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Evaluation, Effectiveness, and Efficiency in Complex Humanitarian Emergencies:
The U.S. Centers for Disease Control and Prevention's WASH
Activities in Post-Earthquake Haiti

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Bachelor of Arts, Politics
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2007


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A thesis submitted to the Faculty of the
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# Abstract

Evaluation, Effectiveness, and Efficiency in Complex Humanitarian Emergencies:
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Activities in Post-Earthquake Haiti

By Christina L. Cadrecha

**Background:** Evaluation in emergencies, disaster relief, and reconstruction is often inadequate or incomplete. Although numerous actors, including UN agencies, non-governmental organizations (NGOs), and governmental agencies (GOs), provide aid, these efforts are often duplicative or insufficient for the needs of the affected populations. Further evaluation of these humanitarian responses is needed to improve program effectiveness.

**Objectives:** This study aims to assess the response and evaluation of the U.S. Centers for Disease Control and Prevention's (CDC) water, sanitation, and hygiene (WASH) response in post-earthquake Haiti.

**Methods:** To examine CDC's evaluation design, this paper uses a case study approach of the agency's work in post-earthquake Haiti. To inform the analysis, a total of six in-depth interviews were conducted, five within the CDC and one with an external consultant involved in Haiti post-earthquake operations. All those interviewed took part in the Haiti response, evaluation, or with post-disaster activities at CDC. Secondary data was collected from evaluation reports, strategic plans, policy documents, and government reports.

**Results:** In Haiti, a weak health infrastructure and competing programs created particular barriers for CDC's evaluation design capabilities. In the health systems reconstruction phase of its response, the agency is currently measuring its impact via a comprehensive strategic evaluation plan. This plan includes objectives, strategies, and indicators to evaluate the agency's work to improve the water infrastructure and reduce the threat of cholera in Haiti.

**Discussion:**  The CDC has made significant progress to strategically evaluate its activities in Haiti. However, due to competing programs and a lack of comprehensive international standards for emergency relief and reconstruction, the agency continues to face challenges in determining its evaluation criteria. Recommendations for strengthening the evaluation of CDC's WASH work include further defining the indicators, strategies, and objectives in the plan. Recommendations will be shared with CDC's Haiti Systems Reconstruction Office (HSRO) to assist them in their efforts to improve Haiti's WASH system.

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## LIST OF ABBREVIATIONS
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|---|---|
| *CDC* | U.S. Centers for Disease Control and Prevention |
| *CFR* | Case fatality rate |
| *CGH* | Center for Global Health |
| *CRS* | Catholic Relief Services |
| *CTC* | Cholera treatment center |
| *DEC* | Disasters Emergency Committee |
| *DFID* | Department for International Development |
| *HHS* | U.S. Department of Health and Human Services |
| *HWTS* | Household water treatment systems |
| *GO* | Governmental organization |
| *GOARN* | World Health Organization's Global Outbreak Alert and Response Network |
| *IASC* | Inter-Agency Standing Committee |
| *ICRC* | International Committee of the Red Cross |
| *IDP* | Internally displaced person |
| *IERHB* | International Emergency and Refugee Health Branch |
| *IFRC* | International Federation of Red Cross and Red Crescent Societies |
| *ISCA* | International Save the Children Alliance |
| *LWF* | Lutheran World Federation |
| *MSPP* | Haiti's Ministry of Health and Population |
| *NCEH* | National Center for Environmental Health |
| *NGO* | Non-governmental organization |
| *OECD* | Organisation for Economic Cooperation and Development |
| *ORT/ORS* | Oral rehydration therapy/oral rehydration solution |
| *PAHO* | Pan American Health Organization |
| *PIH* | Partners in Health |
| *SCHR* | Steering Committee for Humanitarian Response |
| *UN* | United Nations |
| *UNCHS* | United Nations Centre for Human Settlements |
| *USAID* | U.S. Agency for International Development |
| *USG* | United States Government |
| *WASH* | Water, Sanitation and Hygiene |
| *WCC* | World Council of Churches |
| *WFP* | World Food Programme |
| *WHO* | World Health Organization |

## INTRODUCTION

*"Both politically, in terms of being accountable to those who fund the system, and also ethically, in terms of making sure that you make the best use possible of available resources, evaluation is absolutely critical."*
– *Julio Frenk, Minister of Health, Mexico, 2005*

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Each year, people around the world are faced with the sudden occurrences of emergency situations, including earthquakes, eruptions of violence, tsunamis, and famines. These events can occur at any time and place. While many of these disasters cannot be predicted or prevented, it is imperative that responses to these events work to avert further loss of life and reduce harm. It is the poor who suffer most in these events, as they often live in areas with poor public health infrastructure. During a disaster, these already limited resources can become non-existent. Following a disaster, communities must rebuild, and frequently these vulnerable populations find themselves without the means or knowledge to respond during a relief and reconstruction effort.

Agencies including the United Nations (UN), the International Red Cross (IRC), and the U.S. Centers for Disease Control and Prevention (CDC) are called upon to provide assistance when needed. To successfully distribute aid relief, cooperation between various humanitarian agencies and governmental organizations (GOs) is imperative. While each complex emergency will vary – a different population, country, disease, or natural disaster – those affected still need the same things: food, shelter, safety, and security. Faced with a sudden emergency, agencies and organizations must work together quickly to provide these necessary requirements under stressful situations with often-limited resources. While this statement seems simple, there is much more to consider when these complex emergency situations strike. Which donors or agencies are providing aid? What type of aid are they providing? Are there enough vaccines, water, or food for the people who need them? How can these needed services be counted or measured? Are these the right services? What are the impacts of these services? During and following each emergency situation, staffers must determine if the assistance provided not only reached the target population, but also if it helped improve the status of those affected. Evaluation is the key to understanding the effectiveness of an intervention and whether or not it has made a positive difference for the vulnerable populations affected by a disaster or an emergency.

The next five chapters analyze the basic theories of evaluation design and utilization and how these have been applied in the international humanitarian aid world, following and during real world emergency situations. Chapter one provides a review of the basic tenets of evaluation theory. The field of evaluation is constantly

evolving. When choosing an evaluation design, program managers must look to both the process and content of the evaluation, as well as to the level of certainty that they want to achieve with the results. In this regard, the design of an evaluation refers to the way in which the evaluation is conducted, including the cost, stakeholders involved, how and when feedback is provided, as well as the timeline for the evaluation. Both process and content are critical to a successful evaluation. It is imperative that evaluators are flexible and open about their process in order to understand what is and what is not working, as well as how to fix any challenges along the way. Post-disaster or emergency situations present particularly complex environments for evaluations. This chapter also examines the establishment of international standards, known as the Sphere Project, to regulate and create standards for humanitarian aid response immediately following an emergency. Following the atrocities and lack of political will during the 1994 Rwandan genocide, international humanitarian organizations came to a consensus that their activities were not adequate and thus did not provide the right aid to those who needed it. Standards for evaluation are particularly important following disasters or emergency situations, as they help agencies and local authorities gain a perspective on whether or not relief efforts are providing the appropriate assistance.  While the concept of program improvement and evaluation is simple, the practice of evaluation is very different, especially in post-disaster emergencies. As gathering and analyzing the correct data is resource- and labor-intensive, often evaluations are done poorly – if at all.

Next, chapter two examines a country, Haiti, in context. In 2010, an
earthquake and an ongoing cholera epidemic devastated the impoverished and
fragile country. Examining the activities of an organization responding to a complex
humanitarian emergency, this chapter also discusses the involvement of the CDC in
the relief, recovery, and reconstruction efforts in Haiti. By exploring the context of
Haiti's history and health systems, the unique needs created by the earthquake and
subsequent cholera epidemic can be better understood.  Even before the
earthquake, Haitians suffered from a lack of basic needs, including access to water,
sanitation, and hygiene interventions. Following the earthquake, these already
fragile systems were disrupted and then failed as the introduction of cholera
sickened and killed thousands. As water is the most important resource for
sustaining human life, the CDC's activities in this sector are detailed in this chapter.

Chapter three provides a brief discussion of the methods of this study,
including the background, the data collection, analysis methods, and the goal of the
project.  A qualitative review, informed by primary and secondary research, of the
CDC's evaluation of its WASH activities in post-earthquake Haiti was conducted
from October 2011 to March 2012. Methods included 1) six in-depth interviews:
three of the interviews were with program staff involved directly with WASH in
post-earthquake Haiti, two were CDC staff involved in post-disaster activities and
evaluation, respectively, and the last was with an external consultant who worked
with the United States Navy on Haiti relief in the weeks following the 2010
earthquake; 2) Assessment of evaluation tools and frameworks used internally by
CDC's Haiti program staff; and 3) Examination of accepted international standards

and guidelines for international humanitarian response and relief. The CDC

frameworks and international standards served as a theoretical model for

evaluation design in an emergency situation, while the in-depth interviews provided

critical information on the activities CDC is involved with in Haiti and how the

agency has chosen to evaluate these activities to indicate program success.

Chapter four provides an overview of the evaluation design of the CDC's

WASH activities in Haiti during the recovery and reconstruction phases following

the earthquake and cholera epidemic.  By examining CDC's objectives and strategies,

this chapter outlines the agency's plan moving forward in Haiti. Evaluation plays an

important role in accountability and effectiveness – two important issues with the

current budget climate for U.S. government agencies. Examining CDC's involvement

in Haiti demonstrates CDC's commitment to global health abroad, as well as its

commitment to accurately account for the funds and resources it utilizes in these

efforts.

The final chapter presents recommendations to the CDC regarding the

agency's evaluation practices for its WASH reconstruction activities in Haiti. A

review of each strategy and objective is included. Based on secondary research of

international standards and competing WASH evaluations, recommendations are

provided to strengthen CDC's WASH evaluation design moving forward.

Natural disaster, war, and subsequent emergency response have and will

always be part of human life. As existing systems effectively respond and evolve, it is

important to step back and examine how well these efforts are addressing the needs

following an emergency. Evaluation is an essential tool that relief organizations and

government agencies can use to analyze the activities, outcomes, and impact of relief, response, and reconstruction following a disaster. By monitoring and evaluating the effectiveness of emergency activities, program organizers can not only understand the impact of their own program, but also what lessons can be learned for future responses. By understanding the need for effective and organized international response, evaluation is essential not only to create standardized activities across aid and relief groups, but also to ensure that the response will provide the best results for the affected populations.

# 1

## COMPREHENSIVE REVIEW OF THE LITERATURE

*"Health improvement is what public health professions strive to achieve. To reach this goal, we must devote our skill – and our will – to evaluating the effects of public health actions."*
*   – Jeffrey P. Koplan, Former Director, U.S. Centers for Disease Control and Prevention*

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Public health professionals endeavor to improve the health statuses of populations around the world. To reach this goal, evaluations are essential to increasing impact, understanding outcomes, and correcting errors in programs. Evaluation can be applied not only for infectious disease programs, but also in diverse public health plans such as chronic disease, injury prevention, capacity building, and improving social determinants that affect health in populations. By providing systematic information on a program, evaluators can both gain information to prevent mistakes from being made again in the future and show program benefits, which can increase investor's interest and confidence in a program.

Evaluation is especially critical for global health. Even while these large programs can cost millions – or even billions – of dollars, many of the programs

cannot show their impact. In recent decades, the number of these large-scale interventions has grown, and yet evaluating these programs remains an afterthought (Editorial 2010). Without accountability, funders and organizations are not sure how their programs are affecting target populations, or even if these activities are producing beneficial or harmful outcomes. Many organizations and agencies, including the CDC and the United States Agency for International Development (USAID), now recognize that their programs should base their decisions on research that has been proven in the field. These results, known as evidence-based or translational research, represent the interface between science and practice. When programs are made without systematically understanding the environment or without reviewing current literature or research, often they do not make a positive difference for the target population.

**Evaluation Theories and Practice**

      Documented practitioner research is substantially greater in education than in social and health services. Two reasons for this gap have been identified. First, in the social and health service world, randomized controlled study designs are the gold standard and other designs are deemed less rigorous or conclusive. Second, public health is inherently governmental, which creates the challenge of working with various partners, understanding the complex world of funding mechanisms, and public private partnerships. These complex systems in the health and social world often slow the adoption of new strategies, as it takes time to change existing standards regarding different or creative forms of research and evaluation

(Dahlberg 2010). In the public sector, it is imperative to be a good steward of taxpayer money. As demands for professional accountability increase, agencies must be interested and involved in research and evaluation.

The need for evidence-based actions and the use of performance indicators, quality assurance, and evaluations suggest that organizations should place greater emphasis on utilizing research to inform their actions and decision-making (Dahlberg 2010). To create stronger relationships between social science researchers and policy-makers, evidence-based research in global health programs is especially needed to reinforce equity-based policies and sustain influential programs (Delisle 2005).

For the purpose of this paper, evaluation, not research, is examined. Research, however, plays a major part in evaluation. When a program is well informed and established based on current research, the evaluation will show that the program is providing the most effective care or performing the appropriate activities for the target population. Programs should use evidence-based research to improve their outcomes. Primarily, evaluation and research differ in their outcomes. Evaluation strives to provide timely and constructive information to improve program performance, while research is performed to advance knowledge and theories about scientific truths. Additionally, research is done in a controlled environment, whereas evaluators work in the real world with program managers and staff to evaluate the needs of a particular program (University of Washington 2005).

The evaluation process involves many steps, from proposal writing, identifying and prepping an evaluation task force, establishing and clarifying goals and objectives, choosing an evaluation design, designing a data collection methodology, gathering and managing the information to analyzing the data, making recommendations, and utilizing the results and design for future programs (Patton 1982). The content of the evaluation pertains to what the findings of a particular evaluation may consist of, including the data collected, analysis recommendations (Patton 1982). Even when evaluations are unsuccessful, they can provide critical information about a program and how it is evaluated.

### *Different Evaluation Designs for Diverse Measurements*

Four forms of evaluation are commonly used to gauge the effectiveness of health and development programs.  Formative evaluation, the first type, is performed prior to program implementation. During this evaluation, program managers assess the strengths and weaknesses of program materials and strategies in order to tailor the program to its target audiences. By testing messages and materials with focus groups ahead of implementation, managers are able to maximize the program's effectiveness before activities begin (Minnesota Department of Health 2012).

The second, process evaluation, monitors the procedures and tasks involved in program implementation.  A process evaluation examines administrative and organizational activities of the program to ensure that they are on track based on the goals and objectives set out at the commencement of the program.  By collecting

monitoring data throughout a program, the process evaluation confirms that ongoing feedback is available during the entirety of the program, allowing the evaluator to assess whether the program was implemented as planned. By using process data, program managers can make course corrections during the program to better achieve objectives and strategies.

Process indicators produce output measures, which provide information on the immediate results – or outputs – of program activities; for example, the number of people with access to the program, the number of people participating in program, or the number of trainings or workshops held (Minnesota Department of Health 2012). The results of a process evaluation should be reviewed throughout the program. In many cases with programs, managers will establish a process evaluation to document that the program is achieving the goals set forth during the program "planning" stage. Following this phase, the evaluators will work to document and analyze the development and implementation of the program. By assessing whether the strategies and activities occurred as planned, the evaluators are examining the process of the program, and thus can help inform the results of the program's outputs (Bureau of Justice Assistance 1997).

Understanding the operating environment of a program is critical for its success. To verify the program's effectiveness, managers must first understand what a "success" actually would be in the environment.  To plan for the environment and how certain external factors might affect the program's outcome, managers are encouraged to establish a "program analysis" stage prior to implementation (Bureau of Justice Assistance 1997). This analysis will help inform the program, as well as

provide a baseline understanding ahead of the establishment of the program in the community. Additionally, it can be anticipated that changes or shift in the environment may occur during the program. These changes should be documented to shed light on the external validity of the program and how the results of the program might apply to other communities.

Outcome evaluation, the third type, is used to collect descriptive data on a project and understand the short-term results of the program. This data allows evaluators to look at the impact, benefits, and changes to the target population. An outcome evaluation uses the information collected through monitoring or process evaluation implementation and provides a summary on the task-related data collected throughout the program. The comprehensive program data provides information about the immediate effects of the program on the target population. These effects could include changes in skills, attitudes, or behavior awareness (Minnesota Department of Health 2012).

