# Health Needs Assessment Survey Guide for Engineers

*Assessing Water, Sanitation, and Hygiene in the Developing World*

Daragh A. Gibson
M.S.E.S. and MPH Candidate
School of Public Health
Department of Civil & Environmental Engineering
University of South Florida
Prepared for: CGN 6933: Sustainable Development Engineering-
Water, Sanitation, Indoor Air, and Health
http://cee.eng.usf.edu/peacecorps

## TABLE OF CONTENTS

## 1 Introduction

The developing world suffers from poor access to basic sanitation and potable drinking water resulting in many negative health effects. High rates of morbidity and mortality due to water-borne and fecal-oral disease afflict a large percentage of the world lacking access to these basic amenities vital to human life. The United Nations Millennium Development Goals (MDG's) were established to help bring equity and social justice to the world's impoverished. Goal 7 of the MDG's focuses on ensuring environmental sustainability. Target 3 of this goal is to "halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation" ("End Poverty 2015," 2008). According to the Progress on Drinking Water and Sanitation: Special Focus on Sanitation report by UNICEF and the World Health Organization (2008), 2.5 billion people currently lack access to improved sanitation, and 1.2 billion people are without any access to sanitation facilities. Additionally, the global population that still suffers from access to only unimproved water sources is 884 million, whereas 5.7 billion people now have access to an improved drinking water source (UNICEF, 2008).

Environmental and Civil Engineers play a vital role in providing safe drinking water and basic sanitation to impoverished communities. However, engineering cannot act alone, and it is important to incorporate the public health aspect of water and sanitation through health education and hygiene promotion. Diarrheal disease kills approximately 1.8 million a year, with the majority affected being children under five years of age in the developing world. 133 million people suffer from intestinal helminth

infections causing extreme morbidity. Public health and engineering can work together to bring about a greater reduction in water-related diseases ("World Health Organization [WHO]," 2004).

A health needs assessment can be performed in order to understand the state of health of the people in the community, identify major risk factors and causes of disease, and also provides information on actions that can be undertaken to reduce disease ("World Health Organization [WHO]," 2001). Engineers and other development workers in the developing world, who are working to provide access to improved drinking water sources and sanitation, should incorporate a health needs assessment into their plan of work in order to understand the health issues of the community and to determine proper appropriate technology use. Health education and hygiene promotion are important components of an engineering water or sanitation project, as tackling water and sanitation with the incorporation of hygiene can greatly reduce morbidity and mortality from water-related diseases. According to the GLAAS UN Water Global Annual Assessment of Sanitation and Drinking Water Pilot Report (2008), "Hygiene promotion and education are essential to achieve the health gains associated with improvements in basic coverage and increased service levels of sanitation and drinking-water ("World Health Organization [WHO]," 2008)".

**2 Community Development Projects Relating to Water, Sanitation, and Health**

A large barrier to community development and research projects relating to water, sanitation, and health in the developing world revolves around sustainability. Many times, public health workers and engineers enter a community, perform an

intervention and then leave once the intervention is complete. The community tends to be left out in the development and administration process. A community based participatory approach (CBPA) is an evidence based methodology that has gained popularity in program development and research in the developing world. CBPA emphasizes community participation and involvement at each step of program development and research in order to promote community buy-in, sense of ownership, and sustainability.

### 2.1 Community Based Participatory Approach

A Community Based Participatory Approach (CBPA) in program development and research maximizes community and lay involvement through direct collaboration in the research and development process. A summary of the components of CBPA can be found in the table below (Macaulay et al., 1999).

| **Summary Points** |
|---|
| The knowledge, expertise, and resources of the involved community are often key to research |
| Three primary features of participatory research include collaboration, mutual education, and acting on results developed from research questions that are relevant to the community |
| Participatory research is based on a mutually respectful partnership between researchers and communities |
| Partnerships are strengthened by joint development of research agreements for the design, implementation, analysis, and dissemination of results |
| Results of participatory research both have local applicability and are transferable to other communities |

(Taken from: Macaulay et al., 1999).

### 2.2 Participatory Hygiene and Sanitation Transformation (PHAST) Initiative

The Participatory Hygiene and Sanitation Transformation (PHAST) initiative is an approach that promotes health awareness and understanding through empowerment of communities in water management and control of sanitation-related diseases. The overall goal is to improve environmental and behavioral practices regarding water, sanitation, and hygiene by incorporating community participation of women, men and children in the development process (WHO&UNDP, 1997).

