 we expect to reduce maternal deaths by 3/4. Efforts will continue to identify significant infectious and chronic illnesses, such as tuberculosis and diabetes, faced in these communities and develop innovative methods to address them. The success of GHI will be determined by its ability to establish sustainability in two ways:

1) Continuous improvements and impact on health status of the population served
2) Local and long term financial self sufficiency of health care provision

An incremental approach to scaling-up will enable subsequent programs to build upon the success and lessons from previous activities. This will establish a platform for training of personnel from other resource poor settings and expansion to other countries in Asia, Africa, Latin America and North America.

For additional details please contact Mr Vidar Jorgensen (vidar@wchnet.com), Dr Anita Shankar (avshanka@jhsph.edu) and Lamiya Morshed (lamiya@grameen.com)

2.0 Introduction

Currently, in low income countries more than 10 million persons die each year from preventable causes. In these countries, more than a third of all deaths occur in children, and less than a quarter of all people reach 70 years of age. Complications of pregnancy and childbirth continue to be leading causes of death for women and newborn children. Specific causes of adult mortality include complications from chronic diseases such as diabetes. Ineffective health care delivery systems and the concomitant lack of access to care and health-seeking practice, especially for the poor, have led to needless illness, disability and death.

The leading causes of childhood deaths are easily prevented through simple improvements in basic health services and proven interventions, such as oral rehydration therapy, vaccinations, and rapid detection and treatment of pneumonia. For reduction of maternal and newborn mortality, which remains unacceptably high across much of the developing world, access to skilled care at delivery is critical. Substantial global efforts have been put forth to address these issues, but despite important progress, the world is not on track to reach the millennium development goals of reducing child deaths by 2/3, and maternal deaths by 3/4 by 2015. Innovative solutions are needed that build locally sustainable systems to address the burden of disease and develop human resource capacity to better manage future challenges.

In response to these persistent needs, as early as 1993 the Grameen Bank (GB) began a health program to provide care for Grameen borrowers and rural poor in Bangladesh. The goal was to provide quality health services with qualified medical personnel at an affordable cost. An infrastructure was established that has grown to 48 Grameen Clinics (GCs) that include a laboratory and pharmacy, and satellite camps along with community health outreach, and emergency services.

The GCs are associated with a local Grameen Bank Branch and are led and managed by a licensed physician, who is assisted by one or two paramedics, a laboratory technician and six community health assistants. This network currently operates with 93% cost recovery. The GCs typically serve a population of 50,000 persons living within 8-10 kilometers of the clinic. In 2001, GB established the Prevention of Cataract Blindness Project, which has now become the Grameen Eye Hospital.

A vital component of these health programs is the accompanying micro-health insurance scheme to encourage positive health seeking practices. This serves a dual purpose of enhancing utilization of health services and improving cost-recovery to achieve sustainability. An integral part of the Grameen approach is the “sixteen decisions” which guide all GB borrowers and their families toward productive living. Indeed, more than half of these 16 decisions directly address the health and well being of borrowers and their families. Thus, the basic principles of learning organizations and an overall vision to support the well-being of the poor have been pillars of the Grameen approach.

While initial evaluations of the GC network and its health impact are positive, continuous improvements in coverage, disease prevention, quality of care and sustainability remain as top priorities. Moreover, it is critical to identify and strengthen processes underpinning the success of this model, and promote the key principles of social entrepreneurship for health to create a sustainable and replicable model that will expand throughout Bangladesh and to other countries.

3.0 Specific Aims

We propose herein specific aims establishing three tiers of improved service and quality of care to enhance the reach, impact and sustainability of Grameen Health services:

Tier 1.

Create a network of household health promoters (HHP) working door-to-door to enhance demand for services through active referral and follow-up by:

e. Utilizing simple and low-cost field-based screening and diagnostics to increase referral and demand
f. Deploying cell phone technology for real time flow of health information
g. Providing customized health education messages to enhance:
    i. Adoption of preventive health practices
    ii. Early diagnosis of illness
    iii. Compliance with treatment
h. Strengthening health promotion, detection and prevention activities via the weekly meetings for the network of 7.5 million Grameen borrowers and 27,000 employees of Grameen Bank.

Tier 2.