What differentiates an outcome evaluation from a process evaluation are its emphases on the changes occurring as a result of the program, not what occurred in the program itself. For example, a program to encourage people to quit smoking could have process indicators that measure the number of smokers who attend meetings to understand the risk of smoking and strategies to quit. The outcome measure of this same program could include the number of smokers who quit smoking.  The outcome measures a change in behavior or action as a result of the program. In this example, smokers who participated in the program might change their behavior following the program as a result of the meetings they attended.

The fourth, and most comprehensive, form of evaluation is the "impact" evaluation. This type of evaluation focuses primarily on the long-term outputs and results of a program to gauge what the changes in health status might be as a result of the program. This type of evaluation assesses what behaviors or changes can be attributed to the program. To understand the true impact of a program, this type of evaluation often involves a counterfactual analysis, where the program population is compared against a similar population who did not participate in the program. By examining the program population ("intervention") versus the non-program population ("control"), evaluators can begin to understand the impact and outcomes of a program. While comprehensive, determining the overall impact of a program is very challenging and costly. Outcomes that result directly from the program are difficult to determine, so often other confounding factors might affect outcomes. Output measures in an impact evaluation often include changes in morbidity or mortality of the program population, which are affected by a number of contextual factors outside the control of the program (Minnesota Department of Health 2012).

While these four types are the most common forms of evaluation, they are not mutually exclusive. In a program, it is likely that program managers will chose to perform several of these evaluations in order to collect various points of information about the impact, outcomes, weaknesses, and benefits of the program.

*Evaluation Design: Varying Levels of Inference*

In addition to deciding on what evaluation design a program will choose, it is important also to examine other factors, including the efficacy of the intervention or

program, the field of knowledge around the intervention, timing, and resources available (Habicht, Victora et al. 1999). As discussed above, evaluation designs vary in complexity and cost. Those that examine program impacts are more difficult and complicated than a process evaluation that only looks at program activities.

When choosing what kind of evaluation design, a program manager must not only look at what she wants to measure with the evaluation, but also how sure she wants to be that the observed effects in the target population are due to the program or other external factors. Based on the available resources, time, and preferences of the funders, a program manager must decide on one of three kinds of evaluation inferences: adequacy, plausibility or probability. The first kind, adequacy, is the cheapest, but also it produces the most ambiguous results. In an adequacy assessment, evaluators are looking at how well the intervention activities met pre-determined goals set before the program, for example how many students have enrolled in school or how many people have been vaccinated against measles (Habicht, Victora et al. 1999). As there is no control group in an adequacy evaluation, there is no way to determine with certainty that the changes in the intervention population were due to the program or to other factors. Adequacy assessments can be sufficient, however, when it is known that an intervention produces certain results. For example, if it has been determined that the introduction of national vaccination days can improve vaccine coverage level, an adequacy evaluation to examine vaccine levels before and during a national vaccination day may be enough to satisfy a funder. Plausibility assessments, the second kind of inference, provide more information on the direct results of the

program. In a plausibility assessment, evaluators compare the intervention group to a control group that is similar on all accounts except for the exposure to the intervention. By gathering data at regular increments for both groups, evaluators in this inference can see, with more certainty than with an adequacy assessment, that the program had an effect above and beyond other factors (Habicht, Victora et al. 1999). In a probability assessment, evaluators aim to create only a very small chance that the variation between intervention and control group were due to confounding or bias. They do this by randomizing treatment and control groups, in order to ensure that the probability of confounding is measurable (Habicht, Victora et al. 1999). While probability assessment provide the best results, they are often too expensive or resource-intensive and not pursued. When choosing which evaluation design and inference for a program, it is important to think not only about what managers want to measure, but how also how they will measure it and how sure they want to be of their results. These choices are important not only for the evaluation design, but also to ensure that programs are providing the most important data to decision-makers and funders based on the resources available.

### *Policy: The Intersection of Evaluation and Practice*

In 2000, the United Nations announced the Millennium Development Goals (MDGs), which increased interest in large-scale health and development programs. While this attention increased funding and resources to these programs, it also became clear that many of these programs, including HIV/AIDS, tuberculosis, water, and education, had never been evaluated accurately (Victora 2011). For years, these

programs had received billions of dollars to improve living conditions, reduce

poverty, and improve health conditions, but there was little evidence that these

programs had any positive impact on their target populations. MDGs are not the

only programs that face these challenges. Many public programs also lack this

evidence-based research. In high-income countries, often resources are misused and

monetary and material waste can reach into the hundreds of millions of dollars. In

low- and middle-income countries, the needs of the population need to be

accurately determined, and resources, often scarce or limited, need to be used

appropriately (Oxman, Bjorndal et al. 2010). Programs based solely on good

intentions and plausible theories are not adequate.

At the 58th session of the World Health Assembly, the Ministerial Summit on

Health Research urged member states "to establish or strengthen mechanisms to

transfer knowledge in support of evidence-based public health and health-care

delivery systems, and evidence-based health-related policies" (Oxman, Bjorndal et

al. 2010). As a result of the misuse or misplacement of resources, researchers argue

that impact evaluations should always be performed on public programs. Many

policy-makers overlook or take issue to this recommendation, as these evaluations

have the potential to demonstrate where these officials are falling short in their

duties or ideologies. Additional challenges exist regarding carrying out the

evaluations themselves.

Evaluation is not universally implemented. Many see evaluation as an

additional expense or strain on already limited resources. USAID and the National

Science Foundation recommend that 10% of a program's budget should be devoted

to monitoring and evaluation. For many program managers, this amount of money could mean the difference between fully implementing a program and not. Thus, with good intentions, many people often spend less than, or sometimes none, of their budget on program evaluation.

Due to resource constraints or time limitations, evaluations and research for programs are often done internally. These internal evaluations have several advantages. First, internal actors hold specific knowledge about their organization's programs and organizational culture. Additionally, these internal actors often know the most pertinent and relevant questions to ask.  While these advantages provide benefits to an organization, internal evaluations often provide biased outcomes that create concerns regarding the external validity of their results. In contrast, when performing an external evaluation, evaluators often do not have any organizational authority to implement change within the group they are examining. Even without this authority, however, these external agents must be seen as trustworthy and without an agenda in order to receive important information from internal actors (Dahlberg 2010). Thomas Chapel, Chief Evaluation Officer at CDC, agrees, saying:

> *There are trade-offs between internal and external evaluation. External evaluation has advantages, because the results are likely to be perceived as unbiased and there's no fear of spinning or cooking data, because the evaluation is designed and conducted by outsiders. External evaluation often ends, however, with the evaluation report. One of the main intents of evaluation is to learn about the program through the evaluation and then to move forward and improve based on the findings. When evaluations are done internally or have heavy involvement of the program in the early steps – as is often the case at CDC – you see that evaluations are more likely to yield relevant findings and that the program being evaluated is more likely to take lessons learned to move forward on program improvement. This is an important aspect of evaluation and helps make the investment and time worthwhile (T. Chapel, personal communication, March 8, 2012).*

Some organizations, including the CDC, choose to do their evaluations internally. At the CDC, many states must write grant proposals to receive money from the federal agency. To receive ongoing funding, these state programs have to evaluate their programs and present their results (Appendix A, Interview 2). Other programs, including those in the agency's Center for Global Health (CGH), have program-specific evaluations, where programs will do their own evaluations based on subject matter expertise, including malaria, HIV/AIDS and refugee health. Other organizations, like CARE and Save the Children, must perform evaluations as part of funding agreements. Many of these non-governmental organizations (NGOs) contract with external consultants or organizations for more transparency.

While program evaluation is an accepted organizational practice for public health programs, evaluation in post-disaster and humanitarian emergencies presents additional challenges. First, conflicts and disasters often require immediate response, so little time is available to strategize or set up frameworks for monitoring and evaluation (Appendix 1, Interview 3). The circumstances following a disaster create challenges for the program team to set up and implement a successful program to meet the needs of the vulnerable population. The United Nations Centre for Human Settlements (UNCHS) cites seven factors that can affect the effectiveness of post-disaster programs:

(1) **Responding to local needs** by understanding what the affected population needs. Without this direction, a program's impact will be limited;

(2) **Understanding the situation dynamics** in order to see all the factors which have both caused and affect the program. This includes knowing who the

main actors are and what power dynamics exist that may affect how a program can be designed or implemented;

(3) **Misallocation of resources**, which can lead to important funds or human resources to be given to unsuccessful projects. Other projects may adversely be affected if resources are given to failed projects;

(4)  **Short-termism**, defined as not placing the program in the larger context of post-disaster rehabilitation. Without considering the long-term consequences or impact of the program, it can become unsustainable and overly expensive;

(5) **Dependency vs. capacity**, which, like short-termism, is focused on the long-term effects of the program. Humanitarian actors should aim to build capacity for affected regions, not create dependency so that when those funds or resources are gone, the community is left in need;

(6) **Accountability** not only helps to ensure that the project is successful for the affected population, but also to prevent future errors or failed projects; and

(7) **Quality assessment**, which is important for learning from past mistakes and ensuring that they do not happen again in the future (The United Nations Centre for Human Settlements Habitat 2001).

While these factors cited above are overwhelming, they are not insurmountable. Evaluation can help address many of these challenges (The United Nations Centre for Human Settlements Habitat 2001). By building in evaluation processes into the project design, the needs of the population and the program's impact can be monitored and analyzed. Unfortunately, many post-disaster programs do not take

the time or effort to implement an evaluation design.  By not building in this assessment, many humanitarian organizations have been criticized for not only providing inadequate relief, but also for actually harming populations in the process.

During the 1990s, the world saw an increase in the number of humanitarian emergencies, from the genocide in Rwanda, the famine in Sudan, and the war in Bosnia. With global political and media attention on these conflicts, the world also saw an increase in the number of international activities of humanitarian agencies and aid organizations, including military and newly established development organizations. Since 1995, official humanitarian assistance has increased by 50% (Riddell 2007).

## The Rise of Humanitarian Aid Evaluation

From early April to mid-July 1994, an estimated 800,000 people were killed in Rwanda. The killing was the result of a long-standing ethnic conflict between the minority Tutsi population, who held political and social control for centuries, and the majority Hutu peoples, who had overthrown the Tutsi monarchy in a rebellion in 1962. Following the assassination of Hutu President Juvénal Habyarimana on April 6, 1994, Hutu groups began killing Tutsis, who the Hutus blamed them for the killing.  The national government, local military, civil officials, and the nationally run media channels supported these murderers (Human Rights Watch 1999). After the genocide ended, much criticism was leveled at the international community and aid organizations. They were accused of standing by and letting the killing occur. As Carl Wilkens from the Adventist Development and Relief Agency International, said, "If

the people in Rwanda ever needed help, it now was the time. And everyone was leaving."(Barker 2004)

The Rwandan genocide served as a very public reminder of the role that the international community can choose – or not choose – to play in events of disaster, war, or humanitarian response. Critics claimed officials of international governments, including the United States and France, were aware of the killings, but chose not to act. Instead, governments leaned on the United Nations to handle the peacekeeping efforts with limited resources (U.S. Department of State 1994). The United States did not launch a substantial effort to stop the genocide until late July 1994. By this point, nearly 800,000 Rwandans had been killed and many more were displaced due to the conflict.

The Rwandan genocide proved to be a failure in both the international diplomatic and aid communities. Following the genocide, the development group within the Danish Ministry of Foreign Affairs (DANIDA) proposed that a comprehensive evaluation be performed on emergency assistance to Rwanda. This initiative, called the Joint Evaluation of Emergency Assistance to Rwanda (JEEAR), became a multinational, multi-donor evaluation effort to draw on efforts from the Rwandan conflict which might be relevant to future complex emergencies, as well as how to continue to mitigate and manage tensions and resulting conflicts following crisis in the recovery and rehabilitation phases. The JEEAR committee included representatives from nine multi agencies and UN groups, the ICRC and the International Federation of Red Cross and Red Crescent Societies (IFRC), five international NGOs, 19 Organisation for Economic Cooperation and Development

(OECD)-member bilateral donor agencies, the European Union and the Development Assistance Committee (DAC) of the OECD. While the evaluation was directed by a 38-strong Steering Committee, the day-to-day management of the initiative was led by the evaluation departments of the Swedish aid agency body Sida, Norway's Norad, Danida, the UK's Overseas Development Administration (now DFID) and the U.S. Agency for International Development (USAID) (Borton 2004).

The main objective of the evaluation was to "draw lessons from the Rwanda experience relevant for future complex emergencies as well as for current operations in Rwanda and the region" (Eriksson 1996). The evaluation consisted of four separate studies: (1) Historical Perspective; (2) Early Warning and Conflict Management; (3) Humanitarian Aid and Effects; and (4) Rebuilding Post Genocide Rwanda. The third study on humanitarian aid is relevant for this paper, so it will be discussed in detail.

Led by John Borton, Emery Brusset, and Alistair Hallam, this study looked at humanitarian aid and physical protection provided by the international community during the Rwanda genocide from the period April to November 1994. In order to fully examine the humanitarian efforts, evaluators first had to take stock of what aid had been provided on the ground. They discovered that relief had been provided to Rwandans prior to the April 6 shooting (the date associated with the beginning of the genocide). Instead, evaluators saw that tensions in the Great Lakes region had created nearly 900,000 internally-displaced persons (IDPs) in Rwanda (Eriksson 1996). In response to this crisis, the ICRC, the Rwandese Red Cross, and the World Food Programme (WFP) helped provide food to those in camps. In These IDP camps

persisted during the genocide. Evaluators saw that between 80,000 and 100,000

people died in these camps in Zaire, Tanzania, and Rwanda in 1994 (Eriksson 1996).

What was significant about these findings was that many of these people died from

preventable or treatable causes, including cholera and dysentery. Had the

humanitarian response before and during the genocide been more effective, many of

these deaths could have been avoided. While nearly 200 NGOs were involved in the

response, it was difficult to ascertain what each NGO did to contribute to the efforts.

The study found that one of the major limitations for humanitarian aid was the

discrepancy in available and timely information, saying the researchers found:

> *Remarkable variation in the amount and quality of information on the situation in a given area depending on the agencies involved. Thus for some areas, especially the refugee camps, detailed information on morbidity and mortality was readily available whereas inside Rwanda such information was extremely patchy (Eriksson 1996, p. 31).*

Additionally, the team recommended that NGOs needed a better way to coordinate

activities and outcomes to provide more effective and beneficial outcomes, saying

"NGOs performed in an unprofessional and irresponsible manner that resulted not

only in duplication and wasted resources but, in a few egregious cases, in

unnecessary loss of life (Eriksson 1996)." The report concluded that if humanitarian

agencies had done a better job of coordinating their response in Rwanda, more lives

would have been saved. The players recognized that their response efforts needed

to change in way that would not create duplicative efforts or leave major gaps that

harmed populations at risk.

In 1995, UN Secretary General Boutros Boutros-Ghali issued a report outlining not only the complex nature of humanitarian disasters, but also calling humanitarian organizations to action, saying:

> *Recent experience illustrates the importance of a well-organized and adequately resourced mechanism for coordination, both within the multi-actor humanitarian arena and with other elements of the international…this is particularly evident in rapid and simultaneous mass population movements, where it is often difficult to move quickly enough to mobilize and deploy resources in a manner that will prevent avoidable deaths (United Nations 1995, p. 1).*

The report, written as a direct response to the criticism that arose from the Rwandan genocide and previous conflicts in Somalia, reiterated the concept of the humanitarian imperative. In a demonstration of the international community's resolve to improve humanitarian aid and response, the results of the JEEAR and the resolve of the UN stimulated the international players to work together to create standards to guide humanitarian assistance.


### *The Code of Conduct: Creating a Baseline for Humanitarian Response*

The growing criticism of humanitarian response efforts led to two major projects to create standards for accountability and effectiveness in the international community. The first, the Ombudsman project, was led by the British Red Cross and aimed to create an independent office that would act as an accountability enforcer for humanitarian agencies in relief work (Gostelow 1999). The second, called the ALNAP project, established a forum for accountability, where agencies could come together and "gather, analyse and disseminate information and research on evaluations" to create a collective responsibility (Gostelow 1999). In response to

this growing discontent in the international community, the Steering Committee for

Humanitarian Response (SCHR), composed of senior representatives from high-

level NGOs including the IFRC, Caritas Internationalis, Catholic Relief Services (CRS),

the International Save the Children Alliance (ISCA), the Lutheran World Federation

(LWF), Oxfam, and the World Council of Churches (WCC), led the development of a

code to standardize behaviors during recovery and response, along with the

International Committee of the Red Cross (ICRC).