"An underlying principle of the PHAST initiative is that no lasting change in people's behaviors will occur without health awareness and understanding. People must believe that better hygiene and sanitation will lead to better health and better living (WHO&UNDP, 1997)."

The PHAST initiative is a good tool in understanding how to effectively carry out a sustainable and participatory community development intervention regarding water, sanitation, and health. The initiative's main principles involve recognizing that a community already has a great deal of knowledge and experience and it is the community that should determine their priorities for disease prevention. The community can determine which water, sanitation, and hygiene intervention is most appropriate based on their culture and environment. Furthermore, the community will take action when they understand that improvements in sanitation are to their advantage, and that all people are capable of understanding that fecal matter carries diseases and has specific transmission routes. Finally, the community can identify appropriate barriers to prevent the transmission (WHO & UNDP, 1997).

This approach recognizes that hygiene promotion can bring about positive health effects, but improvements in sanitation facilities and water alone, will not necessarily bring about large health benefits to a community. Rather, it is the combination of hygiene promotion and improvements in facilities that will bring about the best positive health impact (WHO&UNDP, 1997). Engineers working in community development projects can use the PHAST initiative as a model in combining hygiene promotion with improvements in water or sanitation for sustainable results and a greater positive health impact.

## 3 Assessment: Background, Health Needs Assessment, and Surveys

### 3.1 Public Health and Assessment

Health, as defined by the World Health Organization, is a complete state of physical, mental, and social well-being and not merely the absence of disease. The discipline of public health focuses on prevention of disease in populations and health promotion. The three core functions of public health are: assessment, policy development, and assurance. Assessment consists of a number of responsibilities, those which include collecting, assembling, analyzing, and disseminating information on the health of a population including the community health needs, health status statistics, and epidemiological studies of health problems (Petersen & Alexander, 2001).

### 3.2 Health Needs Assessment and Surveys

A health needs assessment is a process used in a community to understand the overall state of health of the people, identify major risk factors and causes of disease, and also provide information for interventions or programs to reduce disease (“World

Health Organization [WHO]," 2001). A main assessment tool used in public health to acquire data on a population is that of the survey.

Surveys are used to gather precise data on a population of interest. They are excellent in providing direct feedback to the public and stakeholders, promote public awareness of the subject studied, can address specific problems, and can be targeted to specific population groups and geographic locations. They are also very timely in providing results. Survey development, administration, data analysis, and interpretation is a complex process. The weaknesses with using surveys are that they can by costly, require technological expertise, cannot be generalized to other populations, may reflect desires rather than needs, may promote false expectations, and may be biased (Petersen & Alexander, 2001). However, despite these weaknesses, if done correctly, surveys can be a valuable and precise tool for assessing a population's health needs.

### 3.3 Health Needs Assessment: Water, Sanitation, and Hygiene

The assessment of water, sanitation, and hygiene within populations is necessary and important for policy and program development to reduce morbidity and mortality due to water-related disease (WHO & UNICEF, 2006). Policies and programs, based on assessment results, can focus on: increasing access to improved drinking water and sanitation sources, improving water quality, implementing pathogen destruction techniques in latrines, establishing water committees, and developing hygiene promotion programs. Surveys, used to assess water, sanitation, and hygiene, are a research technique used within a community for assessment most commonly at the household or family level. They are used, in combination with other assessment

techniques (such as focus groups, key informant interviews, social and transect mapping, and sampling) in order to determine access, quality, and practices related to water, sanitation, and hygiene.

## 4 Health Needs Assessment Survey Development

The health needs assessment survey can be developed after holding key informant interviews, ethnographic studies (including personal observations), social and transect mapping, and focus groups. The information learned from these preliminary research techniques can be used to shape a health needs assessment survey specific to an issue or problem that the community has identified. Additionally, the questions will be tailored to involve components of the community's language, culture, and environment. The process of developing a health needs assessment survey and pilot testing it is most effective through collaboration with a small group of community key informants. Community key informants should be representative of the population and should also include those that regularly handle or experience issues related to water, sanitation, and hygiene, such as: water committee members, school teachers, community doctor or nurse, farmers, mothers, etc.

