Building the Capacity of the Global Health Workforce: Challenges, Opportunities, and Future Directions

By

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A Master’s Paper submitted to the faculty of the University of North Carolina at Chapel Hill
In partial fulfillment of the requirements for the degree of Master of Public Health in the Public Health Leadership Program.

Chapel Hill

2010

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"Knowledge emerges only through invention and re-invention, through the restless, impatient, continuing, hopeful inquiry human beings pursue in the world, with the world, and with each other."

- Paulo Freire, Pedagogy of the Oppressed
ABSTRACT

Global flows of development assistance for health programs have increased greatly over the past decade. However, an adequately trained global health workforce – an integral component of a well-functioning health system - has not grown commensurate with the burgeoning public health programs funded by international donors. This has negatively affected the ability to expeditiously address global health disparities and inequalities as set forth in the internationally-recognized Millennium Development Goals (MDGs). The size and capacity of the health workforce in less-developed countries (LDCs) are currently constrained by limited educational opportunities within country. Individuals with enough resources to pursue higher education tend to do so in western nations, and often stay in those nations upon graduation so as to gain a higher income, in a concept known as ‘brain drain.’ Those individuals remaining in their home countries may be trained in the technical concepts of public health practice (i.e. clinical knowledge), but there is shortage of management and operational skills needed to make the technical programs run effectively. Innovative, low-cost and locally-available solutions to address the paucity of a trained health workforce are needed if the MDGs are to be met by the target-date of 2015 and maintained in subsequent years. These solutions must draw on proven management theories and techniques as well as the local knowledge of on-the-ground realities to sustainably address the needs of the communities in LDCs around the world. One example of such a solution is the online distance learning program offered through the University of North Carolina’s Public Health Leadership Program known as the ‘Global Learning Program.’ This program has been shown to increase not only the management skills of global public health professionals, but also to empower these individuals at a personal level to enact change in their health programs and communities. More initiatives such as the UNC Global Learning Program
are required to respond to the global community’s need for education programs in a local context, which will ultimately lead to the attainment of the MDGs and increased global equity.

INTRODUCTION

Depending on where one is born, one can expect to live, on average, as long as 83 years old (in Japan) or as short as 31 years old (in Swaziland) (Central Intelligence Agency, 2010). The African nation of Swaziland, and many other countries with the lowest life-expectancies, has the highest prevalence of infectious disease, namely HIV/AIDS. As seen in Figure 1, Sub-Saharan Africa has the shortest life expectancies of any region in the world; this same region remains the most heavily affected by the global HIV epidemic (2009; United Nations Millennium Project).

![Figure 1. Life Expectancy at Birth (2009 estimates) – from CIA World Factbook](image)

**Figure 1. Life Expectancy at Birth (2009 estimates) – from CIA World Factbook**

*Historical attempts to address global health disparities*

The fact that disparities such as these exist between the world’s peoples is well-known and has been recognized for decades. Global promises to address human deprivation stretch back to President Franklin D. Roosevelt’s ‘Four Freedoms’ speech of January 1941 and to the United Nations Declaration of Human Rights of 1948 (Hulme, 2009). The following decades saw
waxing and waning levels of target-setting and international summits meant to address development issues – education, health outcomes, economic growth, agriculture, and the environment (Hulme, 2009). 1995’s World Summit on Social Development in Copenhagen, however, represented a significant chapter in the world’s debate on ending global disparities. It was structured around three pillars – poverty reduction (from a multi-dimensional perspective), employment and social integration – but it was the first of these that dominated discussion. Indeed, the UNDP refers to Copenhagen as “…a giant step forward…with the new political commitment to eradicate poverty” (United Nations Development Programme (UNDP), 1997). One year later, in 1996, the Organization for Economic Cooperation and Development’s (OECD) Development Assistance Committee (DAC) had developed a list of ‘International Development Goals’ (IDGs) that all OECD members had approved (Hulme, 2009). The IDGs established “the idea that an authoritative list of concrete development goals could be drawn up and used as a mechanism to rapidly reduce global poverty” (Hulme, 2009). For the United Nations, the IDGs and the ‘the Millennium Assembly of the United Nations’ in 2000 represented, “an unprecedented opportunity to raise ambitions and open up political space for key issues that had not made enough progress” in the development agenda (Hulme, 2009). Following the Millennium Assembly, a task force from the UN, OECD, World Bank and IMF conducted the final technical and political negotiations to produce the list formally entitled ‘the Millennium Development Goals’ (Hulme, 2009).

The Millennium Development Goals (MDGs)
The MDGs seek to eradicate extreme poverty and hunger, address gender inequalities, improve health outcomes, and to ensure environmental sustainability¹ (United Nations Millennium Project). Since the inception of the MDGs in September 2000, governments of high-income countries and private philanthropists (e.g. Bill and Melinda Gates, Bill Clinton, and Warren Buffett) have poured money into the noble cause, and funding for global health has increased dramatically over the past decade. According to the World Bank, development assistance for health grew from US$2.5 billion in 1990 to almost US$14 billion in 2005 (World Bank, 2007). This increase in funding also saw parallel collaborative initiatives aimed at increasing access to essential vaccines and drugs (Matthews, 2004), for example the Global Initiative for Vaccines and Immunizations (GAVI). In addition, initiatives to address specific diseases, following MDG 6 – Combat HIV/AIDS, Malaria and Other Diseases – were also started. These include the Global Fund to Fight HIV/AIDS, Tuberculosis, and Malaria (GFATM), the US President’s Emergency Plan for AIDS Relief (PEPFAR), and the US President's Malaria Initiative (PMI). These initiatives have allocated historically high levels of funding towards these diseases. For example, since PEPFAR’s launch in 2003, over USD$32 million has been allocated towards HIV/AIDS relief – the largest amount for any single disease by any nation (Kaiser Family Foundation, 2009).