The Code of Conduct for the International Red Cross and Red Crescent

Movement and NGOs in Disaster Relief, published and disseminated in 1994, was

developed for a variety of reasons. First, the number of disasters that agencies were

responding to was growing. At the time of publication, tens of millions of people

lived in conflict situations or were affected by disasters. These relief efforts needed

to be better organized. Second, the field of disaster relief was changing to include

not only charitable organizations, but also privately donated and tax-financed

resources that provided resources, but had limited experience in the disaster sector.

Third, the reduced capacity of governments in many developing countries to care

for their citizens following emergencies left humanitarian agencies as the primary

player in assisting vulnerable populations following emergencies. Finally, increased

criticism following humanitarian relief efforts increased pressure on responding

agencies to provide relief and aid in the best interests of the affected populations

(Relief and Rehabilitation Network 1994).

Humanitarian agencies can declare their support for the Code and

committing themselves publically to it by signing it and abiding by its principles. To

explain the Code to the humanitarian world, the preamble to the code appeared in

the *World Disasters Report* in 1994, stating:

> *What few people outside of the disaster-response system realise is that all of these [humanitarian] agencies, from the old to the new, from the multi-million dollar outfits to one-man shows, have no accepted body of professional standards to guide their work. There is still an assumption in many countries that disaster relief is essentially "charitable" work and therefore anything that is done in the name of helping disaster victims is acceptable. However, this is far from the truth. Agencies, whether experienced or newly-created, can make mistakes, be misguided and sometimes deliberately misuse the trust that is placed in them* (International Federation of Red Cross and Red Crescent Societies 1994, p. 3).

The Principles of Conduct directly address the above concerns. These Principles lay

out the expected behavior that humanitarian actors should abide by during

emergency relief, building consensus among humanitarian actors on their actions.

The first four Principles are: "The humanitarian imperative comes first," "Aid is

given regardless of the race, creed or nationality of the recipients and without

adverse distinction of any kind,"  "Aid priorities are calculated on the basis of need

alone," and "Aid will not be used to further a particular political or religious

standpoint"(Relief and Rehabilitation Network 1994). These Principles are not

contentious in the humanitarian community, as they represent the actions to which

humanitarian actors should adhere in their behaviors.

The Code was revolutionary, as they represented the first time the

humanitarian community agreed on what they should be doing in these responses

and committed themselves to these behaviors in the future. Additionally, the Code

acts as a statement of behaviors that agencies can publically support to raise

awareness about disaster relief efforts and their own commitments. Additionally, it

can be used to assist agencies in designing their relief programs, mission

statements, guidelines, and internal material (Relief and Rehabilitation Network 1994).

Limitations exist, however. These Principles are not specific about how humanitarian actors, once committing their support to the Code, can follow through with these behaviors. No measurement tool or system for accountability exists. The Code is voluntary, meaning that no international association exists to police these standards or sanction any activities(Gostelow 1999). Therefore, this Code is self-regulating by those who support it. While support for the Code has been widespread, critics have said that voluntary commitment to the standards is insufficient to ensure that the standards and behaviors are addressed in emergencies. This absence of a regulation body to monitor, enforce, or evaluate adherence is the Code's primary weakness. Even acknowledging this limitation, more than 150 agencies have signed up for the Code since 1994.

### *The Sphere Project: Introducing Standards for Humanitarian Aid*

Understanding that the Code of Conduct had limitations, the SCHR convened again to improve the accountability of the humanitarian system. In 1997, representatives from NGOs and UN agencies – including UNHCR, WHO, and WFP – convened to develop a set of principles and standards to guide humanitarian agencies as they carried out the Code of Conduct. The resulting product, the Sphere Handbook, was released to the public in 2000. This document connects the humanitarian principles outlined in the Code of Conduct with standards of service delivery in emergencies. Two section of the Handbook were particularly

revolutionary. The first, the Humanitarian Charter, serves as the principle

introduction and cornerstone for the Handbook. This Charter is based on the

provisions of international humanitarian law, international human rights law,

refugee law and the Code of Conduct.  This Charter outlines the core principles of

humanitarian actors and points out the legal responsibilities of states and groups in

conflict to provide assistance to those who need it. If they are unable to provide this

assistance, they obligated to allow humanitarian agencies to enter their countries

and provide relief aid (The Sphere Project 2011). The second section, the core

standards are a set of minimum standards that describe the processes and

approaches necessary in a humanitarian response. These standards were written in

order to provide direction and comprehensive guidance on understanding the need

and context of the disaster, how and where to coordinate among agencies, as well as

the commitment to improve performance of humanitarian activities.

When creating the standards for the Handbook, the authors divided

humanitarian activities into four sectors:  (1) Water, supply, sanitation, and hygiene

promotion; (2) Food security and nutrition; (3) Shelter, settlement and non-food

items; and (4) Health action. Experts from NGOs and the Red Cross worked to write

standards for their area of expertise. The goal of this project was to improve the

quality of humanitarian response by setting standards, and therefore international

accountability, for these sectors.

After the initial publication of the Sphere Handbook in 2000, two subsequent

editions have also been released, in 2004 and 2011. While the second edition only

changed the Handbook slightly – adding 13 new languages and basic re-wording, the

2011 edition was a major overhaul (Appendix A, Interview 3). This edition took

nearly three years to complete and involved nearly 650 experts from 300

humanitarian agencies, including the UN. Among the revisions were a re-written

humanitarian charter and a new chapter on the "protection principles." The 2011

edition also worked to break out the standards into four sections: the standard, key

actions to attain the minimum standard, key indicators to serve as signals to show if

the standard has been met, and finally guidance notes that serve to provide

additional information on challenges with the standard, including controversies or

gaps in knowledge on scientific or diplomatic issues (The Sphere Project 2011).

The rolling-out of new editions also involves translation, updating the

training materials, and updating the website. On revising the Handbook, Peter

Walker, Director of the Feinstein International Center at Tufts University, said,

"What keeps Sphere Handbook relevant is its insistence on being evidence-based

and thus open to being updated as new evidence of needs and best practice come to

light"(The Sphere Project 2011).

The Sphere Project, which grew directly from the recommendations of the

Rwandan evaluation, serves as a self-regulating system for the humanitarian

community by incorporating the Code and ensuring cohesion and consistence

among agreeing parties (Gostelow 1999). Called "one of the most successful

humanitarian initiatives of the last decade," the Sphere project helped align

humanitarian agencies to common goals: improve the effectiveness of humanitarian

efforts and enhance the accountability of the humanitarian system (The Sphere

Project 2011). What makes Sphere unique is that it involved many of the most

powerful humanitarian organizations, including the Red Cross Red Crescent

movements, as well as governments in the planning and implementation process. As

a voluntary initiative, Sphere garnered consensus and buy-in from hundreds of

organizations works to transform lofty ideals into concrete benchmarks that help

achieve greater quality and accountability.

### *Adherence and Evaluation: Limitations of the Sphere Project*

When creating the Sphere Handbook, the SCHR wanted to align standards

and activities around the ten humanitarian principles to provide more guidance for

measurement and evaluation. While Sphere sought to bring agencies together and

improve effectiveness in response, limitations existed, especially around

compliances with the Code. When responding to humanitarian disasters, two

aspects of the response are vitally important: having adequate resources and

coordination. What Sphere does well is gauge the competence of those actors on the

ground by guiding them to do the "correct" actions and use the "correct" indicators

to gauge success (see Table 1 for example standard, actions, and indicators). While

the Sphere standards can recommend what a humanitarian actor should be doing,

they do not address how to improve the implementation or utility of the program or

product. To improve use of the product, additional information is needed, including

knowing if the target population has access to it, what happens if the activity cannot

be done, or whether the activity should even be done at all in the context of the

emergency. "Sphere embodies the 'why', 'when' and the 'what' of humanitarian

response, but not the 'whether' or 'how'" (Gostelow 1999). Serving as a document

synthesizing existing guidelines and best practices, the Sphere Handbook acts more

as a reference document than a manual of how to improve humanitarian response.

Users have access to the recommended standards and activities, but there is still no

oversight organization to ensure that users of the Handbook adhere to the

standards and activities presented.

**Table 1: WASH Standard 1: WASH Programme Design and Implementation**

| WASH needs of the affected population are met and users are involved in the design, management and maintenance of the facilities where appropriate. | |
| --- | --- |
| **Key Actions** | • Identify key risks of public health importance in consultation with the affected population.<br>• Provide and address the public health needs of the affected population according to their priority needs.<br>• Systematically seek feedback on the design and acceptability of both facilities and promotional methods from all different user groups on all WASH programme activities. |
| **Key Indicators** | • All groups within the population have safe and equitable access to WASH resources and facilities, use the facilities provided and take action to reduce the public health risk.<br>• All WASH staff communicates clearly and respectfully with those affected and share project information openly with them, including knowing how to answer questions from community members about the project.<br>• Thereisasysteminplaceforthemanagementandmaintenanceoffacilitiesas appropriate and different groups contribute equitably.<br>• All users are satisfied that the design and implementation of the WASH programme have led to increased security and restoration of dignity. |

In 2005, the Disasters Emergency Committee (DEC) published an evaluation

following the 2001 earthquake in Gujarat, India. In addition to rating the overall

response efforts, the evaluators also examined how the Code of Conduct was used.

For DEC, the UK's coordinating organization for disaster response, all relief and

response staff are required to use the Code in order to provide standardized care

and efforts across the organization. By including it in their report, the evaluators

also examined whether or not the Code, its principles and standards were valid

performance measures. In one section, the report stated:

*The Red Cross Code can be used effectively in evaluation as a measure of quality. In the full report we take each Principle in turn, focus on key issues (as far as possible those specified in the terms of reference) and then examine performance against the Principle. We are able to show which Principles require more attention and thus focus attention on learning...However, because of the lack of indicators of compliance with code they were forced to rate overall performance based on the aggregation of their impressions and judgment rather than on an objective measurement (Disasters Emergency Committee 2001, p. 13).*

Additional concerns have also been raised about the ability to monitor and evaluate the progress of these standards. The key indicators presented in the 2011 edition were not, however, included in previous editions, so before 2011, humanitarian actors were using the standards, but did not have a consistent framework to measure the success of their activities.  Now in circulation for less than a year, these indicators have the potential to make an impact in terms of how humanitarian programs can be evaluated. Questions remain concerning these new indicators. Are these standards relevant to programs in the context of emergencies? Are these standards relevant in the context of different emergencies and conflicts? Can they be measured? Should they all be measured, or should some indicators be prioritized? The indicators provide a baseline for evaluation, but they do not include how, when, how often information should be gathered or from who it should be gathered (Appendix A, Interview 3). They need to be tested and reviewed in the field to truly understand their accuracy and usability.

Criticisms have arisen regarding the language of the Sphere standards as well. Even though adherence to the codes is voluntary, the language in Sphere remains cautious. For example, the code standards say that participating organizations "shall endeavour to" rather than "shall." The language does not

provide clear direction, and allows for interpretation and malleability in actions. While this allows for flexibility for responders, it also makes evaluation across organizations – and even disasters – difficult, as there is no right or wrong action. An organization could have "endeavoured" to provide clean water, or they could have provided clean water. Under the wording of the code, both would be successful efforts, yet they would have produced very different results for the population in need. As these concerns continue to arise in the international community, it will only be through the examination of the Sphere Handbook and its indicators in real life situations that its capabilities can be evaluated.

On January 12, 2010, the resolve of the international humanitarian community was tested: A 7.0 earthquake hit Haiti near Léogâne, a town approximately 16 miles from Port-au-Prince, Haiti's capital (Millar 2010). The earthquake was devastating, killing over 200,000 and injuring over 300,000 people. In a matter of hours, over 30,000 office buildings collapsed, including that of Haiti's Ministry of Health and Population (MSPP) (Centers for Disease Control and Prevention 2011). The fragile state of the Haitian health system and the large populations living in poverty created the perfect storm for a humanitarian emergency.

# 2

## HAITI, A CASE STUDY IN EMERGENCY RESPONSE AND RECONSTRUCTION

*"There hasn't been cholera in Haiti for more than fifty years…so their immune systems have no exposure, which will help the disease spread more rapidly. And then, of course, nurses and doctors also have not seen this disease in several generations. So it's a terrifying situation, rooted… in the lack of infrastructure, lack of sanitation and clean water, which has been very clearly—very clearly slowed down and diminished by manipulation from the outside."*
  – *Evan Lyon, MD, Physician at Partners in Health*

_____

As the rest of the Americas enjoyed improved health in the 20th century,

Haiti's public health system has lagged. Arguably one of the poorest countries in the

Western Hemisphere, Haiti's health reflected its low-income and poor

infrastructure. Before 2010, childhood mortality was high at 171 per 1000, maternal

mortality was high, infectious diseases, including rabies, malaria and tuberculosis,

were prevalent in the country, and national immunization and surveillance

programs did not provide universal coverage. Even basic health needs were not met,

as only 63% of Haitians had access to adequate water sources and only 17% to

improved sanitation facilities in 2008 (World Health Organization/UNICEF 2010).

With limited access to clean water, diarrheal disease was the leading cause of death among children in Haiti (Dowell 2011). These indicators of poor health were not unsurprising, given the tumultuous history of this small country.

***Haiti in Context: History of a Fragile Health System***

In 1804, Haiti declared independence and became the first black republic in the Western Hemisphere. Following this uprising, the people of Haiti still faced adversity in their independence. In 1825, France demanded payment of 150 million francs from Haitians to make up for the slaves and land that the country lost when Haiti declared its independence; and from 1915 to 1934, the U.S. military occupied Haiti to demonstrate their dominance in the Western Hemisphere (Farmer and Mukherjee 2011). While Haitians have strived for their independence, constant challenges have stood in the way of the country creating a strong and sustainable infrastructure.

When the earthquake struck in 2010, it hit the fragile country, just reeling from previous recent disasters. Over a period of three weeks in fall 2008, three storms hit Haiti, affecting nearly 650,000 people. The third storm, hurricane Hanna, caused major flooding, destroying nearly 80% of rice crops in the Artibonite valley, submerging roads and bridges, and cutting Haitians off from needed food, water, and medical supplies (Caroll 2008).

When the 2010 earthquake occurred, it completely devastated Haiti's already damaged system. The earthquake caused the MSPP building to collapse, killing more than 200 staff (World Health Organization 2011). This tragedy effectively wiped out

the existing health administration for the country.  With more than 200,000 dead

and thousands injured, the country's limited resources were not enough to handle

this catastrophe. Within three days, a Health Cluster began operating in the country.

These "Clusters" are determined by the World Health Organization (WHO) and

include groups of partners, including NGOs and Governmental organizations (GOs),

that can work together at the global/regional and country levels to provide health in

a diligent and cohesive manner (World Health Organization 2012). The Cluster

strategy grew out of Humanitarian aid reforms in 2005, and was designed to build

greater predictability and effective inter-agency response. The World Health

Organization, as a lead agency, is responsible for developing global partnerships

that will meet the needs of the Cluster countries, as well as to monitor and evaluate

the work on the ground (Inter-Agency Standing Committee 2009). While the Cluster

quickly began to work on projects including the establishment of a surveillance

system, the distribution of medicines, vaccines and health care, an outbreak of

cholera in Fall 2010 complicated an already critical situation for those groups on the

ground.

On October 19, 2010, MSPP publically reported laboratory confirmation of

cholera.  Cholera had not been present in Haiti since the 1960s (Partners in Health

2012). Due to the widespread displacement of Haitian populations, thousands of

people were living in small quarters with no access to public sanitation or clean

drinking water.  These populations were highly susceptible to waterborne diseases,

so once the bacteria were introduced into the country, cholera spread quickly.

Within a matter of months, cholera had spread from sewage to drinking water

sources to all provinces of the country. By December 31, 2010, more than 170,000

were sick and more than 3,600 people died from the disease (Ministere de la Sante

Publique et de la Population 2011).