### 4.1 Materials and Methods for Survey Development, Administration, and Analysis

The development of a health needs assessment survey requires specific materials. It is best to use a word processor when developing the survey. If one is not available, hand-written copies can be made. However, entering the survey into Microsoft Word first is the most efficient way to condense the survey and to save time if changes are needed to be made to the survey. A few print outs can be made to review

with key informants, which also serves as a pilot test of the survey. Language, flow of the survey, and appropriateness of questions are the key components that are tested in a pilot test. It is recommended that a pilot test with key informants be carried out at least two times before administering the final version to the community or research sample population.

Once the second pilot test is complete (or more if necessary) and agreed upon by the researcher and key informants, the final version can be edited in Microsoft Word. Enough print-outs of the survey need to be made to cover your entire sample population. Additionally, when working with human subjects, an Informed Consent Sheet needs to be designed. Templates can be found on University or other organizations' Internal Review Board (IRB) for Research Ethics websites. Copies of the Informed Consent sheet need to be made and used with each survey. Finally, an Information Sheet for the Survey Participant can be designed as a condensed version of the Informed Consent form and given to the participant. A second option is to provide a copy of the Informed Consent Sheet (although this tends to be quite lengthy due the amount of detail in explaining the study or reason for the survey). All these forms, if working through or representing a United States university, need to be approved by the university's Internal Review Board. After approval, each form and survey will be stamped with the IRB approval seal. It is important to only use the forms with the IRB approval seal.

When administering the survey, copies of the Informed Consent Sheet, survey, and Information Sheet need to be made. A binder is useful for storage and organization

of the papers. A clipboard is useful to have because many times in the field, survey administration and data collection is done in areas without access to a desk, table, or large flat surface for writing. Additionally, pens are needed, as well as a GPS if location needs to be recorded for data analysis. If the study requires taking pictures or video/voice recording, then permission from the participant needs to be obtained on an IRB-approved form in order to use the equipment and collected data.

The analysis of the surveys requires a computer and specific software to run a statistical analysis. If descriptive statistics is all that is needed for analysis, then the survey data can be entered into Microsoft Excel. Otherwise, for more detailed statistical analysis, Epi Info can be downloaded from the Center for Disease Control and Prevention (CDC) website for free. The following link provides details for downloading Epi Info: http://www.cdc.gov/epiinfo/. Data can be entered into Epi Info and analyzed. The positive of using Epi Info over other statistical analysis software such as SAS and SPSS is that it can be downloaded for free, it is accessible from any computer with internet connection in all parts of the world, comes in several different languages, and is fairly easy to manipulate.

### 4.2 Example Survey Questions and IRB Forms

The WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (JMP) prepared a document called "Core Questions on Drinking-water and Sanitation for Household Surveys." It is a comprehensive survey designed from an analysis of many already available surveys on this topic. Experts in water and sanitation and in survey design came together to produce this comprehensive and harmonized document. The

document provides example survey questions, which are considered to be core questions in completing a survey on water, sanitation, and hygiene (WHO & UNICEF, 2006). To access this document please go to the following website: http://whqlibdoc.who.int/publications/2006/9789241563260_eng.pdf.

Also, please see Appendices A, B, and C for a sample Health Needs Assessment Survey, Informed Consent Form, and Study Information Sheet regarding a health needs assessment on water, sanitation, and hygiene.

### 4.3 Ethics

Studies that include humans as study subjects are required to undergo Institutional Review Board (IRB) review. According to the University of South Florida's IRB, "The purpose of IRB oversight of research is to assure the protection of the rights and welfare of human subjects (USF, 2008). The IRB reviews studies and looks at factors such as study design, risks and benefits to study subjects, and proper obtainment of informed consent. It is important that any health needs assessment survey regarding water, sanitation, and hygiene be submitted and approved by an IRB before administering the survey and/or other research techniques. Additionally, it is the responsibility of the principal investigator researcher to make sure translation of documents is done properly and is culturally sensitive to the study population.

## 5 Understanding the Target Population when Administering a Survey

Administering a survey in a community in the developing world can have many challenges. The target population may be illiterate, speak a different language, and have cultural and gender characteristics that differ from the researcher. It is important

to understand the dynamics of the study or target population in order to effectively collect data.

### 5.1 Illiteracy

Many times, the study population in the developing world may be illiterate or suffer from low literacy levels. This can be a challenge in administering a survey if no preparation is done ahead of time. It is important to have an option for people to either verbally consent to being a study subject by voice recording or having an ink pad so that the study participant can stamp his or her finger, which serves as a signature. Furthermore, if a study subject is illiterate, a researcher may need to read the entire survey out loud to a study participant and mark their responses. This can be difficult if one cannot maneuver the language of the participants very well. If this happens, it may be best to have a native speaker with you to read or translate as necessary.