Build continuous improvement systems to enhance quality of care and professional service at Grameen Clinics by:

e. Developing patient based clinical care record systems and health informatics
f. Improving local healthcare competencies through shared standards and protocols
g. Introducing systematic care audits linked with patient outcomes
h. Improving diagnosis by imaging technology with remote feedback, and low cost point of use micro-assays

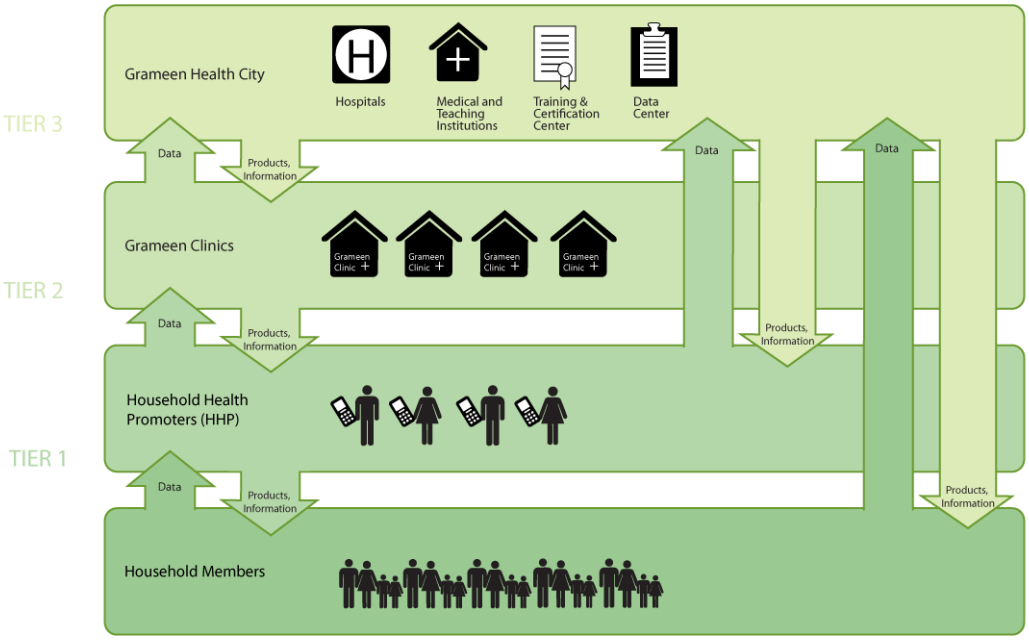
Tier 3.

Establish a cluster of local Medical, Nursing and Public Health (MNPH) Colleges and Hospitals that will focus on sustainable health development. These clusters will be referred to a Grameen Health Cities. They will prioritize:

e. Improving human resources for health with knowledge and practice through the application of novel education methods based on use of data and simulation center techniques
f. Developing and maintaining health information services
g. Focus on monitoring, evaluation and improving health at the population level
h. Catalyzing social business activities through:
    i. Tailored product application and development
    ii. Evidence based health practice and marketing of health products through locally-based social entrepreneurs.

An additional aim for the Grameen Health Initiative is to create learning and practices that can be replicated in other countries. It is expected that innovations in healthcare delivery will have applicability in both developing countries trying to extend the reach of healthcare and in industrialized countries facing an unsustainable healthcare burden.