Cholera is an acute intestinal infection caused by ingesting food or water

contaminated with *Vibrio cholerae*, the bacterium that causes the disease. An

estimated 90% of those infected do not have symptoms, although the bacteria can

be present in feces for 7-14 days following infection. For those who do become ill,

symptoms include leg cramps, vomiting, and the development of a high-volume,

painless, watery diarrhea that can result 12 to 24 hours after infection (Partners in

Health 2012; World Health Organization 2012). If left untreated, patients can go into

shock and die due to rapid dehydration. Populations primarily at risk include the

young, the elderly, and malnourished (Partners in Health 2012). According to the

WHO, the recommended treatment for cholera is oral rehydration therapy (ORT),

which is made from a combination of salt, sugar, and water. Other treatments

include intravenous fluids and antibiotics to decrease the volume of diarrhea

(Partners in Health 2012). If left untreated, cholera can have a 20% mortality rate,

but with timely treatment, mortality rates can be as low as 1%.

Cholera is a global disease, but it disproportionately affects poorer

populations, as they most often do not have access to safe drinking water, adequate

sanitation, and compromised standards of hygiene. Without infrastructure for

sewage systems or latrines, populations often get their drinking water from the

same water sources used for defecation. While boiling water will kill the cholera

bacteria, many people are unaware of the risk or cannot afford the fuel needed for the process.

Hundreds of international agencies and organizations, including the CDC, the Pan American Health Organization (PAHO), and the ICRC responded quickly. While some organizations were already on the ground in Haiti through the WHO's Global Cluster deployment, new measures needed to be implemented immediately to diagnose and treat the hundreds of patients who were flooding into Haiti's crippled health system.

### International Response: CDC's Involvement in Haiti

As one of the organizations in the Global Cluster formed by the World Health Organization following the earthquake, the CDC began working on the ground in January 2010. CDC is the United States' federal agency that works to protect the public's health and safety through developing and applying disease control and prevention strategies (Centers for Disease Control and Prevention 2012). Working within the Department of Health and Human Services (DHHS), CDC is the nation's public health institute. CDC provides public health expertise to aid humanitarian crises and responses as part of its ongoing global health work.

Established in 2010, the Center for Global Health (CGH) executes CDC's global health approach abroad, by enhancing the public health capacity of its global partners, increasing health security and maximizing programs that utilize on scientific rigor and research (Frieden and De Cock 2012). Through CGH, CDC currently has nearly 400 long-term staff working in 55 countries (Frieden and De Cock 2012). While CDC occasionally assists in the implementation of programs

abroad, the agency's work focuses on providing technical assistance to organizations. This assistance is provided primarily to the Ministries of Health (MOH) to build or improve the public health capacities in country. These capacities could include laboratory, surveillance, epidemiology-training programs, and data management.

CGH is comprised of four distinct divisions – the Division of Global HIV/AIDS, the Division of Parasitic Diseases and Malaria, the Division of Public Health Systems and Workforce Development, and the Division of Global Disease Detection and Emergency Response – that each manages and evaluates health programs in partnership with Ministries of Health and international organizations. These programs include disease eradication, reducing morbidity and mortality due to both infectious and chronic disease, and strengthening health systems (Centers for Disease Control and Prevention 2011). The fourth division, the Division of Global Disease Detection and Emergency Response (DGDDER) works to detect threats and responds to emergencies worldwide. To strengthen and respond to public health system needs following the Haiti earthquake, CDC established the Health Systems Reconstruction Office (HSRO) in 2010. Within this office, HSRO experts perform a variety of activities and services, including establishing laboratory and surveillance systems, training epidemiologists, launching vector control programs, and improving water sanitation and hygiene (WASH) interventions (Centers for Disease Control and Prevention 2011). In the two years since becoming involved, CDC has sent more than 300 scientists and staff to Haiti to assist in the recovery and reconstruction efforts (Centers for Disease Control and Prevention 2012). Through

CDC, HSRO has established a national disease system to track infectious diseases, helped to rebuild medical service delivery systems, and assisted MSPP in laboratory capabilities to use rapid diagnostic tests to identify infectious diseases, including cholera.

While CDC entered Haiti at the request of the MSPP in January 2010, the agency had a long-standing Global Aids Program (GAP) in the country. Following the earthquake, CDC staff continued this HIV/AIDS work, as well as adding humanitarian relief response and coordination operations. When cholera was positively identified in Haiti, CDC deployed additional medical officers, epidemiologists, laboratory scientists, environmental health specialists, communication specialists, public health advisors, planners, information technology specialists, and support staff to assist in treating those who had the disease and preventing future spread.

**Rebuilding Haiti's Key Infrastructure: CDC's WASH Activities**

With access to safe water, nearly 10% of the global disease burden could be prevented through clean water strategies, including increasing access to safe drinking water, improving sanitation and hygiene, and improving water management to reduce the risk of water-borne infectious disease (World Health Organization 2008). To improve water, sanitation, and hygiene, the World Health Organization recommends that public health measures including building simple latrines to prevent water contamination waste, making soap available, raising awareness about frequent hand-washing, and ensuring safe storage of drinking

water can have high impacts on the health of global communities (World Health Organization 2008). Through the improvement of safe water measures, benefits including increased economic productivity, higher education rates and health-care savings can result. As cholera is a disease resulting from poor health and inadequate access to sanitation facilities, much of CDC's work in Haiti to step the cholera epidemic has focused on WASH in Haiti.

In global health work, improving WASH conditions is a necessary priority. CDC's global WASH program works both on long-term prevention and control measures that improve health, reduce poverty, and on responding to global emergencies and outbreaks (Centers for Disease Control and Prevention 2012). For CDC, their activities in Haiti address both on prevention and control. Even pre-earthquake, Haitians were living with limited water and sanitation systems. Following the earthquake and the introduction of cholera, it was essential to reduce the impact of the disease and help improve the country's infrastructure to prevent future WASH-related diseases.

As mentioned, the CDC provides technical assistance along with other U.S. government agencies, MOHs, NGOs and other international agencies (Centers for Disease Control and Prevention 2012). CDC's Global WASH team focuses primarily on six strategies to improve WASH:

(1) **Making water safe to drink and use** by using CDC's Safe Water System (SWS), which involves water treatment in homes, health facilities, and schools;

(2)  **Improving hygiene and sanitation** through improving the efficacy and

integration of interventions in community organizations, including schools;

(3) **Responding to complex international emergencies and outbreaks** that

will benefit from CDC's technical assistance and expertise. The CDC must be

invited in by the host country to work;

(4) **Controlling and eliminating disease** is a primary reason to incorporate

safe WASH practices in order to prevent mortality or morbidity resulting

from diseases including Guinea worm, cholera and trachoma;

(5) **Identifying and characterizing disease** is important in order to understand

the cause of illness in order to determine how best to treat cases and prevent

future ones; and

(6) **Education and training about Global Water, Sanitation, and Hygiene**

involves CDC building capacity for public health staff in other countries so

that they can carry on these programs after CDC ends its work in the country

(Centers for Disease Control and Prevention 2012).

While the water groups work on many different activities, the number of people

who perform WASH activities at CDC is limited. Compared to the hundreds of

epidemiologists at CDC, there are only an estimated 20 experts capable of doing

field WASH work (Appendix A, Interview 5). In the past 10 years, CDC's water work

has shifted from a domestic to an international focus.  To understand CDC's WASH

projects in Haiti, it is first necessary to understand the larger context of global

WASH at CDC.

The Global WASH team the team is made up of members from four different programs at CDC (Appendix A, Interview 5). The first, the International Emergency and Refugee Health Branch (IERHB), focuses on providing assistance immediately following and during international emergencies and in refugee camps. The second, the Household treatment team, works to provide safe water to populations at the household level. This team grew out of the Latin America cholera outbreak of the 1990s; the third, the National Center for Environmental Health, works at the community and household level to implement community-level interventions, including water safety plans, WHO's recommended methodology and strategies to assess and manage risk for drinking water. The fourth team, the waterborne disease laboratory team, is involved in sampling and analysis for both emergency outbreak situations and other projects. For example, when a response is needed, CDC pulls people familiar with WASH activities to work on the response, based on the context. If the situation demands WASH work in refugee camps, then IERHB would be called upon, but if it is working with a MOH in South America on a cholera epidemic, it might be the waterborne and household treatment teams that provide experts. While the four water groups do collaborate and communicate within the agency, the Haiti response was the first time that all teams were working in the same place on the same issues.

In Haiti, there have been three main phases of response: the immediate relief in the aftermath of the earthquake (January – October 2010); the response to the cholera epidemic (October 2010-March 2011); and the ongoing reconstruction efforts to improve infrastructure and health systems in Haiti (March 2011-present).

CDC has been involved throughout all three of these phases, though in different ways and through various activities (Appendix A, Interview 1). From CDC, the existing water teams were utilized to respond to the relief and reconstruction efforts. In addition, new hires were made from NGOs and engineering consultancies to help advise and assist with the development work.

Each of the three phases of CDC's response in Haiti has been very different. During the first phase, IERHB was the primary group involved. As mentioned, IERHB's mission is to "bring public health and epidemiologic principles to the aid of populations affected by complex humanitarian emergencies and are responsible for implementing and coordinating the CDC's response to complex humanitarian emergencies" (Centers for Disease Control and Prevention 2012). This work included improving rapid health and nutritional surveillance, providing technical assistance to the MSPP, preventing disease, planning and implementing trainings to build capacity, and working with other international relief and humanitarian agencies. As water needs were determined, water experts from both IERHB and the household treatment team were deployed to provide clean water to Haitians living in refugee camps and who were living in households cut off from debilitated or destroyed water systems. Following the onset of the cholera epidemic in October 2010, the two additional WASH programs – the National Center for Environmental Health and the Waterborne Disease Laboratory team – were deployed to Haiti to work with the MSPP to help control the spread of cholera in the country (Appendix A, Interview 5). During phase two, or the immediate cholera response, activities were much more hands-on and were easier to measure immediate outcomes:

chlorinate X out of every Y water sources, train people to do bucket chlorination, build latrines, among others.  Additionally, in this second phase CDC primarily assisted in a medical capacity to cholera, including distributing chlorination for water treatment, buckets and storage containers for sanitation purposes. Cholera cases increased during the rainy season in 2011, but then returned to a low rate. Once cholera was controlled, CDC activities turned primarily towards long-term reconstruction, the third phase of the Haiti response.

### *Reconstruction Health Systems: CDC's Ongoing Activities in Haiti*

Before the earthquake, Haiti had a limited and weak water infrastructure system. In March 2011, the MSPP identified the sustainable reconstruction of Haiti's water infrastructure as a major priority.  CDC's water team experts, previously deployed for relief and response, remained in Haiti to advise and assist with this project. Rather than thinking in just an emergency relief mindset, this third phase of response allows the MSPP, CDC, and other partners to look at improving systems and creating sustainable interventions that will help not only to solve current issues in Haiti, but also to help prevent future similar situations from occurring again. Two strategic objectives were identified for the water teams: (1) increase access to improved drinking water through WASH activities; and (2) maintain a rolling cholera case fatality rate of less than 1%, a level defined by the WHO to be a "well-organized response" (World Health Organization 2000).

To address the first strategic goal, the water team focused on building capacity of Haiti's water infrastructure by expanding household water treatment

and safe storage facilities and improving access to water and sanitation facilities in communities and public institutions. By working on building local capacity and establishing systems to monitor levels, CDC is assisting not only in helping prevent the spread of the current cholera epidemic, but the agency is also working to create a long-term sustainable water system that will help prevent future water-borne outbreaks. As part of CDC's technical assistance, the agency has partnered with DINEPA, Haiti's primary water company. To create local capacity at DINEPA, CDC is focused on training 200-250 municipal technicians, who will be responsible for WASH activities within each municipality within Haiti, which will strengthen water systems like household treatments. During first two phases of response, the map of Haiti's water system was in high demand. To control the spread of cholera, chlorinating water sources is a recommended strategy. Unfortunately, no formal mapping of the system had taken place, so no one had any records of the numbers of existing water sources. Another responsibility of these technicians will be to count, map, and chlorinate the water sources in their municipalities.

To maintain the cholera case fatality rate below 1%, the second strategic objective, CDC is calling on the agency's evidence-based experience to scale-up scientific programs sustainably. First, the agency is continuing to work with the MSPP to establish laboratory-based sentinel site surveillance for cholera and other waterborne and foodborne diseases. By integrating a through surveillance system into Haiti's public health system, cholera clusters can be monitored, identified and, therefore, controlled earlier. CDC is also working with community partners to educate communities on the signs and symptoms of cholera through community

health workers and public awareness campaigns.  By addressing underlying issues in this ongoing phase, CDC is helping to improve health for Haitians in the long-term.  Challenges continue to exist, however, as CDC and the MSPP must work in a volatile environment where the needs of the country's vulnerable populations must be continually monitored.

One of the challenges of creating these programs for the WASH team in Haiti is that many of the team's current activities and projects represent a relatively new direction for the agency. Much of the technical assistance that CDC currently provides, both globally and domestically, contributes and assists in medical, rather than in development, capacity. In this case, however, CDC is helping to establish the infrastructure for a long-term water system in Haiti. Rather than focusing specifically on providing medical assistance – for example procuring and distributing vaccines or training community health workers to improve maternal mortality rates – this work will assist Haitians with developing their country's basic infrastructure for water. This work has brought several challenges: 1) This has previously been the work performed by USAID, whose mission it is to provide development assistance abroad; 2) As this is a new focus for CDC, there are no previous projects that can serve as models or roadmaps; and 3) No WASH center exists at CDC, so much of the work is done collaboratively between four various groups at CDC.

*Evaluating the Impact: CDC's WASH Activities in Haiti*

In the days following the earthquake in Haiti, CDC subject matter experts prepared a series of pre-decision briefs for public health action on specific high-priority threats (Centers for Disease Control and Prevention 2010). These briefs, which covered topics from dengue fever, malaria, and influenza to cholera and typhoid fever, provided key recommendations to assist the MSPP, the U.S. Government, NGOs and other responding parties when planning how to respond to the disaster. Posted on March 2, 2010, the cholera pre-brief discusses not only the likelihood of cholera in Haiti, but also which measures to take to reduce the threat of the disease. For several reasons, including the fact that epidemic cholera had not been reported in Haiti before, the authors stated that "cholera [was] extremely unlikely to occur...as [relief workers were] likely to have access to adequate sanitation and hygiene facilities within Haiti, such that any cholera organisms they import would be safely contained" (Centers for Disease Control and Prevention 2010). In hindsight, this statement made an important assumption that turned out to be incorrect: all relief workers in Haiti did not have adequate sanitation and hygiene facilities while in country. Since the cholera epidemic began, scientific studies have shown that the cholera strain was virtually identical to a strain from Nepal, a country that sent a group of peacekeepers for the UN's mission in Haiti (Sontag 2012). Based on this information, it was hypothesized that the faulty sanitation systems at the Minustah base – where the Nepalese peacekeepers were living – allowed cholera-infected feces to enter the river tributary next to the base

(Sontag 2012). While diarrhea was common among Haitians before the earthquake, cholera was not.

While the subject matter experts did not believe that cholera posed a threat to Haiti post-earthquake, they did outline the post effective means to prevent transmission of acute watery diarrhea, saying:

> *[The] provision of safe (chlorinated) water; safe water storage; appropriate disposal of feces; and hand washing with soap after caring for patients, toileting, cleaning other persons after toileting, or before preparing, serving, or eating food. Because onset of the rainy season is likely to enhance transmission of acute watery diarrhea, these measures should be strengthened immediately, particularly in settlements for displaced persons (Centers for Disease Control and Prevention 2010, p. 1).*

These measures to reduce prevalence of diarrhea are also key measure to prevent the spread of cholera. When examining this brief, what should be noted is not the fact that cholera did emerge as a threat in Haiti, but whether or not the recommended actions determined by the CDC were implemented and if not, why not.  While the turmoil caused by the earthquake resulted in a complex disaster response from humanitarian actors, these recommendations made by the CDC experts should have been followed. If not, why weren't they? Were they not followed because there were other priorities? By looking closely at the CDC's activities following the earthquake, these questions can be answered by evaluating the WASH activities before and after the cholera epidemic began.