### 5.2 Gender

Gender is treated differently between cultures and may be a barrier when trying to implement a survey. To begin with, men and women have different cultural roles, which include water, sanitation, and hygiene practices. Often, it is the woman who is in charge of household water and sanitation activities such as: food preparation, washing of clothes and dishes, caring for the sick, bathing children, and assisting with defecation activities, such as changing diapers and helping young ones. Due to the exposures that women face within the household, they suffer from different risks regarding water-related disease than men. Most often in agrarian societies, it is the men who partake in

the agricultural duties, placing them at a different risk for water-related diseases than women and children.

When developing and administering a survey at the household or family level, it is best to gear it towards the female head of household. The female head of household is usually a better indicator of household water, sanitation, and hygiene practices for the family as a whole, as it is the females who tend to take care of the children, and demonstrate certain behaviors that the children model and learn. The men are usually less involved in child-rearing and tend to have different water, sanitation, and hygiene practices based on their gender roles, and the fact that their work typically occurs outside of the home.

When determining the optimal time to administer health needs assessment surveys, it is best to figure out when the women will most likely be in the home, and when they would be able to give a few minutes of their time. A community meeting before administering the surveys can be helpful in gaining support and increasing awareness about the survey. General dates and times should be announced at the meeting as to when the survey will take place, allowing for women to plan ahead and to ensure that they will be in their homes to complete the surveys.

Finally, in some cultures, the males may want to take charge, or may not let the women partake in the survey. It is important to make field notes in a journal detailing specific information that may be useful when analyzing survey data.

## 6 Analyzing Data

The survey data can be inputted either into Microsoft Excel to run descriptive statistics, or can be put into Epi Info for further statistical analysis of the data. The analyzed data provides the researcher with information about the study population such as frequencies and correlations.

## 7 Reporting Results to Community and Providing Suggestions

An important part of a health needs assessment is to use the results from a survey or other assessment tool(s) to provide suggestions for the implementation of a public health intervention. In addition, a Community Report needs to be developed detailing the assessment, and written at a low enough grade level to make it easier for low-literacy populations to understand the report. The report should be presented at a community meeting and then a copy should be left with the leader of the community, or health care provider.

## 8 How to Use Health Needs Assessment Results in Designing an Engineering Water or Sanitation Project

The assessment results and analysis from the survey, focus groups, key informant interviews, ethnography studies, and other methods, are used to understand the study population's needs and practices relating to water, sanitation, and hygiene. The survey results can guide suggestions to be made to the community. Additionally, the results can assist with the proposal and development of interventions to be carried out within the community regarding water, sanitation, and hygiene. Engineers and public health workers need to be careful when entering a community and carrying out

an intervention. There are many cultural and environmental factors that can make an intervention ineffective. Surveys, combined with other assessment tools, can provide unique insight as to etiology of disease and other cultural practices that could affect implementation of an intervention.

The results from the survey can serve to better guide an engineering intervention such as providing an improved community water or sanitation source. It can also provide engineers with important insight into the etiology of disease and the water, sanitation, and hygiene behaviors of the community, as well as providing information on diseases present in the community related to water and sanitation issues. The survey results can assist an engineer in developing a hygiene promotion program to be carried out alongside the engineering intervention within a community.

**9 References**

Centers for Disease Control. (2009). *What is Epi Info?*. Retrieved April 26, 2009, from http://www.cdc.gov/epiinfo/

*End Poverty 2015: Millennium Development Goals*. (2008). Retrieved March 30, 2009 from http://www.un.org/millenniumgoals/bkgd.shtml

Macaulay, A.C., Commanda, L.E., Freeman, W.L., Gibson, N., McCabe, M.L., Robbins, C.M., et al. (1999). Participatory research maximizes community and lay involvement. *BMJ, 319.*

Petersen, D.J., & Alexander, G.R. (2001). Needs assessment in public health: A practical guide for students and professionals. New York: Kluwer Academic/Plenum Publishers.