Figure 1. Overview of Grameen Healthcare Network



4.0 Methodology

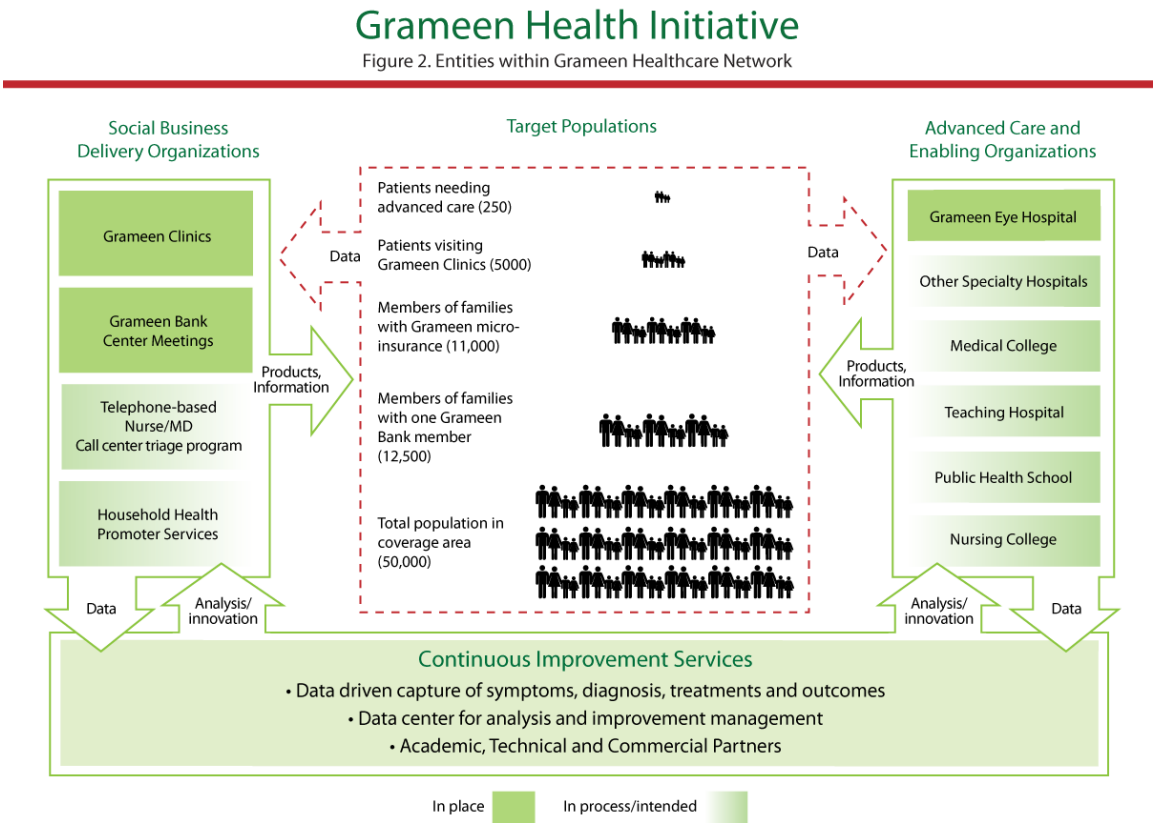
Providing sustainable high quality services with high coverage in resource poor settings is inextricably linked to sound decision-making and operational efficiency. Therefore, a strategy of Data driven Enhancement of Local Interventions for Empowerment and Results (DELIVER) will establish an information backbone spanning all three specific aims to engender evidence-based decision-making. This framework permits linking of health practices with patient outcomes across the spectrum from initial referral to the outcome of care, thereby enabling optimization of care and impact.

Moreover, because patient outcomes are known and recorded, the successes or weaknesses can be transparently shared with communities and clients who in-turn give input for solutions. Sharing data on community health and impact of interventions fosters participation and accountability of all stakeholders and keeps the focus on client welfare. This establishes a client-provider partnership that transcends limitations of traditional health and business practice. Clients actively contribute to improving services and products, and are more willing to pay for them if benefits are shown.

The overall framework for activities is illustrated in Figure 1 along with the existing Grameen Health entities and specific paths of information/data flow. The health status of the client population is the key and serves as the driving force for all activities. Based on the specific health needs of the population, the evidence-based enhancements to the Grameen Clinics will allow tailoring of services to best manage the population's needs. Moreover, the existing Grameen Bank borrowers will benefit from additional health education during their weekly meetings. HHPs will provide client-specific health promotion activities for a larger portion of the community as will the nurse/MD call center. These activities will all be supported by the training and development of high quality health care personnel from the medical colleges and teaching hospital. The positive feedback cycle strengthens core components of decision-making, motivation for empowerment, and capacity to take effective actions. In this way, the sustainability of each Tier (HHP, GC, and

MNPH Colleges) is tied to health improvement and client satisfaction, and the willingness of beneficiaries to pay for and help improve services. Linking these concepts across the three tiers permits synergistic benefits and robust sustainability.

Figure 2 provides an overall picture of the on-the-ground entities that will make up the Grameen Health Initiative. Many of the building blocks are in place, but others will depend upon sustained development efforts.