Meeting the MDGs: The debate about approaches

Jeffrey Sachs, a famous development economist and the director of Columbia University's Earth Institute, has been a strong supporter of the MDGs and has been active in getting the richest countries, including the United States, to open their pocket books to the cause. In his book, *The End of Poverty: Economic Possibilities for Our Time* (2005), the end of the global scourge will

¹ Please see Appendix I for the complete list of the MDGs and corresponding targets.
be found not through more budget-tightening in developing countries via World Bank Structural Adjustment Programs or through lectures about good governance and anti-corruption campaigns, but through an increase in aid to sub-Saharan African and other countries coordinated by the UN via the Millennium Project (Sachs, 2005). Put simply, in Sachs’s view, with more money, the world will be able to end poverty and meet the MDGs.

However, William Easterly, a professor of economics at New York University and a senior fellow at the Center for Global Development, opposes Sachs’s view. In Easterly’s book, The White Man’s Burden: Why the West’s Efforts to Aid the Rest Have Done So Much Ill and So Little Good (2006), Easterly asserts that finding a solution to poverty and other global disparities is not about how much money is spent, rather it is about how that money is spent (Easterly, 2006).

Achieving success in health outcomes: it takes more than just money

Let’s take a look at the numbers. Figure 2 shows there is moderate correlation between wealth of a nation and the life expectancy of its people.

However, there are examples which run contrary to this commonly held maxim:

Americans on average live to the age of 78 - Germans a bit longer - to the age of 79.

However, the United States’ per capita GDP (2009, est.) is $46,400 - Germany’s is a quarter less at $34,100 (Central Intelligence Agency, 2010). Moreover, Cubans, who live just as long as Americans (78 years), are able to do so on a per capita GDP of far less than their American neighbors - $9,700 (Central Intelligence Agency, 2010).
These figures help make a case for Easterly’s argument. Further support of this argument can be found in the fact that despite the international community’s outpouring of funds, and the availability of new technologies, medicines and interventions these funds have made possible, there is growing concern that the international community will not meet the MDGs by the target date of 2015. For example, after ten years of efforts, maternal mortality remains a top killer in developing countries: at present estimates, if no urgent corrective measures are taken, 2.5 million maternal deaths and 49 million maternal disabilities will hit Sub-Saharan Africa in the next decade (United Nations, 2010). Giving birth in developing countries is a risky business: while almost all women give birth under the supervision of a skilled health professional in developed countries, less than half of women receive such care when giving birth in parts of the developing world (see Figure 3) (United Nations, 2010).

In contrast, Sri Lanka, a low-income country with a per capita GDP of $4,500 (Central Intelligence Agency, 2010), has halved maternal deaths (relative to the number of live births) at least every 12 years since 1935 by extending health services through a widespread rural health network of
trained health care workers (Levine, 2007). A core component of the health services offered within Sri Lanka is its cadre of health care workers.

As the examples above illustrate, it takes more than money to achieve health within a nation. The World Health Organization has identified six essential building blocks\(^2\) of a health system – of which the health workforce is one (Murray & Frenk; World Health Organization, 2010). According to the World Health Organization, “health workers are the cornerstone of health care delivery system, influencing access, quality and costs of healthcare, and effective delivery of interventions for improved health outcomes, including progress towards the achievement of the health Millennium Development Goals” (World Health Organization, 2003). Unfortunately, although the workforce is recognized as one of the most important aspects of health systems it has been largely ignored as a funding priority in the recent outpouring of funding for health in low-income countries. For example, PEPFAR was lauded as the largest effort by any nation to combat a single disease (Office of U.S. Global AIDS Coordinator). However, as the name suggests, the program emphasis was placed on a short-term strategy to ease the ‘Emergency’ of the global HIV epidemic, and funds were allocated primarily towards treatment, care and support of individuals living with HIV or AIDS. Of the US$2.381 billion allocated for PEPFAR in US Fiscal Year 2006, only US$0.0045 billion (or 2.6%) of the budget was allocated towards ‘Other/Policy Analysis/System Strengthening,’ of which health workforce training is one component (Office of U.S. Global AIDS Coordinator, 2006). Without an adequate health workforce, there is a risk that any progress made to-date against the MDGs will not be sustained over time.

**THE NEED FOR BUILDING THE CAPACITY OF THE GLOBAL PUBLIC HEALTH WORKFORCE**

There is now a growing recognition that investments in workforce capacity building are critically needed and that, “without the improvements in the capacity of the workforce, newly mobilized funds and commodities will not deliver on their promise” (Narasimhan et al., 2004). For example, the Global Fund has begun to recognize the direct and positive causal link between the number of health workers and health outcomes, and has begun to increase funding accordingly (Drager, Gedik, & Dal Poz, 2006). This is a starting point – as Lincoln Chen from Harvard University’s Global Equity Initiative notes, “funders, both national and international, should greatly enhance their investments in information and knowledge on human resources” (Chen et al., 2004). These statements show the need for both *more* and *better-trained* health workers.