# 3

**METHODS**

*"Without proper monitoring and accountability, countries and donors—and taxpayers—have no idea whether or how their investments are working. A lack of knowledge about whether aid works undermines everybody's confidence in global health initiatives, and threatens the great progress so far made in mobilising resources and political will for health programmes in low-income and middle-income countries."*
*– Editorial, The Lancet, 2010(Editorial 2010)*

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Global organizations, including GOs, NGOs, and humanitarian organizations provide assistance following disaster and during the reconstruction period to help vulnerable populations improve their health and society. The effects of these programs, especially in low and middle-income countries, are not well understood. Traditional evaluation designs, which previously helped program managers and funders test the effectiveness of their programs, are no longer relevant in many of the multi-player environments of the current complex humanitarian disaster world. Efficacy of many of the interventions used in these situations – water, food, shelter –

are known, yet the assessment of various delivery channels and in varying health contexts of these interventions is not.
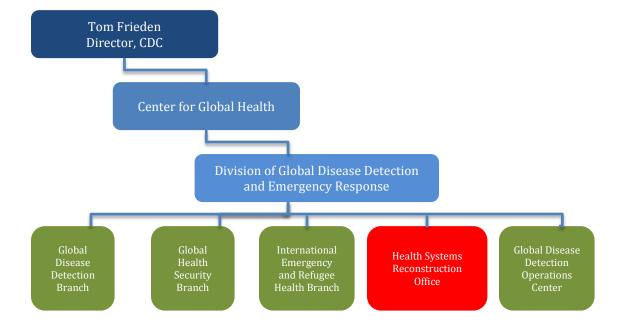
The objectives of this study were to place CDC within the international humanitarian aid context, not only in the program aid and interventions that the agency supplied, but also to understand how the agency has monitored and evaluated it success thus far in a complex and contentious climate. By examining CDC's WASH activities in post-earthquake Haiti, this study aimed to assess the status of CDC's evaluation design and offer recommendations on how to strengthen these activities. This study selected methods for data collection and analysis based on their ability to provide accurate background and information on the evaluation design for both the CDC and internal humanitarian community in post-disaster settings.

The CDC, an agency within HHS, aims to provide technical capacity abroad through various activities and programs. Established in 1942 as the Office of National Defense Malaria Control Activities, the CDC has evolved to protect public health and safety of the U.S. through health decisions and partnerships (Centers for Disease Control and Prevention 2012). The agency focuses on improving health in several sectors, including disease prevention and control, environmental health, occupational safety and health, health promotion, injury prevention, and education. Evaluating the impact and outcomes of these activities are crucial, not only in the current budget climate, but also to understand how these programs can be improved for future use.

In January 2010, CDC became involved in the international response to the Haiti earthquake. Following initial relief, the agency has remained involved through various phases of the event, including the outbreak of cholera in October 2010 and the ongoing reconstruction of Haiti's health infrastructure. One of the top priorities for CDC is improving Haiti's WASH infrastructure by increasing access to clean water and sanitation facilities. CDC WASH experts have been involved in all phases of response in Haiti, and the work is expected to continue through 2015.

CDC's organizational structure is complex. Under the direction of CDC Director, Tom Frieden, 11 Centers and Offices implement programs and activities in their respective areas of expertise. The work in Haiti is done in the Health Systems Reconstruction Office (HSRO), within the Division of Global Disease Detection and Emergency Response (DGDDER), under the Center for Global Health (Figure 1).

**Figure 1: Organization chart for the Health Systems Reconstruction Office within the Centers for Disease Control and Prevention**

For this study, in-depth interviews were conducted with six key informants involved in the response and relief efforts following the earthquake in Haiti (Appendix A). Five of the six interviews were conducted with CDC employees. For these interviews, two of the employees work within the International Emergency and Refugee Health Branch (IERHB), one of the employees works within HSRO, one within the National Center for Environmental Health, and one within the Associate Director for Program. The sixth interview was conducted with a former Naval Surgeon General who managed the offshore ship deployed by the Navy to provide emergency medical support following the earthquake.

These key informants were selected for interviews based primarily upon their experience in Haiti. For the two located within the IERHB, these informants spoke not only on their experiences in Haiti, but also on their activities and evaluation designs in other post-disaster responses. The key informant located in the Office for the Associate Director for Program was chosen to provide an overview of CDC's evaluation priorities and strategies. The former Naval Surgeon General provided additional background on health infrastructure in Haiti and the complex situation following the earthquake and subsequent cholera outbreak.

Interviews were conducted between January and March 2012 via phone and in-person conversations. Data was primarily collected through these qualitative interviews. Questions for these interviews were modified for each interview, based on the key informant's position and experience (Appendix B). These open-ended, structured interviews each lasted between 30 and 90 minutes. Each interview only

involved the author and the interviewee, both for confidentiality and to receive the most in-depth and comprehensive views of the evaluation process.

Additionally, an in-depth literature review on evaluation in post-disaster situations was conducted to provide context to the author regarding what frameworks or best practices are accepted in the international humanitarian aid and evaluation communities.  For inclusion in this paper, the literature was chosen using criteria and topics on global health evaluation, evaluation in Haiti, evaluation at CDC, evaluation within humanitarian aid, evaluation for WASH programs, and humanitarian aid standards and processes. The author also examined grey literature on evaluation, including evaluation protocols, presentations and policy documents for CDC, as well as other organizations and agencies including USAID, UNICEF, UNHCR, and WHO. This research informed the international context, including international standards, practices, guidelines and information availability during disasters. Additionally, by discussing CDC's WASH program in context, the author was able to examine the evaluation design through its indicators, strategies, and objectives.

The CDC requested this analysis in order to improve the internal quality of the evaluation design of the agency's work in Haiti. This study did not constitute human subject research according to the definition used by the IRB and therefore did not require IRB approval.

# 4

## RESULTS

*"Rigorous, independent program evaluations can be a key resource in determining whether government programs are achieving their intended outcomes as well as possible and at the lowest possible cost. Evaluations can help policymakers and agency managers strengthen the design and operation of programs. Ultimately, evaluations can help the Administration determine how to spend taxpayer dollars effectively and efficiently – investing more in what works and less in what does not."*
 – *Peter R. Orszag, Former Director, Office of Management and Budget*

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Following the 2010 earthquake, the 12 largest U.S. NGOs in Haiti raised an

estimated $1.8 billion to assist in relief and recovery efforts. In the two years since,

nearly two-thirds of that money has been spent (Peñaloza 2012). While efforts to

build temporary shelters, fix damaged homes, and provide clean water and

sanitation programs to improve health are ongoing, many people are still living in

tents and unable to find a job. Guy Serge Pompilous, the head of Haiti Aid Watchdog,

a local community group says, "[The job NGOs have done in Haiti is] satisfactory ...

just plainly satisfactory…People have been helped; there have been some

beneficiaries. But there is still some work to do. That would be a D-plus, C-minus. I would rate them C-minus"(Peñaloza 2012). This lack of faith in the humanitarian aid community among Haitians reiterates the importance of these organizations demonstrating what they have achieved thus far.

Many NGOs in Haiti are unable to account for their funds or where exactly the money and resources have gone. This makes funders nervous, understandably so. Similar to international humanitarian groups, American NGOs face few legal accountability measures. Each year, they must complete a form with the IRS, which does not go into detail about overhead versus money spent on the ground. Yet, even as the NGOs are continuing to work in Haiti, other challenges persist. Experts have estimated that the cholera epidemic could last for several more years. NGOs and other governmental agencies are facing issues of sustainability and long-term planning in Haiti. With many years of potential work to go, groups need to ensure that their resources meet the challenges of current, as well as future, needs (Peñaloza 2012).

While not a humanitarian organization, CDC is just as prominent a group on the international emergency response stage. On issues of global health, CDC is the U.S.'s representative abroad, bringing the resources and scientific expertise to those countries that ask for the agency's help. In its formal two-year history, CGH has improved the Field Epidemiology Training Programs (FETP) that build epidemiology capabilities, established the African Society for Laboratory Medicine to enhance lab quality and capacity, and responded to the famine in the Horn of Africa (Frieden and De Cock 2012). In short, CGH's programs and experts are

utilized all over the world. As the Center continues to grow and evolve, program evaluation will become more important than ever.

Evaluation is a particularly timely topic for global health, especially at the CDC. In March 2012, *The Lancet* published several anonymous letters regarding CGH. In one of the letters, the author said, "There is no strategic direction…at the CGH other than spending monies at lightning speed. An objective evaluation of this center and its activities is long overdue "(Horton 2012). In both the criticism, and the CDC's subsequent response, the issue of improving systems and oversight of the Center is a priority. In their response, CDC Director Tom Frieden and CGH Director Kevin M. DeCock wrote:

> *Global health is too complex and broad to be directed exclusively by any one entity; CDC has many partners including USAID and the U.S. Departments of State and Defense. Although interagency work can bring challenges, improved indicators in HIV/AIDS, malaria, and maternal and child health indicate the quality of collaboration in the field (Frieden and De Cock 2012, p. 988).*

Dr. Frieden and Dr. DeCock stress the importance of CDC's work with partners, and also how indicators are a way to demonstrate the successes of these partnerships. This paper has discussed that while evaluating humanitarian and emergency programs is challenging, it is incredibly important to evaluate programs to demonstrate accountability, transparency, barriers, and achievements. The CDC's ongoing work in Haiti is a prime example of a situation where evaluation is both difficult and challenging. WASH activities in Haiti have experienced three specific phases: emergency, recovery, and development. Monitoring and evaluations for these programs have been particularly challenging, as the complex environment in Haiti creates barriers for implementation and evaluation of activities. This paper

now turns to examine the evaluations – including the objectives, strategies and indicators to measure progress – that have been done thus far for WASH programs in Haiti and how the agency plans to move forward in these areas.[1]

### *CDC's WASH Evaluation: Design and Indicators*

As previously described in chapter two, four water teams from CDC are involved in the WASH response in Haiti: IERHB, the household treatment team, the National Center for Environmental Health (NCEH) and the waterborne disease laboratory team. Following the earthquake, IERHB and the household treatment teams were on the ground, and when the cholera epidemic began, the second teams joined the effort (Appendix A, Interview 5). During the early – emergency –phase of the Haiti response, CDC worked with the MSPP and other humanitarian agencies to help reduce morbidity and mortality rates of earthquake victims and those who were displaced due to the disaster.  For both the emergency phase and the cholera response, CDC staff used a select number of the indicators surrounding access to water supplies (Table 2, Indicators 16-29) that were easily measured and would provide valuable information on current needs.  Of the 200 indicators identified in the Sphere Handbook, 59 are designated for WASH activities (Table 2).

Currently, CDC is in the third phase of the agency's response in Haiti: reconstruction. In this phase, CDC has the opportunity to be strategic and comprehensive to create long-term solutions for Haiti's WASH system. Mentioned in chapter two, the WASH team identified two strategic objectives for this phase:

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[1] All objectives, strategies and indicators discussed are from the CDC's Haiti Health Plan, a strategic evaluation document written by HSRO.

increasing access to improved drinking water though WASH activities and

maintaining a rolling cholera case fatality rate of less than 1%. In addition to the

MSPP, the CDC team has identified the following as partners: Haiti Laboratoire

National de Sante Publique (LNSP), DINEPA, USAID, Deep Springs International

(DSI), International Organization of Migration (IOM), Partners in Health (PIH),

Acted, Action Against Hunger International (ACF), and Hôpital Albert Schweitzer

Haiti (HAS). To reach these objectives, the WASH teams set up activities, indicators

and data sources to measure their progress. In this reconstruction phase of Haiti, the

activities are more thorough and long-term. In the case of the CDC, the activities will

continue through 2015.

**Table 2: WASH Standards and Key Indicators in Sphere Handbook**

| Standard | Key Indicators |
| --- | --- |
| **WASH Standard 1: WASH Programme Design and Implementation** | 1. All groups within the population have safe and equitable access to WASH resources and facilities, use the facilities provided and take action to reduce the public health risk<br>2. All WASH staff communicates clearly and respectfully with those affected and share project information openly with them, including knowing how to answer questions from community members about the project<br>3. There is a system in place for the management and maintenance of facilities as appropriate, and different groups contribute equitably<br>4. All users are satisfied that the design and implementation of the WASH programme have led to increased security and restoration of dignity |
| **Hygiene Promotion Standard 1: Hygiene Promotion Implementation** | 5. All user groups can describe and demonstrate what they have done to prevent the deterioration of hygiene conditions<br>6. All facilities provided are appropriately used and regularly maintained<br>7. All people wash their hands after defecation, after cleaning a child's bottom, before eating and preparing food<br>8. All hygiene promotion activities and messages address key behaviours and misconceptions and are targeted at all user groups<br>9. Representatives from all user groups are involved in planning, |

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| | training, implementation, monitoring and evaluation of the hygiene promotion work<br>10. Care-takers of young children and infants are provided with the means for safe disposal of children's faeces |
| **Hygiene Promotion Standard 2: Hygiene Promotion Implementation** | 11. Women, men and children have access to hygiene items and these are used effectively to maintain health, dignity and well-being<br>12. All women and girls of menstruating age are provided with appropriate materials for menstrual hygiene following consultation with the affected population<br>13. All women, men and children have access to information and training on the safe use of hygiene items that are unfamiliar to them<br>14. Information on the timing, location, content and target groups for an NFI distribution is made available to the affected population<br>15. The safety of affected populations and staff is prioritised when organising an NFI distribution |
| **Water Supply Standard 1: Access and Water Quantity** | 16. Average water use for drinking, cooking and personal hygiene in any household is at least 15 litres per person per day<br>17. The maximum distance from any household to the nearest water point is 500 metres<br>18. Queueing time at a water source is no more than 30 minutes |
| **Water Supply Standard 2: Water Quantity** | 19. There are no faecal coliforms per 100ml of water at the point of delivery and use<br>20. Any household-level water treatment options used are effective in improving microbiological water quality and are accompanied by appropriate training, promotion and monitoring<br>21. There is no negative effect on health due to short-term use of water contaminated by chemicals (including carry-over of treatment chemicals) or radiological sources, and assessment shows no significant probability of such an effect<br>22. All affected people drink water from a protected or treated source in preference to other readily available water sources<br>23. There is no outbreak of water-borne or water-related diseases. |
| **Water Supply Standard 2: Water Facilities** | 24. Each household has at least two clean water-collecting containers of 10–20 litres, one for storage and one for transportation<br>25. Water collection and storage containers have narrow necks and/or covers for buckets or other safe means of storage, for safe drawing and handling, and are demonstrably used<br>26. There is at least one washing basin per 100 people and private laundering and bathing areas available for women. Enough water is made available for bathing and laundry<br>27. Water at household level is free from contamination at all times<br>28. All people are satisfied with the adequate facilities they have for water collection, storage, bathing, hand washing and laundry<br>29. Regular maintenance of the installed systems and facilities is ensured and users are involved in this where possible |
| **Excreta Disposal Standard 1: Environment Free from** | 30. The environment in which the affected population lives is free from human faeces<br>31. All excreta containment measures, i.e. trench latrines, pit latrines and soak- away pits, are at least 30 metres away from any |

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| **Human Faeces** | groundwater source. The bottom of any latrine or soak-away pit is at least 1.5 metres above the water table<br>32. In flood or high water table situations, appropriate measures are taken to tackle the problem of faecal contamination of groundwater sources<br>33. Drainage or spillage from defecation systems does not contaminate surface water or shallow groundwater sources<br>34. Toilets are used in the most hygienic way possible and children's faeces are disposed of immediately and hygienically |
| **Excreta Disposal Standard 2: Appropriate and Adequate Toilet Facilities** | 35. Toilets are appropriately designed, built and located to meet the following requirements:<br>  - they can be used safely by all sections of the population, including children, older people, pregnant women and persons with disabilities<br>  - they are sited in such a way as to minimize security threats to users, especially women and girls, throughout the day and the night<br>  - they provide a degree of privacy in line with the norms of the users<br>  - they are sufficiently easy to use and keep clean and do not present a health hazard to the environment. Depending on the context, the toilets are appropriately provided with water for hand washing and/or for flushing<br>  - they allow for the disposal of women's menstrual hygiene materials and provide women with the necessary privacy for washing and drying menstrual hygiene materials<br>  - they minimise fly and mosquito breeding<br>  - they are provided with mechanisms for desludging, transport and appropriate disposal in the event that the toilets are sealed or are for long-term use and there is a need to empty them<br>  - in high water table or flood situations, the pits or containers for excreta are made watertight in order to minimise contamination of groundwater and the environment<br>36. A maximum of 20 people use each toilet<br>37. Separate, internally lockable toilets for women and men are available in public places, such as markets, distribution centres, health centres, schools, etc.<br>38. Toilets are no more than 50 metres from dwellings<br>39. Use of toilets is arranged by household(s) and/or segregated by sex<br>40. All the affected population is satisfied with the process of consultation and with the toilet facilities provided and uses them appropriately<br>41. People wash their hands after using toilets and before eating and food preparation |
| **Vector Control Standard 1: Individual and Family Protection** | 42. All populations have access to shelters that do not harbour or encourage the growth of vector populations and are protected by appropriate vector control measures<br>43. All populations at risk from vector-borne disease understand the modes of transmission and take action to protect themselves<br>44. All people supplied with insecticide-treated mosquito nets use |