UNICEF & WHO. (2008). *Progress on drinking water and sanitation: special focus on sanitation.* Retrieved March 30, 2009 from the World Health Organization website: http://www.who.int/water_sanitation_health/monitoring/jmp2008.pdf

University of South Florida: Division of Research Integrity and Compliance. (2008). *Quick start guide for educators*. Retrieved from http://www.research.usf.Edu/cs/quickstart.htm

World Health Organization. (2008). *GLAAS UN water global annual assessment of sanitation and drinking water pilot report-testing a new approach*. (2008).

Retrieved from the World Health Organization website: http://www.who.int/water_sanitation_health /glaas_2008_pilot_finalreport.pdf

World Health Organization & UNICEF. (2006). Core questions on drinking-water and sanitation for household surveys. Retrieved from http://whqlibdoc.who.int/publications/2006/ 9789241563260_eng.pdf

World Health Organization. (2004). *Water, sanitation, and hygiene links to health FACTS AND FIGURES*. Retrieved from the World Health Organization's website: http://www.who.int/water_sanitation_health/factsfigures2005.pdf

World Health Organization. (2001). *Community health needs assessment: an introductory guide for the family health nurse in Europe*. (2001). Retrieved from the World Health Organization website: http://www.euro.who.int/document/ e73494.pdf

World Health Organization & UNDP- World Bank Water and Sanitation Program. (1997). *The PHAST initiative: participatory hygiene and sanitation transformation- a new approach to working with communities.* Retrieved from http://www.who.int/ water_sanitation_health/hygiene/envsan/EOS96-11a.pdf

## 10 Appendices

**Appendix A:** Example Water, Sanitation, and Hygiene Health Needs Assessment Survey


**Assessment of Drinking Water Supply and System, Sanitation, Hygiene Practices, and Parasitic Gastrointestinal Infections after the Cholera Pandemic in Pucará, Ecuador**

Please answer all of the questions below regarding the members of your household

Household ID:_____
Date of Interview:_____
Interviewee:_____
Interviewer:_____

**I. General Demographics**

A. Household
How many people currently live in the house?_____

| | |
|---|---|
| Name of the mother of the house: | Age: |
| Name of the father of the house: | Age: |
| Child 1: | Age: |
| Child 2: | Age: |
| Child 3: | Age: |
| Child 4: | Age: |
| Other: | Age: |
| Other: | Age: |
| Other: | Age: |

B. Education
Number of years of education:
Mother of house: _____
Father of house: _____

C. Job Information
What is your job?
□ Agriculture □ Masonry □ Owner of:_____ □ Work in the home
□ Do not work

D. Social Economic Status
The entire family sleeps in how many different rooms?
□only one room □two rooms □three rooms □more than three rooms

Do you: Own your house_____
Rent your house_____
Given for free_____
Other_____

Did you get house with help from government or other institution? Y/N

**II. Water Source**

A. Where do you get water for drinking, cooking, bathing and brushing your teeth?
Pipe system Well River Lake
Spring Other_____
A combination of places (please specify)_____

Is the water source: Private Communal

Do you boil the water before drinking it? Y/N

Do you use boiled water for washing vegetable and fruits? Y/N

Do you use boiled water for brushing your teeth? Y/N

**III. Sanitation**

A. Where do you mainly defecate?
□ Latrine □Flush toilet with handle
□Flush toilet where you throw down water from a bucket to flush it
□ Field □Other (Specify)

B. If you use a flush toilet (with handle or where you use a bucket of water to flush), where does the piping go to? _____

C. What do you do with the used toilet paper?
□throw it in the field □burn it □it goes into the community sewage system
□it goes into the septic tank □other (please specify)_____

The last time that your youngest child (name of child)_____ defecated, where did the feces go?

□child used a latrine/toilet □threw the feces in the latrine/toilet □threw the feces directly into the septic pit
□threw the feces in the garbage □threw the feces in the garden
□threw the feces in the field □Other (please specify)_____ □Do not know

**IV. Hygiene Practices**

The majority of the time, do you wash your hands:
□with water only □with water and soap □ I do not wash my hands
□Other way (please specify)_____

How often do you wash your hands with soap and water after defecating/going to the bathroom?
□Always □Sometimes □ I wash my hands always or sometimes, but I do not use soap
□ I do not wash my hands

How often do you wash your hands with soap and water before eating?
□Always □ Sometimes □ I wash my hands always or sometimes, but I do not use soap
□ I do not wash my hands