*Training versus Capacity Building*

Literature on workforce capacity building does not distinguish between training and capacity building; the two are used interchangeably. However, the difference is notable. Training implies skill development, but capacity building goes further and requires not only that skills be built, but that they also be used effectively. For the purposes of this paper, capacity building means not only training, but also empowering the health workforce to use these skills effectively to make sustainable changes in their daily work. It is one thing to know something, and quite another to apply it.

*Capacity building: an emphasis on the local context*

According to Easterly the world comprises ‘Planners’ and ‘Searchers’ (). Planners create sweeping top-down schemes in board rooms in developed countries, while Searchers identify local needs and then incorporate community perspectives to find solutions. Irrespective of which side of the Sachs/Easterly debate one favors, it would be hard to argue that local needs and
Community perspectives are unimportant. It is inconceivable that any long term solution to capacity building can take place without the empowerment of people ‘on-the-ground’ to identify solutions to their local problems.

Indeed, there has recently been a new approach in the west towards empowering local communities to make changes as they see fit. For example, the UK’s National Health System (NHS), recently released a document entitled, ‘Shifting the Balance of Power.’ The document sets forth NHS’ recognition of the benefits of moving away from the old way of doing business towards a new way which places “greater focus on team working and on enabling and supporting people and less on hierarchy and control” (United Kingdom Department of Health, 2002)(NHS – 2002). The UK-based reform will “create new working partnerships between patients and frontline staff who have the skills and knowledge to design, develop and deliver services geared to the needs and concerns of local communities” (United Kingdom Department of Health, 2002).

The Asian Forum for Health Research has proposed to shift how research priorities are set and by whom by emphasizing “research vision, equity, consumer orientation, and incentives for promoting locally generated information and ownership of knowledge” (Bunyavanich & Walkup, 2001). Bettcher and Lee, researchers in the World Health Organization and in the London School of Hygiene and Tropical Medicine, state that “in order to appropriately address health, [a] dynamic development oriented concept that seeks to find solutions to problems at their source” must be utilized (Bettcher & Lee, 2002).

Thus, a successful program to build the capacity of the global health workforce should blend practical ‘real-world’ field experience in a local context with overall technical and management expertise. This will “enhance the capacity of the system to prolong and multiply health effects -
a ‘value added’ dimension to the health outcomes offered by any particular health promotion program” (Hawe, Noort, King, & Jordens, 1997).

**CHALLENGES IN BUILDING CAPACITY OF GLOBAL WORKFORCE**

*Lack of long term funding*

As Laurie Garrett notes in her critical article, The Challenge of Global Health, “few donors seem to understand that it will take at least a full generation (if not two or three) to substantially improve public health—and that efforts should focus less on particular diseases than on broad measures that affect populations’ general well-being” (Garrett, 2007). Long-term donor funding is one challenge to creating training programs that can lead to capacity building.

*Brain drain*

Another is that in most low-income countries the workforce is unavailable or under-trained (Narasimhan et al., 2004). Part of the reason of the paucity of capable staff in the health workforce in developing countries is due to the ‘brain-drain.’ According to Garret, “the world is now short well over four million health-care workers. And as the populations of developed countries are aging and coming to require ever more medical attention, they are sucking away local health talent from developing countries” (Garrett, 2007).

With the best and the brightest being drawn out of their home countries and into the better-paying developed world, there are fewer people to do the work in the local context. Building the capacity of those remaining in country is also a challenge due to the differences in education systems.
Rote-based learning systems

For example, in some countries, a rote-learning system is used. In this case, the teacher is a source of knowledge, students repeat and memorize facts, but do not necessarily have to understand what they are doing or repeating. However, in order to respond to ever-changing health needs, it is necessary for individuals to not only know the facts taught through a rote-learning environment, but to also think critically and respond to the changing situation in innovative ways. Leaders within successful organizations must have the ability to “create shared knowledge and apply this learning to adapt to a rapidly changing environment” (Stewart, 1997).

Limited availability of training opportunities

Public health-specific learning may also be unavailable in certain countries. A public health professional in Ethiopia interviewed by the author stated, “you have no opportunity in Ethiopia to learn what you want to learn. … If I joined one of the universities in Ethiopia to continue Monitoring and Evaluation, I feel that it will not be possible to get such organized knowledge for my understanding.”

In response to this limited opportunity for education in public health topics, the United States Agency for International Development (USAID) and the World Health Organization (WHO) do provide international trainings for public health professionals. For example, USAID’s well-known program, the MEASURE Evaluation, provides regional trainings and workshops on various health topics, however the trainings are two weeks in length, in regional capital cities, and cost roughly USD$6,000 (MEASURE Evaluation, 2009). Logistically and financially, attending these trainings may be possible only for a few top-level staff members working in NGOs or in Ministries of Health in the developing world. Mid-level professionals (those who
implement the programs but who are not at higher levels within the organization) therefore have limited opportunities for continuing education.

*Lack of training in management skills*

Anecdotal evidence from professionals working in international development shows that management skills at this level are lacking. Joel Lamstein, President of John Snow, Inc. (JSI) - a public health research and consulting firm focusing on capacity-building - stated at the 2010 American Public Health Association Meeting, that it is easy to find people with technical skills (e.g. clinicians), but hard to find people with management skills and even harder to find managers with knowledge or sensitivities to technical areas.  In the world of education, it’s easy to find programs emphasizing technical skills from a developed-country perspective, but hard to find inexpensive programs that focus on blending the theories with real-world learnings.