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| | them effectively<br>45. All food stored at the household level is protected from contamination by vectors such as flies, insects and rodents |
| **Vector Control Standard 2: Physical, Environmental and Chemical Protection Measures** | 46. The population density of mosquitoes is kept low to avoid the risk of excessive transmission levels and infection<br>47. Fewer people are affected by vector-related health problems |
| **Vector Control Standard 3: Chemical Control Safety** | 48. Accepted international standards and norms are followed in the choice of quality, storage and transport of chemicals for vector control measures<br>49. No adverse reactions are reported or observed due to vector control chemicals<br>50. All vector control chemicals are accounted for at all times |
| **Solid Waste Management Standard 1: Collection and Disposal** | 51. All households have access to refuse containers which are emptied twice a week at minimum and are no more than 100 metres from a communal refuse pit<br>52. All waste generated by populations living in settlements is removed from the immediate living environment on a daily basis, and from the settlement environment a minimum of twice a week<br>53. At least one 100-litre refuse container is available per 10 households, where domestic refuse is not buried on-site<br>54. There is timely and controlled safe disposal of solid waste with a consequent minimum risk of solid waste pollution to the environment<br>55. All medical waste (including dangerous waste such as glasses, needles, dressings and drugs) is isolated and disposed of separately in a correctly designed, constructed and operated pit or incinerator with a deep ash pit, within the boundaries of each health facility |
| **Drainage Standard 1: Drainage Work** | 56. Water point drainage is well planned, built and maintained. This includes drainage from washing and bathing areas as well as water collection points and hand washing facilities<br>57. There is no pollution of surface water and/or groundwater sources from drainage water<br>58. Shelters, paths and water and sanitation facilities are not flooded or eroded by water<br>59. There is no erosion caused by drainage water |

*CDC WASH Objective #1: Increase access to improved drinking water through WASH activities*

To achieve their first objective, the team examined the existing water infrastructure in Haiti and chose which strategies and activities could improve the water infrastructure. The strategies that CDC selected are the following: (1) Build capacity for the MSPP and partners to improve water safety in Haiti; (2) Expand household water treatment and safe storage; (3) Improve access to water and sanitation facilities in communities and public institutions; and (4) Establish a WASH monitoring and evaluation system that will continuously monitor the country's WASH system. Together, these strategies improve overall human capacity, knowledge, and access to facilities in the field around the country.

For each strategy, the water team has also identified quantitative and qualitative indicators to measure quarterly. By consistently collecting data, the results will be used for a variety of uses. Primarily, the data will be used to inform the MSPP on the progress of the projects. The indicators and descriptions for each strategy are included below:

| Strategy 1: Build capacity for the MSPP and partners to improve water safety in Haiti | |
|---|---|
| Indicator 1 | # of municipal technicians trained |
| Indicator 2 | # of CDC-funded municipal technicians equipped, deployed and actively reporting |
| Indicator 3 | # of workshops and trainings held to reinforce partner (MSPP, NGO) technical capacity, including survey methods, household water treatment systems (HWTS), sanitation, hygiene promotion, geospatial analysis |

In this first strategy, the agency will improve capacity to improve water safety. When the team chose these activities, they had to look two needs: needs for

improving water safety and the current baseline assessment for human capacity. To help improve this capacity, CDC is planning to train of DINEPA technicians. This local staff will receive instruction on WASH concepts, including chlorination techniques and sanitary surveys. By assessing the current situation, CDC and MSPP noted that DINEPA lacks the field staff necessary to perform basic WASH duties in the country.

The CDC has chosen three indicators to measure its progress. First: counting the number of technicians trained. This number, which measures the process activities of the project, will provide information on the increasing number of trained staff ready and able to be deployed in Haiti. To measure this, CDC will rely on DINEPA records, as the DINEPA will staff the trainings in their offices. The second indicator will count the number of CDC-funded municipal technicians equipped, deployed, and actively reporting. This indicator serves to follow-up on the first measure. By collecting this information, it would be possible to determine how many of those municipal technicians were both trained and deployed. The CDC would expect this number to be 100% - in other words, that all those trained would be deployed to the field (Appendix A, Interview 4). If there were discrepancies, however, this information would allow CDC and DINEPA to understand where and these gaps are occurring, which would help to improve deployment numbers. The third indicator speaks to a separate activity: counting the number of workshops that CDC will run for partners (including the MSPP and NGOs) on technical capacity skills. These workshops were created as a response to a need for these groups to receive additional training on technical methods, including surveys, hygiene

promotion and geospatial analysis. CDC will be able to use its own records as source information for this indicator.

The desired outcome for this strategy will be an improved and sustainable water infrastructure program, especially in rural areas. One of the primary challenges before and following the earthquake was the lack of trained staff members in the WASH sector. With limited staff and data capacity, surveillance of waterborne and foodborne illness was nearly non-existent. In public health, surveillance is important both in prevention and reaction to disease. The inadequate surveillance system not only put the country at risk for detecting an outbreak early, but it also has contributed to the continued epidemic. Timely case detection is essential for controlling outbreaks. The trained municipal staff will be able to increase the coverage and quality of water and water-borne disease surveillance, as well as report on water source points in designated areas.

| Strategy 2: Expand household water treatment and safe storage | |
|---|---|
| Indicator 1 | # of households in Artibonite and Centre gaining safe storage container plus 2-month supply of liquid chlorine treatment product |
| Indicator 2 | # of households purchasing HWTS |
| Indicator 3 | % of households appropriately using HWTS |

In this second strategy, CDC identified access to water treatment and safe storage facilities as necessary to improve safe drinking water for Haitians. The inaccessibility or non-use of chlorine treatment products in the country has contributed to communities not drinking clean water. By providing supplies, including chlorine treatment products and households water treatment systems, to households, the CDC team believes that once these communities have safe water

supplies, they won't have to rely to unsafe water sources. Planned as a pilot study in the Artibonite and Centre regions, these activities, if successful, will be scaled-up across the country at a later date.

To measure this strategy, CDC will look to three related indicators: how many households receive or purchase household water treatment systems and how many are using these systems appropriately. The CDC will utilize distribution records and household surveys as data sources to gauge how many households have received chlorine treatment products, household water treatment systems and whether or not these supplies are being properly used in households.

By providing clean water, there are two outcome of this strategy. The first will address current threats of cholera and the second will be to prevent future threats of cholera and other water-borne diseases, as communities will have an improved system for safe water in the future.

| Strategy 3: Improve access to water and sanitation facilities in communities and public institutions | |
|---|---|
| Indicator 1 | % of piped community water systems functioning |
| Indicator 2 | % of piped community water systems consistently practicing appropriate chlorination at storage tank or using dispensers |
| Indicator 3 | # of water committees visited by DINEPA municipal technicians |
| Indicator 4 | # of sanitary inspection reports received by Observatoire National from DINEPA Municipal Technicians |
| Indicator 5 | % of population with access to chlorinated small water systems |

Before the earthquake, only 17% of Haiti's population had access to improved sanitation facilities (World Health Organization/UNICEF 2010). While this did not contribute to the importance of cholera in Haiti, it did affect the spread of the disease once it was introduced into the population. Improving sanitation

facilities among the Haitian population is a priority. Additionally, monitoring access to improved water is an indicator that is used to track whether the MDG target for water and sanitation is being met. For Haiti, a country with a weak health infrastructure, it will be essential to record this information in order to demonstrate the country's progress – or challenges – in reaching the MDG by 2015.

To monitor the progress of improving access to water and sanitation facilities in Haiti, the CDC team has selected five indicators. These indicators demonstrate the long-term plan for these activities, as it will be necessary to perform a needs-assessment first in order to define a baseline for how many water systems are currently functioning. If they are not functioning, they are not providing any public health benefit, so these will need to be checked. If they are functioning, they must be continuously monitored and if they are not, they must be fixed and then monitored. The trained DINEPA technicians will monitor the status of these water systems (see Strategy 1 above).

| Strategy 4: Establishing a WASH monitoring and evaluating system | |
|---|---|
| Indicator 1 | % of water systems (CDC-supported and country-wide) regularly reported (monthly/quarterly/basis) |

To monitor the establishment of the WASH M&E system in Haiti, the CDC team has chosen to measure one indicator to monitor the system. To get this information, CDC will rely on the municipal technicians submitting water quality reports on a timely basis. The CDC faces additional challenges, however, not only in gathering the data but where and how it is analyzed and utilized. At its core, monitoring and evaluation is the process where data is collected and disseminated

to key decision-makers to improve program processes and achieve program

objectives (UNC Carolina Population Center 2012). Indicators for this strategy

should examine not only how often data is collected, but also who it is reported to,

the quality of the data, and how it is being shared. Indicators for the monitoring and

evaluation system should lead to outcome measures around change in the program.

The data gathered in this strategy should inform MSPP and HSRO leadership about

the strength of the program and whether or not data is being gathered in a cohesive

and usable way.

*CDC WASH Objective #2: Maintaining a rolling cholera case fatality rate of less than 1%*
Five critical factors directly contribute to the spread of cholera: water

quality, water quantity, excreta collection and disposal, solid waste disposal,

personal and communal hygiene practices (Fry 1992).  In Haiti, as in other areas

with cholera, extensive weaknesses exist in these five areas. Strategies to reduce the

spread and severity of cholera should address these five challenges in concert to

ensure that gaps are filled, as each factor is closely linked.

To monitor and control cholera, the CDC selected four WASH strategies: (1)

Improve access to and quality of treatment for cholera and other diarrheal diseases;

(2) Utilize Community Health Workers (CHWs) to educate the public; (3) Build

capacity of MSPP and partners to prevent and control cholera and other waterborne

diseases in Haiti; and (4) Establish laboratory-based sentinel site surveillance for

cholera and other waterborne and foodborne diseases. The indicators and

descriptions for each strategy are included below:

| Strategy 1: Improve access to and quality of treatment for cholera and other diarrheal diseases | |
|---|---|
| Indicator 1 | Hospitalized cholera case fatality ratio (CFR) under 1% |
| Indicator 2 | # of cholera treatment facilities (CTF) CDC supports |
| Indicator 3 | # of M&E visits conducted at CTFs |
| Indicator 4 | % of population with access to CTFs within a 2 hour distance |

With this strategy, CDC will work to improve quality of treatment and access to cholera treatment facilities (CTF) for Haitians. Cholera is a treatable disease, if caught and treated early. By providing oral rehydration salts to replace lost fluids, many patients will survive. Yet, for many in rural areas of Haiti, treatment options are few and far between. One of the indicators for this strategy is to measure the percentage of the population within a 2-hour distance from a CTF. By improving access and quality of care, CDC can help improve the case fatality ratio – earlier and better care will lead to fewer deaths.

To gather information for these indicators, CDC plans utilizes information from the MSPP national surveillance system, which tracks cases of cholera throughout the country. The outcomes of this strategy will be important for both the long- and short-term impact on the cholera epidemic.

| Strategy 2: Utilize Community Health Workers (CHWs) to educate the public | |
|---|---|
| Indicator 1 | # of CHWs trained or retrained using CDC/MSPP training materials |
| Indicator 2 | # of ORPs CDC supports |
| Indicator 3 | # of educational materials and hygiene promotion kits distributed to CHWs |
| Indicator 4 | # of CDC-funded CHWs equipped, deployed and actively conducting community education activities |

This intervention plans to use local, trained community health workers (CHW) to educate their communities in Haiti about cholera identification and prevention. Employing local CHWs not only is cost-effective, but this is also a

responsible practice for ensuring long-term sustainability of the strategy. By

training local Haitians to work in their local communities, CDC is working to

strengthen the country's health infrastructure.

| Strategy 3: Build capacity of MSPP and partners to prevent and control cholera and other waterborne diseases in Haiti | |
|---|---|
| Indicator 1 | Proportion of CDC-supported CTFs that have received clinical refresher training |
| Indicator 2 | # of workshops and trainings held to reinforce (MSPP, NGO) technical capacity for cholera clinical treatment and CHW education |
| Indicator 3 | # of M&E visits conducted at CTFs |
| Indicator 4 | % of population with access to CTFs within a 2 hour distance |

Even with the CFR for cholera stabilized around 1%, it is important for the

CDC and its partners to ensure that factors do not cause a rise in incidence of new

cholera cases. With the onset of the rainy season, more cholera cases can be

expected as rivers rise and swell. Through the implementation of this strategy, CDC

is planning to create sustainable infrastructure in Haiti through the MSPP and

partners to prevent the spread of cholera and other waterborne diseases in both the

long and short-term. In order to achieve this strategy, CDC plans to provide initial

and refresher clinical training at CTFs.

| Strategy 4: Establish laboratory-based sentinel site surveillance for cholera and other waterborne and foodborne diseases | |
|---|---|
| Indicator 1 | % of sentinel sites that regularly report data on a timely basis |
| Indicator 2 | % of target samples collected and appropriately tested and reported quarterly |

Establishing a thorough surveillance system is a vital step to improving

Haiti's public health infrastructure. The system can provide early warning system

for future cholera outbreaks and other public health emergencies as well as track

progress towards the country's goals on disease detection. This strategy aims to improve the weak laboratory-based sentinel site surveillance system in Haiti by monitoring what percentage of the sentinel sites report data on a timely basis, as well as what the percentage of target sampled collected are appropriately tested and reported.

### *CDC's WASH Evaluation: Challenges and Limitations*

During all three phases of CDC's work in Haiti, information for process measures have been collected. Challenges in both data collection and analysis have arisen. First, large information gaps exist in the country. The earthquake destroyed much of the little infrastructure that Haiti had. These communication and data systems are in the process of being rebuilt, but much of the data is collected from faulty or incomplete sources. The example mentioned previously regarding water sources in municipalities is a prime instance of necessary information that simply is not available. Second, CDC has been working through its partners to collect the data that they can, when they can. The Sphere indicators have provided guidance on what should be measured, but when they can't be measured, it is hard to find a substitute indicator that will provide the same level of information. Third, as CDC does not collect the data directly, the agency relies on its partners, including community health workers, the MSPP, NGOs, to gather accurate information. This presents problems in data control and quality due to incomplete or incorrect data gathered.

During the third phase of response, CDC is relying primarily on household surveys to gather data on municipalities, especially concerning local infrastructure,

capacity, and hygiene behaviors to inform ongoing WASH strategies. The survey includes topics such as what hygiene behaviors are used, what observations are made regarding hygiene and sanitation behaviors, and the availability and usage of latrines.

CDC has been involved in the Haiti earthquake and cholera for two years, but the outcomes and impact of the agency's work has still yet to be determined. The continuum from outputs to outcomes to impacts gets more difficult, especially over a longer-term. The outputs of activities and people can be counted, but measuring health impacts is harder. While immediate relief for the earthquake and cholera were provided, the long-term impact of CDC's development and reconstruction work will not be measureable for years to come. Additionally, as much of CDC's work provided was in concert with various partners and the MSPP, it is difficult for CDC to determine how much of the success of these measurable indicators can be directly attributed to its work.

By the end of two years in Haiti, CDC and Congress determined the need to more systematically evaluate the ongoing reconstruction work in the country. With the reconstruction phase well underway, resources and funds have been allocated to assist with ongoing projects and training activities. To continue progressing in Haiti, the agency needed to better understand its long-term impact and role in the country.

***The Haiti Health Plan: Aggregating CDC's Objectives and Strategies***

As the various programs in Haiti operate in siloes, the information from an agency perspective is difficult, but necessary, to aggregate. By examining all CDC programs together, the activities can inform project planning and resource allocation. In 2011, to meet this challenge of defining aggregate strategies, tracking implementation, and managing its programs, CDC undertook the development of the CDC Haiti Health Plan. This strategy document encompasses all of CDC's current activities in Haiti related to post-earthquake public heath reconstruction and controlling cholera and puts them in one place for review. Again, while much of CDC's activities are done with partners or with the MSPP, the activities and strategies outlined in the Haiti Health Plan demonstrate the activities that CDC is directly involved with, and thus can demonstrate CDC's direct successes in country.