How often do you wash your hands with soap and water before cooking or preparing food?
□Always □ Sometimes □I wash my hands always or sometimes, but I do not use soap
□I do not wash my hands □I do not cook or prepare food ever

Do you buy soap specifically for hand washing? Y/N
If no, why not? (please specify)
□soap is too expensive □I do not like to use soap or I am not interested in using soap
□I use the soap that is for washing dishes and clothes instead □there isn't a place nearby to buy soap □I do not like the kind sold in the store

Do you cover and store your unused food? Y/N
If yes, how? (please explain)_____

## V. Health

A. In the last 15 days, has anyone in your household had diarrhea? Y/N

| If Yes, then who? | For How Long (In Days)? | With Fever? |
|---|---|---|
| Name_____ | How Many Days? __ | Y/N |
| Name_____ | How Many Days? __ | Y/N |
| Name_____ | How Many Days? __ | Y/N |
| Name_____ | How Many Days? __ | Y/N |

B. In the last 6 months, did the doctor tell you that any member of your household had intestinal parasites? Y/N

If Yes, then who?

Name_____ When diagnosed (specify which month)?_____

Name_____ When diagnosed (specify which month)?_____

Name_____ When diagnosed (specify which month)?_____

Name_____ When diagnosed (specify which month)?_____

Name_____ When diagnosed (specify which month)?_____

C. In the last 15 days, has anyone in your household had a respiratory infection (cold, flu, bronchitis, pneumonia, throat infections)? Yes/No

If Yes, then who?

Name_____ ¿How many days?_____

Name_____ ¿How many days?_____

Name_____ ¿How many days?_____

Name_____ ¿How many days?_____

Name_____ ¿How many days?_____

## VI. Post Cholera Epidemic (1991-1993)

A. After the cholera epidemic of 1991-1993, do you think the water system was improved?

1-Not at all
2-A little
3-Some
4-A lot
5-Do not know

6- No answer

B. After the cholera epidemic of 1991-1993, do you think the sanitation system has been improved?

1-Not at all
2-A little
3-Some
4-A lot
5-Do not know
6- No answer

C. After the cholera epidemic of 1991-1993, do you think your household hygiene practices have been improved?

1-Not at all
2-A little
3-Some
4-A lot
5-Do not know
6- No answer

**Thank you for your time. The survey is now complete.**

**Appendix B:** Example Informed Consent Form


Survey Number:_____

## Informed Consent to Participate in Research

**Information to Consider Before Taking Part in this Research Study**

**IRB Study # _____**

---

Researchers at the University of South Florida (USF) study many topics. To do this, we need the help of people who agree to take part in a research study. This form tells you about this research study.

We are asking you to take part in a research study that is called: Assessment of Drinking Water Supply and System, Sanitation, Hygiene Practices, and Parasitic Gastrointestinal Infections after the Cholera Pandemic in Pucará, Ecuador.

The person who is in charge of this research study is Daragh A. Gibson, MPH/MSES Candidate. This person is called the Principal Investigator. However, other research staff may be involved and can act on behalf of the person in charge.

The person explaining the research to you may be someone other than the Principal Investigator.

The research will be done at each individual household in Pucará.

---

## Purpose of the study

The purpose of this study is to

- to assess the drinking water supply and treatment system, sanitation, hygiene practices, and incidence of diarrheal disease and gastrointestinal parasite infection within the community of Pucará
- to determine drinking water quality in water source, water treatment tank, and distribution system, and determine amount of pathogen destruction based on a number

of parameters, such as chlorine concentration, flow, pH, turbidity, temperature, free chlorine levels, contact time, fecal coliform levels, and total suspended solids.

## Study Procedures

If you take part in this study, you will be asked to:

- *Respond to questions asked in a survey regarding water, sanitation, hygiene practices, gastrointestinal parasitic and respiratory infections, and the cholera pandemic of 1991-1993.*

If you take part in this study, you may be asked to:

- *Provide six water samples from your household or community faucet over a two day time period, with three samples taken on Day 1 and another three samples taken on Day 2.*

Your participation in this study will take anywhere between 20 (survey only) and 50 minutes (survey and water sampling).

You have the alternative to choose not to participate in this research study.

## Benefits

We don't know if you will get any benefits by taking part in this study.

## Risks or Discomfort

This research is considered to be minimal risk. That means that the risks associated with this study are the same as what you face every day. There are no known additional risks to those who take part in this study.