**DEVELOPING EFFECTIVE TRAININGS FOR PUBLIC HEALTH PROFESSIONALS – CONCEPTS AND IDEAS**

In order to address the logistical expenses in bringing public health professionals to regional trainings, and in light of few educational opportunities in certain countries, online education presents itself as a low-cost option. With basic infrastructure such as computers and internet becoming increasingly more available in LDCs, online trainings would be able to reach public health professionals in their home offices, rather than drawing them away from important work to another training location for weeks on end. Online trainings could also be conducted across countries, allowing for programmatic ‘lessons-learned’ to be blended across the globe. By

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3 Reports from the US in the late 80s, 90s, and early part of this decade document this same issue throughout public health. See the Institute of Medicine’s 1988 report: *The future of public health.*
introducing participants to others from across the globe, these trainings would be able to blend the more traditional learning of concepts with creative application through ‘real-world’ examples and solutions.

This dynamic interplay between theory and practice was first described by Hungarian philosopher of science, Michael Polanyi, in 1967 as the difference between explicit and tacit knowing. These concepts have been transformed in knowledge sharing literature into tacit and explicit knowledge (Ramaswamy, 2008). Explicit knowledge, also referred to as “know-what”, is the kind of externally disseminated knowledge learned from text books, courses, seminars and other public vehicles and that is commonly held by all members who have participated in the dissemination process. Tacit knowledge, referred to as “know-how” is the personal knowledge that comes from infusing explicit knowledge with a person’s culture, contexts, experience and personality. Successful capacity building should leverage both kinds of knowledge. The University of North Carolina (UNC)’s Gillings School of Global Public Health sought to create a capacity building program for public health professionals in developing countries based on this principle.

CASE STUDY: THE UNC GLOBAL LEARNING PROGRAM (GLP)

The UNC Global Learning Program (GLP) is a non-degree, distance education program targeted at building the management skills of global mid-level public health professionals. The GLP promotes a blend of online instruction and virtual knowledge-sharing to better prepare practitioners to apply new skills to develop local solutions to public health problems. Currently

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4 The SECI model (Socialization, Externalization, Combination, Internalization) portrays the interaction between explicit and tacit knowledge and is described by Nonaka and Takeuchi in their famous book, *The Knowledge Creating Company* (Nonaka & Takeuchi, 1995).
in a two-year pilot-phase (2008 – 2010), the GLP has three online courses (known as ‘learning units’) in: Monitoring and Evaluation; Community Engagement; and Program Management\(^5\).

Each learning unit is designed to be eight-weeks in length and to focus on the application of practical concepts and tools to day-to-day work responsibilities. During the eight weeks, participants are required to complete: readings based on practical examples; weekly quizzes to test comprehension of the readings; and online group discussion tailored to draw on participants’ working experience. Successful participants are awarded a UNC certificate of completion.

To-date, 55 people from ten countries\(^6\) have participated in the initial pilot-phase of the program. Participant demographics have ranged from beginner to fluent English-speakers, and from a high school level of education to advanced degrees in a health-related field. Participants are employed by international and local non-governmental organizations (NGOs) as well as local ministries of health.

*Evaluating the pilot-phase of the Global Learning Program (GLP)*

To ensure continuous improvement in the learning units in the pilot-phase, as well as to assess the feasibility and usefulness of the GLP as a tool to enhance the management skills of the public health professionals, periodic evaluation measures were utilized. After each learning unit, statistics from the online classroom (BlackBoard) were used to quantitatively assess participants’ level of engagement with the various course components. Telephone interviews with Ethiopian and Indian participants were conducted after they completed their first learning unit (in February and April, 2010, respectively). Telephone interviews were conducted using a questionnaire

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\(^5\) For further information on the learning units, please see Appendix II.

\(^6\) The ten countries from which participants were drawn in the pilot-phase of the GLP were: Cambodia, Ethiopia, India, Lesotho, Sudan, Swaziland, Uganda, Senegal, Armenia and the United States.
which was developed based on components of the Kirkpatrick Model (see Table 1), a commonly used model for evaluating educational programs. The full questionnaire is shown in Appendix III. After initial data from the Blackboard statistics and telephone interviews was analyzed, a case-study approach was utilized (Yin) to develop an interview guide for use in face-to-face interviews in Ethiopia in August, 2010 (see Appendix IV). Ethical considerations for research with human subjects was approved by the University of North Carolina’s Office of Human Research Ethics Institutional Review Board. Qualitative data was analyzed using AtlasTi software.

*Effectiveness of the Global Learning Program*

Overwhelmingly, comments from participants reflected a very positive view of the GLP. Of the eight participants interviewed in Ethiopia, all stated a desire to participate in the GLP to improve their performance at work: “We need knowledge … to properly deliver projects.” Other students stated they had been planning to take a course in this type of subject matter – “When I got the opportunity to be part of the GLP, I am glad. It was one of my plans to study this type of program,” – but had thus far been unable to as participants felt that, “you have no opportunity in Ethiopia to learn what you want to learn.” Six of the eight participants also mentioned their excitement regarding participating in the GLP in light of the intrinsic value of knowledge and continued learning. As one participant said, “I believe in learning, learning, learning until the end of my breath.”

Participants also stated their desire to engage in the program was bolstered by the relevance of the material to their daily job – “when you see the question, you will be eager to answer that question, because it’s more practical and related with your work. It is related with every day of
your activity, so everybody participated due to that.” Because participants were from organizations with similar missions (improving the health of their countries / communities), participants also valued the opportunity to learn from and with their GLP colleagues. All eight participants stated they valued the others’ experience in the public health field. As one said, “from the development worker you will share their experience … the way I see it and the way other people see it may be different, so you would learn something from them.” Two participants also stated learning with others helped them to better learn the material. It helps, “… coming together and discuss on it, so that you could understand it very easily and you can internalize it.”