The plan covers many projects in Haiti, including those for cholera/WASH, maternal health, immunizations, HIV/AIDS, tuberculosis, among others. Beginning in May 2012, the CDC plans to use this document to coordinate a systematic data collection and evaluation plan for activities in Haiti through 2015. For each program, goals, objectives, strategies, and indicators will be documented, regularly reviewed, and updated to provide data that will better inform managers about their programs' progress. While the results of this project remain to be seen, this project demonstrates the agency's commitment to transparency and accountability. Moving forward, this plan will provide information to guide funding decisions and resource allocation in Haiti.

Newly formed in the wake of Haiti's earthquake, HSRO was charged with administering and coordinating programs across CDC's many centers and divisions. The Haiti Health Plan is a novel tool to help manage and track progress in Haiti. The Haiti Health Plan outlines the activities for CDC's projects in Haiti from 2012-2015. This work represents a significant opportunity to build capacity in this impoverished country. With CGH's mission to enhance public health capacity and health security abroad, the Haitian response is a landmark moment for CDC. By demonstrating CDC's success in this response, the potential for future health systems reconstruction efforts improves as well. The Haiti Health Plan is a means to provide a transparent system of accountability for the various programs in Haiti for several reasons: First, it aligns the various programs to CGH's – and CDC's – overall mission in Haiti; Second, it sets objectives, strategies, and indicators for each program, so that programs have a systematic means to collect and submit ongoing data, which helps to inform the process evaluation of the programs. If programs are not meeting their targets, the programs can be corrected to better accomplish the goals and objectives in Haiti; Third, it is a strategic document that will be continuously improved and revised based on the incoming data to reflect the changing contexts of the program; and finally, the plan serves as a single point that CDC can use to demonstrate progress to Congress. In the current budget environment, when many programs are audited for efficiency and effectiveness, the thoroughness and structure of the plan will validate the funds going into the investment in Haiti.

For CDC's work in Haiti, various levels of leadership examine and use the data gathered by the Haiti Health Plan.  While all the data is available, it is utilized in different ways. First, program managers can use the activity outputs, or process indicators, to inform them about their program-specific progress and allowing for course correction. Program managers can then use their aggregate program output data to demonstrate their progress to outcomes with HSRO leadership. HSRO leadership can look at the program data for the various, competing programs and determine where money should be allocated based on progress, needs and successful strategies. Finally, at the inter-agency level, CDC can examine the overall impact and progress of the agency's work in Haiti and determine future funding decisions, as well as use the information publically to improve knowledge in the humanitarian and policy community about development activities in Haiti or other similar contexts. Through the Haiti Health Plan and the strategies of the various programs, CDC will be able to validate that the activities and programs the agency is funding are doing important, effective and valuable work. Additionally, the CDC will be able to use the program data gathered through evaluation in Haiti to design similar, effective programs in the future.

### *Comparison of Evaluation Approaches in the Humanitarian Context*

Thus far, this paper has discussed why evaluation is important, the various types of evaluation in the humanitarian sector, and a case study of evaluation in a real-world situation.  The writing of the Sphere Handbook marked the first occasion when humanitarian organizations and agencies came together to reach consensus

on activities to achieve the best results in the complex situations they often worked.

By setting standards for activities and indicators, the Sphere authors and agreeing

organizations were also envisioning a similar framework to the four-tiered data use

that was seen above in CDC's WASH work. First, at the output level, the Sphere

indicators seek to define and measure what a program should be doing and

measuring in order to provide the best relief aid. This information allows managers

to quickly course-correct. Second, at the Sphere standard level, managers who are

working specifically on food, medical or shelter issues could ensure that the needs

of the vulnerable populations were being met (i.e. were they fed, treated or housed)

by ensuring that all indicators within a specific Sphere standard were achieved.

Third, at the funding level, organizations can demonstrate progress and ensure that

funds are efficiently and ethically allocated. Finally, at the fourth level, the inter-

agency level, acting in accordance with the Sphere indicators will measure the

extent to which the NGO's or GO's actions are in line with the internationally

recognized standards for an effective, reputable agency.

# 5

## RECOMMENDATIONS

*"In this evolving development context, evaluation has an important role in informing policy decisions and helping to hold all development partners mutually accountable for development results. The way development evaluation is carried out must also reflect this new context, becoming more harmonised, better aligned and increasingly country-led, to meet the evaluation needs of all partners."*
*– Nick York, Chair of the OECD DAC Network on Development Evaluation*
_____

As the CDC continues to measures its WASH activities in Haiti, the agency

must take an approach that while the cholera epidemic is ongoing, the disease is an

indication of poverty, underdevelopment, and limited resources in the country.

Improving WASH and preventing cholera are inextricably linked to improving public

health infrastructure in Haiti. In Haiti, a country devastated by years of under-

development and, more recently, by natural disaster, improved health through long-

term development strategies must be implemented both to control the ongoing

epidemic and prevent future outbreaks of disease.

As WASH team discussed in their interviews, the CDC's current activities in Haiti are more along the development rather than health continuum. Activities to improve water storage and municipal staff are more routinely implemented and performed by USAID, the U.S.'s organization working to administer civilian foreign aid through development assistance programs (Appendix A, Interview 1). Haiti is an opportunity for HSRO, and the agency, to set the bar high for U.S. involvement in global health and development issues. With their health experience, CDC's WASH experts are looking at Haiti as a model for future relief and reconstruction programs. That being said, Haiti can also serve as a learning experience for the CDC (Appendix A, Interview 3). The following recommendations serve to provide the CDC with areas where the agency can become more aligned with international WASH standards, as well as areas to refine its evaluation design.

Currently, CDC is pursuing an adequacy inference level with its activities in Haiti. No control group is serving to measure the true effect of the agency's work in the presence of other confounders or external factors. While this evaluation design does not offer conclusive evidence that the CDC is making a significant impact on its own, the activities and strategies that the agency is employing in Haiti are proven and efficacious. Per the guidelines of adequacy assessments, CDC is working to achieve specific goals and strategies via interventions that do deliver known results, thus it is not imperative for the agency to spend additional funds and resources to determine if the interventions are actually benefiting the population (Habicht, Victora et al. 1999).

With so many actors and organizations on the group in Haiti working to provide development and aid assistance, it is difficult to prove that the specific activities of CDC are making the only significant impact. These external factors can all contribute to CDC's goals to improve health through access to water and sanitation. When reviewing its progress in 2015, CDC will be able to examine the state before, during, and after its intervention activities and determine whether the agency's goals and strategies were met in the process.

### *Further Refining the WASH Strategies and Indicators in the Haiti Health Plan*

Many of the strategies and objectives outlined by CDC in the WASH activities are either too broad or not comprehensive enough. Additionally, the indicators also only measure outputs, not behavior change or capacity building, which is CDC's primary role in the country. While indicators can be used to measure outputs, it is also important to include indicators under each strategy that will demonstrate CDC's technical assistance contribution. Following, each objective and strategy is discussed in detail:

*CDC WASH Objective #1: Increase access to improved drinking water through WASH activities*

| Strategy 1: Build capacity for the MSPP and partners to improve water safety in Haiti | |
|---|---|
| Indicator 1 | # of municipal technicians trained |
| Indicator 2 | # of CDC-funded municipal technicians equipped, deployed and actively reporting |
| Indicator 3 | # of workshops and trainings held to reinforce partner (MSPP, NGO) technical capacity, including survey methods, HWTS, sanitation, hygiene promotion, geospatial analysis |

The indicators for this strategy have limitations.  The first and second indicator should be further clarified. Does the second indicator only measure those municipal technicians funded by CDC? Does CDC fund all municipal technicians? If not, why would this be – would those funded by CDC collect additional information or have additional responsibilities? To better understand the outputs that they are measuring, these indicators should be revised to more fully address these questions. Additionally, the third indicator speaks to the number of workshops held, but not the number of attendees, what knowledge they gain during these sessions or how qualified the partners are following participation

The outcome of this strategy would be an improved water safety capacity in Haiti via the MSPP and partners. To measure this outcome, however, what these indicators do not address is whether these trained technicians and partners are actually improving water safety. If they are trained and deployed to the field, it would be predicated that water safety would improve, but it cannot be directly determined. No measures exist currently to confirm the competence of the technicians. Further measures should be added to this strategy to measure the competence of the DINEPA trainees. This information will help not only to inform the CDC and MSPP about the level of competence achieved via the workshops and trainings, but also to indicate how often the DINEPA staff needs to be retrained. Additional indicators to better determine this outcome should include those aspects of water safety that the partners and technicians would improve.

The strategy is not specific enough to include information on what "water safety" is, so this term should be further defined. Once these "water safety"

strategies are further defined, indicators with various measurement methods could

be employed, including self-report, observations of practices, and specific objective

tests, including chlorine residual tests, coliform content tests in hand rinse water, or

bars of soap purchased by target populations (USAID 2010).

| Strategy 2: Expand household water treatment and safe storage | |
| --- | --- |
| Indicator 1 | # of households in Artibonite and Centre gaining safe storage container plus 2-month supply of liquid chlorine treatment product |
| Indicator 2 | # of households purchasing HWTS |
| Indicator 3 | % of households appropriately using HWTS |

The chosen indicators, while informative, will be difficult to measure the

outcome of the strategy. The indicators measure process, but not necessarily the

outcome of the strategy. While providing safe water supplies to people, these

sources may not be the only ones that populations use. No education or awareness

trainings are included in these indicators, which may be necessary for behavior

change in the target population. DINEPA staff will carry out these activities, but no

information exists on how qualified these staff members are or how they were

trained to carry out these responsibilities.  Additionally, recommended HWT and

safe storage activities require two separate practices to ensure safe water use:

correct treatment of drinking water and proper storage of that water (USAID 2010).

Indicators 1-3 do successfully measure the first practice of correct treatment of

drinking water. It is important to separate these practices, as it is possible that even

though some people may properly treat their water, they may store it incorrectly,

causing contamination.

| Strategy 3: Improve access to water and sanitation facilities in communities and public institutions ||
|---|---|
| Indicator 1 | % of piped community water systems functioning |
| Indicator 2 | % of piped community water systems consistently practicing appropriate chlorination at storage tank or using dispensers |
| Indicator 3 | # of water committees visited by DINEPA municipal technicians |
| Indicator 4 | # of sanitary inspection reports received by Observatoire National from DINEPA Municipal Technicians |
| Indicator 5 | % of population with access to chlorinated small water systems |

The indicators for strategy 3 should be a good measure for both the process and outcome for the strategy, as long as the assumption holds that the DINEPA technicians can properly check and monitor the water systems. It is recommended that the third and fifth indicators be clarified further. For the third: Is it enough for the DINEPA technicians to visit? What will be the outcomes or impact of these visits? What are they doing during these visits? Is the implication that they are evaluating the water committees and then taking corrective action? Or is the visit purely observational? For the fifth indicator: What is a small water system? Is this for drinking water or is this a sanitation facility. If it is drinking water, then an additional indicator should be added for the percent of the population with access to sanitation.

| Strategy 4: Establishing a WASH monitoring and evaluating system ||
|---|---|
| Indicator 1 | % of water systems (CDC-supported and country-wide) regularly reporting (monthly/quarterly/basis) |

While only one measure for Strategy 4 exists, it should be a good measure for the system's process, as timely reports are important for a functioning M&E system. To examine the outcome of the program, it is recommended that an additional indicator be added to examine the number of course corrections taken as a result of

the data gathered through monitoring and evaluation. However, this indicator

would be difficult to measure without confounding or other external factors

clouding the results.

The four strategies above will assist the CDC in monitoring the agency's

WASH work in Haiti. However, behavior change, a crucial piece of improving WASH,

is missing. The first is the lack of activities regarding hand washing.  Studies have

shown that access to improved water and sanitation facilities does not on its own

lead to improved health, which would be the impact for this objective. Along with

increased access, hygienic behavior change must also be implemented; primarily

hand washing with soap after defecating, before eating, and preparing food. Studies

have shown that hand washing at these critical times can reduce the number of

diarrheal cases by nearly 50% (UNICEF 2012). Second, no measures examine

behavior around whether communities are using sanitation facilities once they have

access to them. Third, no measures exist around whether people are changing their

behavior around open defecation, rather than in sanitation facilities. In order to

create long-term sustained change for WASH in Haiti, these behavior changes must

also be addressed and measured in order to gauge the impact of CDC's WASH

programs. It should be noted, however, that measuring behavior change is difficult.

Gathering this data is often biased and is resource and time-intensive. While

complex, behavior change should be a priority for public health development

projects in Haiti in order to improve existing systems and establish sustainable

methods for safe drinking water and hygiene moving forward.

*CDC WASH Objective #2: Maintaining a rolling cholera case fatality rate of less than 1%*

| Strategy 1: Improve access to and quality of treatment for cholera and other diarrheal diseases | |
|---|---|
| Indicator 1 | Hospitalized cholera case fatality ratio (CFR) under 1% |
| Indicator 2 | # of cholera treatment facilities (CTF) CDC supports |
| Indicator 3 | # of M&E visits conducted at CTFs |
| Indicator 4 | % of population with access to CTFs within a 2 hour distance |

This strategy is quite broad. Additionally, one of the indicators they have to measure their strategy is nearly identical to CDC's overall objective to keep 14-day rolling CFR rate for cholera below 1%. To improve the indicators for this strategy, it should be further defined. In this strategy, CDC is aiming to provide improved quality and access to people suffering from cholera and diarrheal diseases.

With improved treatment, CFRs should decrease, and the goal should be achieved. As the CFR in Haiti is stabilized near the recommended 1% level, CDC should aim to ensure treatment is available in the event of a rise in the number of cases. Indicators that will demonstrate this improved quality and access to treatment could include measures on behaviors within the CTF, including percentage of severe cases in CTF that are isolated, the number of severe patients per health care worker, how often the CTF is disinfected or cleaned to prevent contamination, and the percentage of cholera patients whose families are interviewed to ensure no further cases occur. Examining the percentage of households with access to a CTF would serve as an indicator to measure improved access.

| Strategy 2: Utilize Community Health Workers (CHWs) to educate the public | |
|---|---|
| Indicator 1 | # of CHWs trained or retrained using CDC/MSPP training materials |
| Indicator 2 | # of ORPS CDC supports |
| Indicator 3 | # of educational materials and hygiene promotion kits distributed to CHWs |
| Indicator 4 | # of CDC-funded CHWs equipped, deployed and actively conducting community education activities |

Per this strategy, the CHWs would be engaging in their communities via health education campaigns on issues related to cholera. This health education should consist of key messages on the following topics: safe drinking water, water treatment, proper hand washing, proper preparation and storage of food to prevent contamination (Cairncross 2009). The indicators chosen for this strategy look at how CHWs are prepared for the community, but they do not address what the CHWs will be telling the public about cholera. Additional indicators should be included to examine the outcomes of the CHWs work, including behavior change surrounding the topics mentioned above on sanitary practices with food and water. While the above indicators will speak to the process of training the CHWs, they do not speak to their quality or their impact in communities.

| Strategy 3: Build capacity of MSPP and partners to prevent and control cholera and other waterborne diseases in Haiti | |
|---|---|
| Indicator 1 | Proportion of CDC-supported CTFs that have received clinical refresher training |
| Indicator 2 | # of workshops and trainings held to reinforce (MSPP, NGO) technical capacity for cholera clinical treatment and CHW education |
| Indicator 3 | # of M&E visits conducted at CTFs |
| Indicator 4 | % of the population with access to CTFs within a 2 hour distance |

Indicators that are also useful for this strategy could include those that measure what percentage of the population is served by municipal piped water, public standpipes and other water sources (wells, pumps, surface rivers, or ponds),

what percentage of the population is served by latrines, and what kind of water

conservation or rationing is practiced in communities, among many others. The

challenge with this strategy is that, as worded, the indicators only speak to a

particular aspect, CTF clinical training, of cholera treatment and prevention. It does

not speak to the various other necessary activities, including the five factors that

directly contribute to the spread and severity of cholera.

| Strategy 4: Establish laboratory-based sentinel site surveillance for cholera and other waterborne and foodborne diseases | |
|---|---|
| Indicator 1 | % of sentinel sites that regularly report data on a timely basis |
| Indicator 2 | % of target samples collected and appropriately tested and reported quarterly |

In the discussion above regarding the five critical factors that contribute to

the spread and severity of cholera, CDC's strategies, as stated, do not adequately

address these factors.  While the CDC's strategies involving training CHWs and

improving surveillance, they do not aim to transform the weak development and

economic infrastructure in Haiti that is the root cause of the cholera epidemic.