As the primary entry point to enhance services and impact of GCs, the focus will be maternal and newborn care. The reason for this is that provision of quality maternal and newborn care, perhaps more than any other service, is a litmus test for a functional health system. It requires locally accessible and affordable 24-h provision of highly skilled staff able to make rapid life-saving decisions with access to proper facilities, supplies, and support personnel. Lessons from successful improvement in maternal and newborn health can then be applied to many aspects of health delivery. Indeed, additional steps will strengthen capabilities for detection, treatment, and management of chronic illnesses such as diabetes and infectious diseases such as tuberculosis, both serious adult health burdens in Bangladesh. Scaling up such systems is not a one-size-fits-all process, as it requires adaptation to local conditions and this will be the focus of the GHI approach.

4.1 Tier 1: Create a network of household health promoters (HHP). Experience in developing large scale community-based health development and research has shown that rapid changes in health status, including mortality, are achievable in resource-poor settings. However, these gains and their sustainability require efficiencies in implementation that are only possible through enhancing client demand and ability to pay for high quality health services. In order to foster these conditions we propose a network of household health promoters (HHPs).

The HHPs are community-based self-employed social entrepreneurs for health who will serve to bridge the gap between communities and health services. To ensure both effective and sustainable businesses, HHPs must be trained and deployed locally for personalized door-to-door interactions promoting demand for services through referral and follow-up. The HHP would come from the community they serve and follow the basic principles of social entrepreneurship. The proposed implementation strategy herein therefore places a strong emphasis on enhancement of the demand side for health services through a network of HHPs.

Developing and maintaining the quality of HHP client service is a crucial element to improving health at the community level. While HHPs will be independent businesses, they will need to undergo certification and regular supervision to ensure high quality services. It is expected that existing Community Health Assistants (CHAs) (from Tier 2) who are salaried GC employees will serve as the primary trainers and supervisors of the HHPs in their catchment area. Moreover, the MNPH Colleges and Hospitals (Tier 3) will be able to provide supportive training and supervision.

Through client tracking and targeted health promotion, HHPs can assure the continuum care from pregnancy through early childhood, thereby maximizing the exposure of women and their infants to the full package of life saving interventions. This information can then be used for further customizing health services to client needs and to inform community based estimates of morbidity and mortality. The clients are therefore not only the origin of population based data but also the endpoint of information flow back to them.

4.1.1 Utilizing simple and low cost field based screening to increase referral and demand. Recent advances in home-based diagnostic technologies for infectious diseases and metabolic disorders (e.g. diabetes) provide unprecedented ability for early detection and referral. HHPs will be trained in the use and interpretation of results from these simple tests. It is anticipated that this process will result in earlier and more widespread coverage of effective treatments and improved management of adverse health conditions. Moreover, HHPs will be trained in the promotion and marketing of proven diagnostics as a means of fostering sustainability.

Panel 1. Guiding principles for successful health improvement at the community level

Community focus: The work should begin at the community level and accountability should be to the community. Innovations should be fostered at the local level.

Capacity building and human empowerment: Integral to all implementation processes is measurable human resource capacity building. Individuals should be developed to their greatest potential.

An appreciative approach: Appreciative Inquiry (AI) will be used as an approach to revitalize organizational functioning. AI focuses on what works well within systems as a means of enhancing positive growth and overcoming challenges.

Data driven decision making: Decision-making will be based on systematic information / data (both qualitative and quantitative) in an atmosphere of transparency and accountability.

Sustainability: All initiatives should have an integral plan to become sustainable within a specific time frame

4.1.2 Deploying cell phone technology for real time information flow will enable HHPs to have much greater impact on community health. Simple cell phone applications will allow HHPs to provide tailored health messages based on client or household feedback, or home-based diagnostics. In addition, patient outcomes from clinical care can be reported and specific advice provided. By providing regular updates on reported pregnancies, births, and deaths, information is available to assess macro-effects of health programs or other interventions. On a more practical level, phone-based applications will enable efficient scheduling of household visits and also improve the capability of supervisors to review performance and assist HHPs in real time.