Participants found the GLP to be a useful and desired tool in gaining practical knowledge for their daily work. As one participant said, “after the course I learnt a lot - how to go through my projects, controlling and monitoring, evaluating things, how to approach my partners, go through the communities, go through the government office … it upgraded myself, I consider myself very lucky to have joined this program.” Another participant stated, “even now I have improved myself really much, much better than last year. I can prepare my fiscal year level - a better project I hope, I can prepare a better project.”

Finally, participants stated they were empowered through the GLP: “my knowledge gaps have been filled and my confidence has increased. If your confidence is increased we will feel proud.” The country director of the Ethiopia office stated that the GLP “has the ability of transforming people.” Pairing increased knowledge with personal empowerment is a powerful tool in transforming not only employees, but also the communities in which they work.

*Challenges*
GLP participants successfully completed the required readings and weekly quizzes. However, we found varying levels of participation in the discussion forums. As the discussion forums were an important component of the program to blend tacit and explicit knowledge, we sought to understand the barriers to successful participation in the discussion forums. In initial telephone interviews with the Indian and Ethiopian participants, we heard a lack of time was a major barrier to participation – mainly due to being so busy at work. However, all participants had relatively the same work load, so lack of time was not a satisfactory response to explain the varying levels of participation in the learning units among the participants.

Face-to-face interviews with Ethiopian participants further elucidated causes of low participation in the discussion forums. Several factors at the personal as well as the organizational and environmental levels emerged as causes.

One major personal factor affecting participation was a felt need for perfection in the discussion posts, which manifested itself as the need to read all of the course materials before engaging in conversation with peers. The felt need for perfection was sometimes exacerbated by the differences in English levels among participants. We found that English skills were lowest in local NGO and government staff. This may be due to the fact, as the Plan/International country director noted, “for [the international NGO], English is the medium of doing business. If you get someone who is working with the government, English is not the medium of doing business.” For this reason, staff at international NGOs did not have to make this leap as often between English and the local languages when completing work for the GLP.

Other organizational factors included the field location of some of the projects (which affected ability to access internet, as mentioned above), as well as organizational support for participants.
to complete required GLP work. For example we found that leadership within the organizations did not authorize or support time during the work-day for employees to work on the GLP. One participant said, “We are busy in the office during working hours - so I used my night times and weekends for this course.” Due to the fact that participants were not able to complete work in the office, some found it necessary to complete the work in internet cafes or by purchasing a wireless card to access the internet. The personal costs borne by the participants for internet connections made them more reluctant to spend large amounts of time online with the GLP: “even if I want to stay long in the blackboard, I don’t do it because if I do, I am going to pay a lot.” We also found the international NGO had a culture of sharing ideas, whereas the local NGOs and government offices were more hierarchical. This affected the participants’ notions of sharing ideas both in the office and by extension, in the online classroom.

Interestingly, although slow and/or limited internet was mentioned as a challenge to accessing the online discussion forums in parts of Ethiopia, participants stated they had developed work-around strategies to internet downtime, such as downloading materials when the internet was working, and drafting discussion posts in a word document to upload when the internet was available.

CONCLUSION

Over the past decade, the world has seen large increases in expenditures in public health in resource poor countries, with a focus on eliminating health disparities and achieving the Millennium Development Goals (MDGs). However, progress against the MDGs has not been as great as had been hoped or expected. This is due to the fact that money is not a panacea to the world’s health outcome disparities. Addressing all aspects of the health systems in developing
countries, including the knowledge and skills of the global health workforce, is the only way that the world will sustainably achieve the MDGs. A paradigm shift is beginning to occur in the international community as people move from a western-centric development model to one that focuses on building the capacity of local organizations to respond to public health challenges. As Michael Polyani says, “we know more than we can tell” (Polyani, 1967). In the context of international development, local public health professionals know more than they can tell about what is needed for sustainable change in their communities. Harnessing their local knowledge by blending knowledge sharing with distance education can further help to keep the learning and solutions from and for public health professionals in the field and out of far-removed board rooms of developed countries. As Freire said, “knowledge emerges only through invention and re-invention, through the restless, impatient, continuing, hopeful inquiry human beings pursue in the world, with the world, and with each other” (Freire, 1970). The UNC Global Learning Program allows for this hopeful inquiry to those that would otherwise not have this opportunity. Preliminary evaluation data from the GLP have shown the program can be a powerful tool to not only train staff in management skills and thus more effectively implement programs, but also to instill a sense of empowerment to sustainably address local communities’ needs. Expanding and continually improving programs such as the GLP are crucial steps in building the capacity of the global health workforce, thereby enabling the sustainable attainment of the MDGs and ultimately achieving equity in global health outcomes.
REFERENCES


education: Designing an inclusive and relevant global health curriculum for public health
professionals around the world*. (Unpublished MPH). University of North Carolina at Chapel
Hill, Chapel Hill.


Doubleday.

2009.

United Kingdom Department of Health. (2002). *Shifting the balance of power within the NHS:
The next steps*. London, England: Retrieved from
http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalassets/
dh_4073554.pdf

Nations.