## Compensation

We will not pay you for the time you volunteer while being in this study.

## Confidentiality

We must keep your study records as confidential as possible. The surveys will be stored in a locked cabinet at the University of South Florida where only the researchers will have access to them. In addition, the data from the surveys entered into a database on a computer will be protected with a password, and only the researchers will have access to it.

However, certain people may need to see your study records. By law, anyone who looks at your records must keep them completely confidential. The only people who will be allowed to see these records are:

- The research team, including the Principal Investigator, study coordinator, and all other research staff**.**

- Certain government and university people who need to know more about the study. For example, individuals who provide oversight on this study may need to look at your records. This is done to make sure that we are doing the study in the right way. They also need to make sure that we are protecting your rights and your safety.) These include:
    - The University of South Florida Institutional Review Board (IRB) and the staff that work for the IRB. Other individuals who work for USF that provide other kinds of oversight may also need to look at your records.

We may publish what we learn from this study. If we do, we will not let anyone know your name. We will not publish anything else that would let people know who you are.

## Voluntary Participation / Withdrawal

You should only take part in this study if you want to volunteer. You should not feel that there is any pressure to take part in the study, to please the investigator or the research staff. You are free to participate in this research or withdraw at any time. There will be no penalty if you stop taking part in this study.

## Questions, concerns, or complaints

If you have any questions, concerns or complaints about this study, call Daragh A. Gibson at XXX.XXX.XXXX

If you have questions about your rights as a participant in this study, general questions, or have complaints, concerns or issues you want to discuss with someone outside the research, call the Division of Research Integrity and Compliance of the University of South Florida at (813) 974-9343.

If you experience an unanticipated problem related to the research call Daragh A. Gibson at XXX.XXX.XXXX

## Consent to Take Part in this Research Study

It is up to you to decide whether you want to take part in this study. If you want to take part, please sign the form, if the following statements are true.

**I freely give my consent to take part in this study.** I understand that by signing this form I am agreeing to take part in research. I have received a Study Information Sheet for Survey Participants to take with me detailing the information found on this form.

_____ _____

Signature of Person Taking Part in Study Date

_____

Printed Name of Person Taking Part in Study

## Statement of Person Obtaining Informed Consent

I have carefully explained to the person taking part in the study what he or she can expect.

I hereby certify that when this person signs this form, to the best of my knowledge, he or she understands:

- What the study is about.
- What procedures/interventions/investigational devices will be used.
- What the potential benefits might be.
- What the known risks might be.

_____ _____

Signature of Person Obtaining Informed Consent Date

_____

Printed Name of Person Obtaining Informed Consent

**Appendix C:** Example Study Information Sheet


Survey Number:_____

## Study Information Sheet for Survey Participants: Pucará, Ecuador

Name of Person conducting survey:_____ Date:_____

You have taken part in a survey for a research study described here.

STUDY TITLE: Assessment of Water Supply and System, Sanitation, Hygiene Practices, and Parasitic Gastrointestinal Infections after the Cholera Pandemic in Pucará, Ecuador

PERSON IN CHARGE: Daragh A. Gibson PHONE NUMBER: XXX.XXX.XXXX
LOCAL CONTACT: Dr. John Smith XXX.XXX.XXXX

PURPOSE: The purpose of this study is to assess the drinking water supply and treatment system, sanitation, hygiene practices, and incidence of diarrheal disease and gastrointestinal parasite infection within the community of Pucará.

RISKS, BENEFITS, AND ALTERNATIVES: There are no known risks or benefits to participation in this study. You have the alternative not to participate. **Your participation is voluntary.** You may withdraw at any time without penalty.

CONFIDENTIALITY: All information provided on the survey will be kept confidential in a locked electronic database and in a locked filing cabinet. Only researchers will have access to the study data. The information collected from your participation will be used to meet the study goals. Results of the study may be published, but will not contain any personally identifiable information about you.

CONSENT: Informed Consent to Participate in Research was obtained prior to your participation in this study. If you decide at any time that you want your information to be excluded from this research study, please use the contact phone number above and provide your survey number (in the top right corner of this information sheet) so that your information can be removed from the study.

QUESTIONS OR COMPLAINTS:

If you have any concerns, do not hesitate to call the numbers listed above. If you have any questions about your rights, general questions, complaints, or issues as a person taking part in

this study, call the Division of Research Integrity and Compliance of the University of South Florida at 001.813.974.9342.