4.1.3 Providing customized health education messages will increase health through more targeted advice. As mentioned above, HHPs will be supported and trained to provide customized health education messages as part of a general focus on personalized medicine. Through the DELIVER framework, both population and individual specific data can be integrated in real time and provided to HHPs to better inform clients in the context of referral or follow-up. These processes will aim to improve (1) adoption of preventive health practices, (2) early diagnosis of illness, and (3) compliance with treatment. Promotion of healthy behaviors for the larger community will be undertaken through local health fairs and awareness activities.

4.1.4 Strengthening health activities for the network of Grameen borrowers and employees. Grameen currently conducts weekly meetings with its 7.5 million Grameen borrowers and 27,000 employees. These meetings serve as a forum of discussion and innovation. Strengthening health promotion, detection and prevention steps via the weekly meetings will likely result in better health for participants in the Grameen system, and also provide a useful way to further evaluate and disseminate the benefits of GHI.

4.2 Tier 2: Enhance quality of care and professional service at existing Grameen Clinics. Health care systems in resource poor settings face multiple challenges. The most common include insufficient drugs and diagnostics, inadequate knowledge or capacity to provide the most effective treatments, and limited information on patient characteristics or history. Of these, perhaps the most critical is the need for a sound and dependable patient information system. With the advances in electronic information technologies, it is possible now to greatly enhance information systems in a wide variety of settings. This improves triage efficiency and use of patient history to inform treatment and preventive practice.

Telemedicine and the use of video conferencing will be used as means of maintaining regular communications with health service personnel residing elsewhere in the country or internationally. These information technologies may also allow computer-assisted patient doctor exchanges with specialists and other medical personnel.

In order to maintain a high level of health service delivery, it will be critical to recruit and retain high quality health personnel. Efforts will be made to recruit individuals locally and provide extensive and on-going training. Mechanisms will also be established to directly address needs of health personnel including fostering an environment advanced learning and career opportunity.

4.2.1 Developing patient based clinical care record systems and health informatics. In resource-poor settings, it is difficult to trace who in the population is accessing treatment or the specific patient's medical history. This directly affects care as it can result in errors in treatment and prevents the examination of the association between the treatment regimen and outcome. An important example is diabetes, where standard treatment may be less effective in South Asian populations. The concept of personalized targeted treatment as promoted by GHI can only be realized if adequate patient information systems are in place. Substantial improvements in the efficacy and quality of care would be expected from such a system.

4.2.2 Improving local healthcare competencies through shared standards and protocols.
By establishing and continually refining basic protocols, a standard of care practice is established. The DELIVER framework fosters the use of local evidence within clinics and communities to establish the best protocols in a dynamic self-renewing process that allows adaptation to local resources. These can be shared and exchanged between clinics to create optimal care delivery scenarios, and better outcomes for clients and communities. Qualifying staff, including doctors, nurses and CHAs will be trained in human resource management and quality assurance methods to help maintain a high level of quality of care, both in the clinic and within the community.

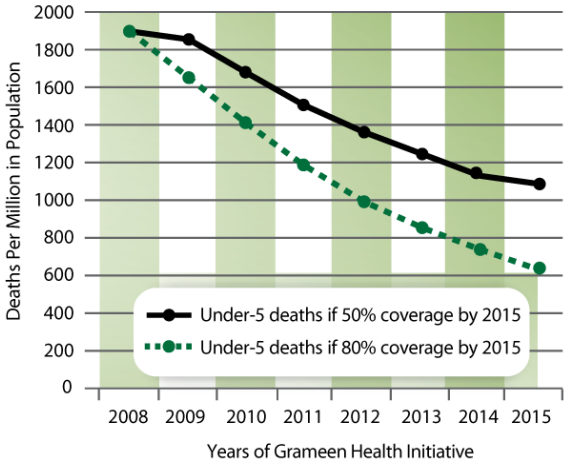
4.2.3 Introducing systematic care audits linked with patient outcomes. The patient record system in conjunction with data from HHP follow-ups will provide a wealth of information regarding treatment, management failures and successes. These events, once identified can then be followed up to systematically classify the cause. Thus, in addition to biomedical causes of treatment failure or death we will be able to identify the underlying operational causes and take targeted action to correct them.