Table 1. Kirkpatrick Training Evaluation Model

<table>
<thead>
<tr>
<th>evaluation type (what is measured)</th>
<th>evaluation description and characteristics</th>
<th>examples of evaluation tools and methods</th>
<th>relevance and practicability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reaction</td>
<td>Reaction evaluation is how the delegates felt, and their personal reactions to the training or learning experience, for example:</td>
<td>Typically 'happy sheets'.</td>
<td>Can be done immediately the training ends.</td>
</tr>
<tr>
<td>Did the trainees like and enjoy the training?</td>
<td>Feedback forms based on subjective personal reaction to the training experience.</td>
<td></td>
<td>Very easy to obtain reaction feedback</td>
</tr>
<tr>
<td>Did they consider the training relevant?</td>
<td>Feedback is not expensive to gather or to analyse for groups.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was it a good use of their time?</td>
<td>Verbal reaction which can be noted and analysed.</td>
<td>Important to know that people were not upset or disappointed.</td>
<td></td>
</tr>
<tr>
<td>Did they like the venue, the style, timing, domestics, etc?</td>
<td>Post-training surveys or questionnaires.</td>
<td>Important that people give a positive impression when relating their experience to others who might be deciding whether to experience same.</td>
<td></td>
</tr>
<tr>
<td>Level of participation.</td>
<td>Online evaluation or grading by delegates.</td>
<td></td>
<td></td>
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<tr>
<td>Ease and comfort of experience.</td>
<td>Subsequent verbal or written reports given by delegates to managers back at their jobs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of effort required to make the most of the learning.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived practicability and potential for applying the learning.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Learning</td>
<td>Learning evaluation is the measurement of the increase in knowledge or</td>
<td>Typically assessments or tests before and after the</td>
<td>Relatively simple to set up, but more investment and thought required than</td>
</tr>
</tbody>
</table>

Kirkpatrick Training Evaluation Model
http://www.businessballs.com/kirkpatricklearningevaluationmodel.htm
<table>
<thead>
<tr>
<th><strong>intellectual capability from before to after the learning experience:</strong></th>
<th>training.</th>
<th>reaction evaluation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview or observation can be used before and after although this is time-consuming and can be inconsistent.</td>
<td>Highly relevant and clear-cut for certain training such as quantifiable or technical skills.</td>
<td></td>
</tr>
</tbody>
</table>

| Did the trainee experience what was intended for them to experience? | Methods of assessment need to be closely related to the aims of the learning. | Less easy for more complex learning such as attitudinal development, which is famously difficult to assess. |

<table>
<thead>
<tr>
<th>What is the extent of advancement or change in the trainees after the training, in the direction or area that was intended?</th>
<th>Measurement and analysis is possible and easy on a group scale.</th>
<th>Cost escalates if systems are poorly designed, which increases work required to measure and analyse.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliable, clear scoring and measurements need to be established, so as to limit the risk of inconsistent assessment.</td>
<td>Hard-copy, electronic, online or interview style assessments are all possible.</td>
<td></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>3. Behaviour</th>
<th>Observation and interview over time are required to assess change, relevance of change, and sustainability of change.</th>
<th>Measurement of behaviour change is less easy to quantify and interpret than reaction and learning evaluation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behaviour evaluation is the extent to which the trainees applied the learning and changed their behaviour, and this can be immediately and several months after the training, depending on the situation:</td>
<td>Arbitrary snapshot assessments are not reliable because people change in different ways at different times.</td>
<td>Simple quick response systems unlikely to be adequate.</td>
</tr>
<tr>
<td>Did the trainees put their learning into effect when back on the job?</td>
<td>Assessments need to be subtle and ongoing, and then transferred to a</td>
<td>Cooperation and skill of observers, typically line-managers, are important factors, and difficult to</td>
</tr>
<tr>
<td>Question</td>
<td>Potential Analysis Tool</td>
<td>Control</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Were the relevant skills and knowledge used</td>
<td>Assessments need to be designed to reduce subjective judgement of the observer or interviewer, which is a variable factor that can affect reliability and consistency of measurements.</td>
<td>Management and analysis of ongoing subtle assessments are difficult, and virtually impossible without a well-designed system from the beginning.</td>
</tr>
<tr>
<td>Was there noticeable and measurable change in the activity and performance of the trainees when back in their roles?</td>
<td>The opinion of the trainee, which is a relevant indicator, is also subjective and unreliable, and so needs to be measured in a consistent defined way.</td>
<td>Evaluation of implementation and application is an extremely important assessment - there is little point in a good reaction and good increase in capability if nothing changes back in the job, therefore evaluation in this area is vital, albeit challenging.</td>
</tr>
<tr>
<td>Was the change in behaviour and new level of knowledge sustained?</td>
<td>360-degree feedback is useful method and need not be used before training, because respondents can make a judgement as to change after training, and this can be analysed for groups of respondents and trainees.</td>
<td></td>
</tr>
<tr>
<td>Would the trainee be able to transfer their learning to another person?</td>
<td>Assessments can be designed around relevant performance scenarios, and specific key performance indicators or criteria.</td>
<td>Behaviour change evaluation is possible given good support and involvement from line managers or trainees, so it is helpful to involve them from the start, and to identify benefits for them, which links to the level 4 evaluation below.</td>
</tr>
<tr>
<td>Is the trainee aware of their change in behaviour, knowledge, skill level?</td>
<td>Online and electronic assessments are more difficult to incorporate - assessments tend to be more successful when integrated within existing management and coaching protocols.</td>
<td></td>
</tr>
</tbody>
</table>
4. Results