Rather than directly implementing activities, the CDC is providing technical

assistance through the CHWs or the MSPP's, including helping to improving the

country's surveillance system, a key public health priority. Surveillance provides the

foundation for public health programs, as the system will alert the authorities of any

new cases. These data illustrate the effectiveness of interventions and programs, for

example, as malaria rates should go down if bed nets are distributed and used

properly in high-risk areas.

***Create Consensus for Continuous Universal Standards for All Phases of Disaster Relief***

When examining the varying activities and evaluation design strategies in the three phases of disaster relief, response and reconstruction, gaps in recommendations are apparent. No comprehensive set of guidelines or standards exist to guide humanitarian organizations or agencies through all phases of disaster relief and response, from emergency aid and recovery through development. While Sphere provides early standards and other organizations provide direction on development, agencies following these various guidelines can run into problems when gaps in recommended service appear. Without continuous activities built on previous evidence and progress, humanitarian response can falter or become duplicative. The international community should look to Haiti, as well as other long relief and recovery programs, to create consensus not only on initial response following a disaster, but also recommended activities during the reconstruction period. Evaluations performed on Haiti programs can provide evidence of efficacy or effectiveness in these areas.

Currently, many of the existing international standards are incredibly broad and vague, stating what should be done but not how to do it. For example, OECD's *Quality Standards for Evaluation* plan states: "the evaluation process is transparent and independent from programme management and policy-making, to enhance credibility." (Organisation for Economic Co-Operation and Development 2010) OECD and Sphere, along with the various evaluation literature in existence provide expansive direction, but no real direction as to how to carry out these standards and guidelines. In attempts to follow these guidelines, NGOs and GOs create their own

measures and evaluation designs to review the scope and progress of their programs. Yet without specific direction, it is nearly impossible for these various programs to align.

The response in Haiti is another illustration of the misalignment and lack of coordination that occurs on the ground during an emergency. While these guidelines for response and recovery have been circulated and accepted in the humanitarian community for more than 10 years, in practice, these guidelines were not implemented by GOs to provide better service or programs to the people in need in Haiti. Duplication of efforts continued. Gaps in needed services were apparent. Even those who came to help in Haiti contributed to a secondary disaster when cholera was imported into the country. The best of intentions cannot ensure the success of a humanitarian program. Additional guidance is needed, with the caveat that these standards and guidelines should not only cover what activities an organization should be doing, but also how the organization should be doing the activities, for how long, and also how best to measure the progress of these activities. In reality, no guideline or rulebook will be perfect. Each humanitarian emergency is different. The context, the people, the disaster and those involved in the response all vary. What does not vary, however, is the need to provide the best shelter and care for those vulnerable populations who need help.

The CDC has an opportunity to take the reputation of its global health work and strong history of evaluation to lead the charge among international humanitarian NGOs to create guidelines that will be appropriate through all phases of disaster response and recovery. As the agency has been involved since the

earthquake – and plans to be involved through 2015 – it has a unique perspective on the country's health and development work. While the development activities may be novel for the agency, the health outcomes that they achieve are not. The agency and its staff are knowledgeable about the work that needs to be done in Haiti to improve health. The agency should take the opportunity to discuss its challenges and successes in Haiti.  By speaking openly and honestly about what has worked and what hasn't, the CDC can lead the international community on how to improve health systems and infrastructure for countries devastated by emergencies and natural disasters.

**CONCLUSION**

*"Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control."*
– *United Nations Declaration on Human Rights*

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Recent complex humanitarian emergencies, including the Indian Ocean tsunami, Hurricane Katrina, and Haiti, have thrust international humanitarian agencies and GOs onto the world stage. These organizations and agencies are heavily scrutinized, by both knowledgeable and naïve audiences. Examining these strategies in Haiti and others has subjected these organizations to a microscopic lens, resulting in either a positive or negative result. At best, organizations can be branded as effective and thoughtful of local conditions, but at worst, their reputations can become tarnished by demonstrating inefficiencies or selfish in their goals.

Learning from these emergencies is important. While they may all be different – populations, geographic regions, health concerns – the immediate relief that should be provided is the same in virtually every context: food, shelter, water, and medical attention. It is in the aftermath of a disaster or humanitarian event that situations can become more complex and intricate. In post-disaster evaluation, the primary goal is to yield lessons learned for the international community not only on how the program or intervention in a particular context occurred, but also to provide information and recommendations on how to respond to future emergencies. The concept of a "traditional" evaluation, which emphasizes on impact, efficiency and cost-effectiveness, is not always appropriate or significant in the post-disaster context (Eriksson 1996).

Now in its second year, the ongoing work in Haiti has not shown signs of slowing. In its third phase of response, CDC will continue to assist MSPP in priority activities. Cholera is still a threat. The bacteria have permeated its way through the water system of Haiti, as lakes, rivers and canals are contaminated throughout the country. While there have been ebbs and flows in the number of cases of cholera, the epidemic is constant and cases can be expected for the foreseeable future.

In late February 2012, Partners in Health sent an email bulletin to their supporters around cholera in Haiti. The rainy season in Haiti begins in April each year.  The daily rains exacerbate conditions for cholera, as rains can carry contaminated human waste into the rivers where water is used by Haitians to bathe, clean and cook.  In March 2010, Haiti was had an average of 1.6 inches of rainfall and 18,908 new cholera infections. In May 2010, the average rainfall increased to 5.6

inches and the number of new cholera infections skyrocketed to 50,405. Organizations including Partners in Health saw the number of their cholera patients triple in their facilities during the rainy season (Partners In Health 2011).

While these infections cannot be attributed directly to the increasing rainfall, the increasing prevalence of cholera patients during the rainy season directs public health agencies to ramp up efforts to treat those needing care, improving hygiene practices to reduce the spread of cholera, and educating communities to recognize cholera infections and helping those who have symptoms to access care quickly.

Similarly, the water infrastructure in Haiti is still precarious. CDC is working to build capacity and improve these WASH systems to promote public health in the country. By evaluating their efforts, CDC will not only increase their responsibility and accountability to do what they have stated they will do, but they will also serve as a reminder to the humanitarian community that evaluation is possible and necessary.

The tools of evaluation are the same; it is just the strategies and methods to put an evaluation framework in place that change. The dedication of the authors of the Sphere Project demonstrates the need and desire of the international humanitarian community to evaluate their activities and respond as effectively and efficiently as possible. It is up to GOs, NGOs, and international organizations to follow through on the promises made through efforts like Sphere and actually use evaluation tools in their relief work. The ninth principle in the Code of Conduct states: "We hold ourselves accountable to both those we seek to assist and those from whom we accept resources." To act in accordance with the code, therefore,

organizations should hold themselves accountable – and they can achieve

accountability through careful, thoughtful, and thorough evaluation.

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**APPENDICES**
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**Appendix A: List of Key Informants by Position and Organization**

| ID # | Position | Organization |
|------|----------|--------------|
| 1 | WASH Specialist | Health Systems Reconstruction Office, Centers for Disease Control and Prevention |
| 2 | Evaluation Officer | Office of the Associate Director for Program, Centers for Disease Control and Prevention |
| 3 | Medical Epidemiologist | International Emergency and Refugee Health Branch, Centers for Disease Control and Prevention |
| 4 | Epidemiologist | International Emergency and Refugee Health Branch, Centers for Disease Control and Prevention |
| 5 | Epidemiologist | National Center for Environmental Health, Centers for Disease Control and Prevention |
| 6 | Former Naval Surgeon General | United States Navy |

**Appendix B: Key Informant Interview Guides**

*Interview Guide 1:*

## Program

1. Can you tell me about the history of your program?
   a. When it began?
   b. Why it began?
   c. What was the overall objective?
   d. How long have you both been involved? And in what capacity?
2. Immediately following the earthquake, how did your program change to help assist in the post-disaster response?

## Evaluation

1. At what point was a system put in place for monitoring and evaluating the program?
2. Why at this particular point?
3. Could you describe the monitoring system to me?
   a. What activities do you monitor?
   b. What are your indicators?
   c. What are your anticipated outcomes?
   d. Timeline of data collection points?
   e. Who collects data?
4. Could you describe the evaluation process to me?
   a. How often do you evaluate your program?
   b. Who leads the evaluation process?
   c. When was the program last evaluated?
   d. What were the results of the evaluation?
5. Were monitoring and evaluation activities performed following the initial post-disaster response of the earthquake in Haiti?
   a. Why/why not?
   b. If so, were these activities different than those M&E activities pre-earthquake?
   c. If not, how were they monitored/evaluated in the aftermath of the disaster?
6. What is the number one priority for why/how you evaluate your programs?
7. Is there a standard CDC evaluation design that you use, or one that is commonly used? Why or why not?
8. What is the most challenging aspect of evaluation for your organization/agency?
9. Which programs do you think have the "gold standard" in terms of evaluation? Why is this the case?

10. How do you think you could improve your program's monitoring and evaluation system?
11. How familiar are you with the Sphere indicators?
    a. If so, have you used them in this project or with others?
    b. Why/why not?
12. Anything else you'd like to share about your program or its evaluation design?

*Interview Guide 2:*

## Sphere Indicators

1. What are the strengths of Sphere?
2. What are the weaknesses of Sphere?
3. How/when did you become familiar with Sphere?
4. Can you tell me about the history of the Sphere indicators with CDC?
   a. When did CDC look to Sphere?
   b. Why?
   c. Who was driving this initiative?
5. In what ways will CDC (and humanitarian community) benefit from using Sphere?
6. Can you tell me a bit about the Sphere meeting that happened recently?
   a. Outcomes?
   b. Challenges?
   c. Next steps?

## Evaluation

1. In your work in post-disaster response, how much of a priority is monitoring and evaluation?
   a. Why/why not?
   b. If so, who is the one usually driving M&E?
2. If you do monitor in a post-disaster setting:
   a. What activities do you monitor?
   b. What are your indicators?
   c. What are your anticipated outcomes?
   d. Timeline of data collection points?
   e. Who collects data?
3. Could you describe the evaluation process to me?
   a. How often do you evaluate your programs?
   b. Who leads the evaluation process?
   c. When was the program last evaluated?
   d. What were the results of the evaluation?
4. What are the challenges of M&E in a post-disaster setting?
5. Which post-disaster programs (CDC or external) that you believe were monitored/evaluated well? Why?
6. How do you think the CDC could improve IERHB's monitoring and evaluation system?
7. How does context affect program/evaluation activities?
8. Anything else you'd like to share?

*Interview Guide 3:*

## Evaluation at CDC

1. Can you tell me about the history of your work with evaluation?
2. How has CDC's view on evaluation changed?
    a. When?
    b. Why?
3. How was the 6-Step Framework designed?
    a. Why?
    b. Which resources were used to design it?
    c. What was the response within CDC when it was created?
    d. Has this response changed? Waxed/waned?
4. How do you feel different programs use the framework?
    a. Do they use it?
    b. How do they use it?
    c. How do they adapt it?
    d. How is this use monitored/evaluated?
5. Which programs do you think have the "gold standard" in terms of evaluation? Why is this case?
6. How do you think you could improve your program's monitoring and evaluation system?
7. What is the most challenging aspect of evaluation for your organization/agency?

## Post-Disaster Evaluation

1. Have you worked on post-disaster evaluations?
2. What are some of the challenges working on post-disaster evaluations?
3. How do you think monitoring and evaluation can improve post-disaster response?
4. Do you think the Framework can be modified for post-disaster evaluations?
5. How familiar are you with the Sphere indicators?
    a. If so, have you used them at CDC?
    b. What do you think are the benefits/challenges?

## Haiti Evaluation

1. What are the challenges of monitoring and evaluating in Haiti?
2. How do you think these challenges can be addressed or improved?

*Interview Guide 4:*

## Haiti

1. Can you tell me about the history of your work with WASH in Haiti?
    a. When it began?
    b. Why it began?
    c. What was the overall objective?
    d. How long have you both been involved? And in what capacity?
2. Were you involved in WASH activities before the earthquake?
3. Immediately following the earthquake, how did you decide what activities/projects to work on or be prioritized?
4. In these projects, how did you decide which partners (MSPP, UNICEF, etc.) you would be working with? How was work split between partners?
5. In Haiti, how have you and your team worked to monitor or evaluate success of your activities?
    a. Timeline or any specific deadlines?
    b. Particular indicators?
6. What is the most challenging aspect of evaluation for you and your team in Haiti?
    a. What are the most difficult activities to monitor/evaluate and why?

## WASH Experience

1. In your previous WASH experience, how does program/project work vary between a post-disaster situation like Haiti and capacity building in-country?
2. Could you describe the differences in your monitoring systems?
    a. What activities do you monitor?
    b. What are your indicators?
    c. What are your anticipated outcomes?
    d. Timeline of data collection points?
    e. Who collects data?
3. Could you describe the differences in your monitoring systems?
    a. How often do you evaluate your program?
    b. Who leads the evaluation process?
    c. When was the program last evaluated?
    d. What were the results of the evaluation?
4. What is the number one priority for why/how you evaluate your programs?
5. Is there a standard CDC evaluation design that you use, or one that is commonly used? Why or why not?
6. Which programs do you think have the "gold standard" in terms of evaluation? Why is this the case?
7. How do you think you could improve your program's monitoring and evaluation system?
8. How familiar are you with the Sphere indicators?
    a. If so, have you used them in this project or with others?

b. Why/why not?

9. With the ongoing Haiti Health Plan, are there activities that you have been working on in Haiti that are not in the plan? How did you decide what the priorities would be for the plan?
   a. How has this process been?
   b. Do you think that having a systemized approach has allowed for more structure in your M&E? If not, why?

*Interview Guide 5:*

## Haiti

1. Can you tell me about the history of your work with WASH in Haiti?
   a. When it began?
   b. Why it began?
   c. What was the overall objective?
   d. How long have you both been involved? And in what capacity?
2. Were you involved in WASH activities before the earthquake?
3. Immediately following the earthquake, how did you decide what activities/projects to work on or be prioritized?
4. In these projects, how did you decide which partners (MSPP, UNICEF, etc.) you would be working with? How was work split between partners?
5. In Haiti, how have you and your team worked to monitor or evaluate success of your activities?
   a. Timeline or any specific deadlines?
   b. Particular indicators?
6. What is the most challenging aspect of evaluation for you and your team in Haiti?
   a. What are the most difficult activities to monitor/evaluate and why?

## WASH Experience

1. In your previous WASH experience, how does program/project work vary between a post-disaster situation like Haiti and capacity building in-country?
2. Could you describe the differences in your monitoring systems?
   f. What activities do you monitor?
   g. What are your indicators?
   h. What are your anticipated outcomes?
   i. Timeline of data collection points?
   j. Who collects data?
3. Could you describe the differences in your monitoring systems?
   e. How often do you evaluate your program?
   f. Who leads the evaluation process?
   g. When was the program last evaluated?
   h. What were the results of the evaluation?
4. What is the number one priority for why/how you evaluate your programs?
5. Is there a standard CDC evaluation design that you use, or one that is commonly used? Why or why not?
6. Which programs do you think have the "gold standard" in terms of evaluation? Why is this the case?
7. How do you think you could improve your program's monitoring and evaluation system?
8. How familiar are you with the Sphere indicators?
   c. If so, have you used them in this project or with others?

      d. Why/why not?

9. With the ongoing Haiti Health Plan, are there activities that you have been working on in Haiti that are not in the plan? How did you decide what the priorities would be for the plan?
    c. How has this process been?
    d. Do you think that having a systemized approach has allowed for more structure in your M&E? If not, why?
10. With the ongoing Haiti Health Plan, are there activities that you have been working on in Haiti that are not in the plan? How did you decide what the priorities would be for the plan?
    e. How has this process been?
    f. Do you think that having a systemized approach has allowed for more structure in your M&E? If not, why?