4.2.4 Improving diagnosis by imaging technology with remote feedback and low cost point-of-use micro-assays. In addition to the improvements in home-based diagnostics as described in 4.1.1, clinic based imaging and diagnostic technologies have advanced considerably (e.g. portable ultrasound, blood biochemistry and biomarkers). However, one bottleneck in the application of these technologies relates to the interpretation of results/data. This can be ameliorated through the provision of remote support by a panel of local and international experts through communications technologies and simple computer-based algorithms.

Figure 3 shows the estimated impact of activities in Tier 1 and 2 on deaths in children less than 5 years of age.

Grameen Health Initiative

Figure 3. Effect of Increased Core Intervention Coverage on Under-5 Mortality



The 50% coverage refers to maintenance of current health intervention coverage rates for vaccination, vitamin A dosing and stepwise increased coverage of other interventions to 50% by 2015. These additional interventions include balanced protein energy and micronutrient supplements for pregnant women, antenatal care, facility-based births, clean delivery and home-based newborn resuscitation, exclusive breastfeeding and complementary feeding, Hib and pneumococcal immunizations, antibiotic treatment of pneumonia, ORS for diarrhea, and household hygiene practices.

The 80% coverage refers to maintenance of current health intervention coverage rates for vaccination, vitamin A dosing, and stepwise increased coverage of other interventions to 80% by 2015. The same interventions apply.

(Estimates made using the LiST software from The Futures Institute)

4.3 Tier 3: Establish a cluster of the Medical, Nursing and Public Health (MNPH) Colleges and Hospitals, referred to as Grameen Health City. This will serve as the platform for catalyzing ongoing renewal of sustainable health development with the focus on human resources including nurses, CHAs and HHPs, and eventually physicians. The driving philosophy of the MNPH Colleges is to establish and maintain the culture of a learning organization with focus on the DELIVER paradigm. This paradigm advocates rapid action based on informed decisions using data that capture critical unique characteristics, such as local factors, that might affect morbidity

and mortality. The best solutions to solve these health issues will, therefore, differ by location. It is noteworthy that this process is highly dependent on development of local human resources with both health care delivery skills and in the use of data for decision making leading to local innovations for community health and development. Strengthening this builds skills to help the client population to take the best, most effective actions for their health. This includes capability to set policy, utilize technology and build social capital such as human resources that enhance decision making and institutional capacity.

The development of the colleges will follow a phased-in approach based on the health needs in Bangladesh. First will be the creation of a Nursing College as there is a dire need for qualified nurses in Bangladesh. The college will strive for excellence in education with qualified teachers using updated curriculum and extensive opportunities for clinical training. These nurses will serve as critical health service personnel at all levels of the health care system from tertiary care hospitals to rural diagnostic centers and clinics. Second will be the development of a college of Public Health that will include training of allied health and medical technical support personnel. Third will be the development of a postgraduate medical program for qualified physicians. Family and Community medicine will be a focus of the post-graduate medical program that will also include General Medicine, General Surgery, Obstetrics & Gynecology, Pediatrics, Psychiatry, Radiology, Pathology, and Anesthesiology.

Establishing medical postgraduate programs will require a critical mass of occupied hospital beds and specialties. While there is no fixed number of occupied beds required for post graduate medical education, patient contacts, case-mix and complexity are all important determinants in quality of education. It is expected that a tertiary hospital of 300 beds, with high occupancy, would be minimally sufficient to support a postgraduate medical program. In addition, the general service hospital will be supported by specialist hospitals, such as the Grameen Eye Hospital, which was already established in 2008.

Once completed, the MNPH Colleges and Hospitals will provide not only training for human resource development for improved quality of care, but also for training and support of the overall information technology (IT) tools and infrastructure in the context of health. Educational activities will allow for interactions among local and international researchers and public health professionals through the establishment of a program of Fellows and Volunteers. These collaborations will help GHI to connect with innovative experiences of health delivery around the world, and to further expand this model to other countries, including the USA.

4.3.1 Improving human resources for health with knowledge and practice. A core activity of the MNPH College and Hospital initiative is to advance public health and excellence in clinical practice. Grameen Health Initiatives will develop collaborative international learning programs and serve as a training and data center for clinical care providers. Specifically, Grameen Health Initiatives will establish both in-service and post-training nursing development programs. This will include local adaptation of world class training and simulation exercise. Additional expertise in clinical audit procedures and quality of care will be locally adapted and developed.