| **Self-assessment can be useful, using carefully designed criteria and measurements.** |
|---|---|
| **Results** | Results evaluation is the effect on the business or environment resulting from the improved performance of the trainee - it is the acid test. |
| | It is possible that many of these measures are already in place via normal management systems and reporting. |
| | Individually, results evaluation is not particularly difficult; across an entire organisation it becomes very much more challenging, not least because of the reliance on line-management, and the frequency and scale of changing structures, responsibilities and roles, which complicates the process of attributing clear accountability. |
| **Measures would typically be business or organisational key performance indicators, such as:** | Measures would typically be business or organisational key performance indicators, such as: |
| | The challenge is to identify which and how relate to to the trainee's input and influence. |
| | Therefore it is important to identify and agree accountability and relevance with the trainee at the start of the training, so they understand what is to be measured. |
| | Also, external factors greatly affect organisational and business performance, which cloud the true cause of good or poor results. |
| **Volumes, values, percentages, timescales, return on investment, and other quantifiable aspects of organisational performance, for instance; numbers of complaints, staff turnover, attrition, failures, wastage, non-compliance, quality ratings, achievement of standards and accreditations, growth, retention, etc.** | Volumes, values, percentages, timescales, return on investment, and other quantifiable aspects of organisational performance, for instance; numbers of complaints, staff turnover, attrition, failures, wastage, non-compliance, quality ratings, achievement of standards and accreditations, growth, retention, etc. |
| | Therefore it is important to identify and agree accountability and relevance with the trainee at the start of the training, so they understand what is to be measured. |
| | This process overlays normal good management practice - it simply needs linking to the training input. |
| | Failure to link to training input type and timing will greatly reduce the ease by which results can be attributed to the training. |
| **Return On Investment?** | Failure to link to training input type and timing will greatly reduce the ease by which results can be attributed to the training. |
| | For senior people particularly, annual appraisals and ongoing agreement of key business objectives are integral to measuring business results derived from training. |
Appendix I – The Millennium Development Goals (Source: United Nations Millennium Project)

Goal 1: Eradicate extreme poverty and hunger

✔ Target 1: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day.
✔ Target 2: Halve, between 1990 and 2015, the proportion of people who suffer from hunger.

Goal 2: Achieve universal primary education

✔ Target 3: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling.

Goal 3: Promote gender equality and empower women

✔ Target 4: Eliminate gender disparity in primary and secondary education, preferably by 2005, and to all levels of education no later than 2015.

Goal 4: Reduce child mortality

✔ Target 5: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate.

Goal 5: Improve maternal health

✔ Target 6: Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio.

Goal 6: Combat HIV/AIDS, malaria and other diseases

✔ Target 7: Have halted by 2015 and begun to reverse the spread of HIV/AIDS.
✔ Target 8: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases.

Goal 7: Ensure environmental sustainability

✔ Target 9: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.
✔ Target 10: Halve, by 2015, the proportion of people without sustainable access to safe drinking water.
✔ Target 11: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers.

Goal 8: Develop a global partnership for development

✔ Target 12: Develop further an open, rule-based, predictable, non-discriminatory trading and financial system.
✔ Target 13: Address the special needs of the least developed countries.
✔ Target 14: Address the special needs of landlocked countries and small island developing states.
Target 15: Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term.

Target 16: In cooperation with developing countries, develop and implement strategies for decent and productive work for youth.

Target 17: In cooperation with pharmaceutical companies, provide access to affordable, essential drugs in developing countries.

Target 18: In cooperation with the private sector, make available the benefits of new technologies, especially information and communications.
### 1. Monitoring and Evaluation

In this learning unit, learn how to develop monitoring and evaluation (M&E) frameworks, how to collect and define indicators and collect data, how to design evaluation studies, and how to plan and manage M&E activities for health projects and programs. Case studies and examples of M&E plans from various countries and different health topics are presented. Participants are required to complete a group assignment in which they develop an M&E plan from actual demographic and health data.

### 2. Community Engagement

The focus of this learning unit is on improving participants' skills in working collaboratively with communities to achieve desirable health outcomes. Topics include understanding community needs, conducting joint planning activities, promoting engagement and participation, and designing and evaluating solutions to health issues. Case studies, tools, and methods for engaging communities in different contexts are presented.

### 3. Program Management

In order to achieve optimal project and program results, managers need to be able to manage their projects to meet time, cost, and quality requirements. This learning unit teaches project managers and leaders how to define and sequence activities, how to estimate resources, how to set project schedules, and how to estimate, budget, and control costs, with a focus on health projects.

### 4. Leading and Managing People

This learning unit trains participants on the key competencies or leadership, and how to be an ethical and effective leader of public health organizations. This learning unit is focused on organizational staff responsible for managing people, not just on the senior management of organizations. Participants learn both the attributes of leadership and the practical tools on how to manage in a day-to-day environment.

### 5. Managing Processes and Improving Quality

In order to consistently deliver health projects results successfully, managers need to understand the key processes in the organization and how these processes can be designed and improved in order to consistently and systematically achieve the required level of performance. This learning unit teaches participants how to define and document processes, how to measure process performance, and continuous quality improvement tools to enhance the effectiveness and efficiency of organizational performance.