4.3.2 Developing and maintaining health information services. The MNPH College and Hospital will place a strong emphasis developing human resources for health information technology services. This focus is not only crucial to support the DELIVER framework, but is crucial for activities 4.1.1, 4.1.3, 4.2.1, and 4.2.2 as listed above. Currently, human resource bottlenecks in this area are hampering needed benefits. This IT backbone which will include training, analysis and support will provide the necessary information to allow for personalized medical advice and other community outreach activities.

4.3.3 Focus on monitoring, evaluation and improving health at the population level. For the physician, the primary focus is on the individual patient. Physicians check vital signs, examine symptoms, prescribe treatments and monitor progress. For the public health provider, the overall health status of the service population is analogous to that of a patient, and therefore, should be monitored accordingly. This regular monitoring of the actual changes in the health of populations served by GHI will be critical to understand if progress and improvements in health are actually being achieved. This requires periodic surveys examining health status and access trends, as well as longitudinal follow up of both patients and those who may not have obtained care or engaged in disease prevention practices. This knowledge, collected continuously through the systems described herein will provide real time information to make decisions to improve and manage population health. The MNPH colleges and hospital faculty and personnel will help design and oversee such activities.

4.3.4 Catalyzing social business for health activities: The reliable and affordable provision of effective health tools (e.g. diagnostics, nutritional supplements, tailored pharmaceuticals) will depend on local research and development and manufacturing. The MNPH Colleges provide a structure that is attractive for collaborators and investors to develop their social business ventures. These social businesses can link with the HHPs and GC care providers and communities to optimize product development. The improved efficacy and reduced costs resulting from this is critical to overcome the barriers of affordability and applicability.

5.0 SUSTAINABILITY

As mentioned above, viable mechanisms for sustainability must be developed for each of the three proposed tiers in order to succeed at scale. Such mechanisms would further benefit from synergy between the different tiers.

For Tier 1 there are currently three pathways envisioned to establish sustainable HHPs: (1) remuneration of HHPs from community health insurance based on the number of illness episodes averted, (2) receipt of funds through referral fees, and selling low cost health products or discount coupons for specialized services such as skilled attendants at delivery or packages of health services, (3) direct payment from households for client specific health promotion activities. In all cases the impact of HHPs and client satisfaction will determine their local sustainability. The quality of the HHP and ability to provide customized support and follow-up will be critical.

For Tier 2, the GCs will continue to collect user fees and receipt of payments from community based insurance. The number of clients is expected to increase due to activities of HHPs, thereby increasing the volume of cost recovery. Moreover, local manufacturing and targeted use of pharmaceuticals based on proper management and quality assurance will optimize efficiencies. In addition, improved diagnostic and imaging capabilities may be resources for income generation through services for external partners.

For Tier 3, the MNPH Colleges and Hospital will receive funds from: (1) student and user fees for trainings and certifications, (2) investments for research and development to produce locally effective products, possibly including funds from local manufacturing, (3) fees for the provision of IT services to other private health care clients or government. In general, whenever possible, efforts will be made to leverage existing activities of the GB, especially the weekly meetings of the 7.5 millions of their borrowers. These meetings are already an important platform for health promotion, and disease prevention and early detection.

6.0 GENERAL IMPLEMENTATION PROCESS

As indicated, this initiative and the DELIVER framework will require a systematic roll out process to facilitate effective local adaptation. Moreover a step wedge phase-in process of the three tiers will enable evaluation of the impact of the processes on health and development. Initial steps will include hiring and development of staff knowledge and practice certifications, along with clear procedure and training manuals and processes. In this roll out process it is anticipated that multiple locally adapted “tools of excellence” will be developed. Initially, a few GCs along with their associated catchment areas would be selected for enhancement. These pilot sites with ongoing surveillance and training will form the kernel of MNPH college field trainings. Lessons learned and experienced staff will then facilitate scale up with qualifying additional sites in the GC network.

For additional details please contact Vidar Jorgensen (vidar@wchnet.com) Dr Anita Shankar (avshanka@ jhsph.edu), and Lamiya Morshed (lamiya@grameen.com)