### 6. Managing Organizational Change

Change is a fact of life in all organizations. Changes in funding sources, personnel, project priorities, and political climate are all factors that may require a rapid reconsideration and reconfiguration of organizational activities. The ability to manage change distinguishes successful organizations from those that just cope. This learning unit provides participants with tools for assessing an organization’s
readiness to change and skills for managing and leading change.
Appendix III. Questionnaire Used in Telephone Interviews with GLP Participants

Participant Name:  

Organization:  

Location:  

Interview Date and Time:  

I. STUDY DESCRIPTION AND INTRODUCTION

You recently completed the Monitoring and Evaluation learning unit in UNC’s Global Learning Program. We are evaluating the Global Learning Program to assess the participants’ learning experience and address any areas for improvement. Your responses in this interview can help us to improve our program in the future. The interview should last no more than 45 minutes, and will be tape recorded and transcribed. Although we’ll be transcribing the interview, your responses will remain anonymous in the final report. Is this ok? Do you have any questions before we get started?

II. PARTICIPANT BACKGROUND

1. To start, please tell us your title and a short description of what you do in your organization.

III. EXPERIENCE WITH LEARNING UNIT DELIVERY

2. Did you have access to a computer and to the internet when you needed it?

3. Did your supervisor provide time during the work day for you to complete course work?

4. How was your experience with Blackboard? Was it easy to use?

5. Were the instructions clear on where to go to access material and instructions and where to post?

6. Were the instructions for assignments clearly explained? (If not, which directions were confusing?)
7. How do you think the course ‘flowed?’ Were concepts presented in a logical manner? Did you understand the overall structure of the course?

8. (a) How satisfied are you with support from the instructors? Very satisfied with the course – time was very short to comprehend everything, but the course.

8(b) Do you feel it was easy to ask the instructors questions?

8(c) Do you feel the instructors responded soon enough after you asked them a question?

8(d) Do you think the guidance you received from the instructors was useful/helpful?

9. How can the delivery of the course be improved?

IV. EXPERIENCE WITH CONTENT

10. How much time did you spend each week on the course? As you may know, the course was designed so that each participant would spend about 5 hours per week on the material – do you feel the amount of content was appropriate for 5 hours a week?

11. Did you find the material to be too easy, too difficult, or just right? How can the material be improved?

12. Were the individual assignments too easy, too difficult, or just right? How can the individual assignments be improved?

13. Were the group assignments too easy, too difficult, or just right? How can the group assignments be improved?

V. EXPERIENCE WITH GROUP WORK AND KNOWLEDGE_SHARING

14. Did you feel that you adequately contributed comments and questions to the discussion forums? What factors would encourage you to participate in discussions? What factors are barriers to interaction?

15. Did you feel that you adequately shared your practical (job) experience relevant to the content of the learning unit? What factors would encourage you to share your experience? What factors are barriers to sharing?

16. Do you feel that you learned from the work and experience of other participants in the learning unit? What factors contribute to your learning from other participants? What factors are barriers to learning from others?
17. What are some actions that can be taken to improve your participation in discussions and learning from your peers?

18. Do you now feel that you have a network of peers that you can connect with and learn from in the future? What factors would contribute to sustaining such a network? What factors are barriers to these networks?

VI. **APPLICABILITY TO DAILY WORK**

19. Were there an adequate number of examples and case studies in the material? Do you feel the case studies and examples were relevant to your work? What factors make case studies and examples relevant?

20. Did the materials give you tools that you can now apply to your work? Are you applying any of the tools now? Which of these tools are you applying?

VII. **OVERALL LEARNING AND SATISFACTION**

21. Overall, to what extent did the learning unit meet your objectives for enhancing skills?

22. What are some actions that can be taken to enhance the ability of this learning unit to meet your objectives?

23. In your opinion, what are the most important factors that contribute to successful learning through distance education? What are the greatest barriers to successful learning through distance education?

24. What did you like most about the learning unit? What did you dislike most?

That was my last question. Do you have any other comments that you’d like to make about the learning unit? Your feedback is very valuable to us. Thank you for your time.
Appendix IV. Core questions used in Ethiopia face-to-face interviews

1. Think about your education within the Ethiopian system: What was the atmosphere in school?
2. Were you ever encouraged to debate with your teacher? If yes, was this a good thing? Did it happen often?
3. Did you debate with your fellow students?
4. What would happen if you didn’t turn in your assignments on time?
5. Now I’d like you to think about your job: How do you handle things if you disagree with your boss?
6. How were you selected to participate in the course?
7. Imagine the day when you were told you’d be in the Global Learning Program – how did you feel? Were there any things you were worried about?
8. How were you able to manage to balance fitting this coursework into your already busy day? Could you take me through an average day for your with work and the GLP assignments?
9. When you participated in this course, did you post to the blogs individually or as group?
10. Did you ask questions to participants from other countries?
11. How was it working in a group? When you were working in the group, did you feel everyone participated equally? Were there people who participated more than others?
12. How much knowledge sharing do you do with other people? Is this something you like to do? What do you think about the importance of knowledge sharing?
13. How was it to communicate online? How does this compare to face-to-face communication?
14. Sometimes rewards make us want to participate more or to do a better job … what kind of rewards would make you want to participate more?
15. Do you think you participated enough in the online discussions?
16. Now I’d like you to think about UNC. Before you started the GLP, did you know about UNC and its reputation?
17. Did you know that you’d receive a certificate from UNC after completing the learning unit?
18. What did you think about the level of support provided by the UNC professors?
19. What made you feel the proudest about this course?
20. How has this course changed you personally?
21. Thinking about the future: If someone at work was thinking about taking a learning unit through the GLP, how would you describe it to them? What would you say?
22. Do you think you would be interested in engaging in an online community for public health?