

Appendix 1a: English consent form for compound study enrollment

International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B)

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Stephen Luby

Purpose of the research

Hello (Assalamualaikum/Nomoshkar). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are interested in conducting research on diarrheal diseases in children to learn how it affects their physical and mental development. Through this research we want to learn about the direct health benefits of some simple interventions to improve the sanitation, water quality, hygiene practices or nutritional status for children under three. We want to understand whether child health and development is more when these interventions are provided separately or together so that we can make recommendations for cost effective interventions in the future.

Why are we inviting you to participate in the study?

We are interested in enrolling this compound because one of them women is pregnant, and we are interested in evaluating children early in their life.

What is expected from the participants of the research study?

The study will last for two years. Following your permission we will enroll this entire compound into the study. It will be assigned into a group that that may receive a hand washing station with soapy water, Aquatabs with a storage container for water treatment, potties and scoops for hygienic handling and disposal of children and animal feces, latrines with a water seal or nutritional supplements for children under 24 months. Any hardware provided will be promoted by a local community health promoter, who will visit your compound for household visits and courtyard meetings. You or your compound members cannot choose your group; you will be randomly assigned to a group through a lottery. It may be that even though the compound is eligible, interventions may not be given to meet the research needs. However, we hope that you will still participate for the knowledge this research will provide.

If your compound decides to join the study, study representatives will initially visit your household to collect some information through interviews with the family members, observations and by taking some measurements of the child if applicable. This will include demographic information and questions about everyday hygiene, water treatment and sanitation practices related information. With your permission, they will inspect your sanitation facilities as well. The representative will also ask questions about each child regarding vaccination status, child development and weigh and measure the child if they are present or after they are born. They will also ask mothers or caregivers about their infant feeding practices, and whether the infant has been sick. This will be done 3 times during the two year study period. We want to evaluate our interventions and its effects on your child through the collected information.

Risks & Benefits

There are no major risks involved in this study. The interventions described such as improved latrines, child potties, hand washing stations and Aquatabs are widely promoted for health benefits. Chlorine treatment of drinking water is the most common water disinfectant used.

There is no direct compensation benefit for participating in this study. The Lipid-based Nutrient Supplement (LNS) that will be used in this study has been tested in Bangladesh and in Studies in Africa, and no adverse health effects were reported. We do not expect any adverse reactions related to this product in this trial either. Households of your compound might benefit health effects from the different interventions we would deliver.

Privacy, anonymity and confidentiality

All data and specimens collected will be kept confidential as allowed by the law of this country.

Confidentiality of the data and test results will be strictly maintained. All the recorded in-depth interview data will be kept confidential and the digitally recorded data will be erased after the completion of data analysis. We will use the information only for the purpose of the study, and we will not use your name in sharing and publishing the results of this study.

Future use of information

The information collected from this study may be shared with other researchers if needed, but we will strictly maintain your confidentiality and privacy. With your permission, we may use information such as your name and household location to contact you in the future, after this study ends. We will ask for your permission at the end of this study (about 2 years from now).

Right not to participate and withdraw

Taking part in the study is completely voluntary. The enrolled members of the households may choose not to answer any or all of the questions asked. You can drop out of this study at any time, even in the middle of an interview or group discussion. You have the right to refuse participation in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You need not pay us to take part in this study, and similarly we will not pay you money for attending in the study.

Persons to contact:

If you have any question, you can ask me any time. If you have additional questions about the survey, you may contact:

Sania Ashraf, Center of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212. Phone: 8860523-32 # 120

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of the survey, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to our proposal of enrolling your household in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Consent to enroll into the study:

YES _____ NO _____

Signature or left thumb impression of Participant

Date

Signature or left thumb impression of the witness

Date

Signature of the PI or his/her representative

Date

Appendix 1b: English consent form for household enrollment

International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B)

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Stephen Luby

Purpose of the research

Hello (Assalamualaikum/Nomoshkar). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are interested in conducting research on diarrheal diseases in children to learn how it affects their physical and mental development. Through this research we want to learn about the direct health benefits of some simple interventions to improve the sanitation, water quality, hygiene practices or nutritional status for children under three. Malnutrition in children is associated with infections of our intestines that can change our use of nutrients. It is possible that genes in our body, made up of DNA, make some children more susceptible to malnutrition than others. These DNA is inherited from our parents and we also carry genes from many friendly microbes that live on and in our body. We want to understand whether child health and development is more when these interventions are provided separately or together so that we can make recommendations for cost effective interventions in the future. These 2 years of a child's life is important for the child's physical and mental development.

Why are we inviting you to participate in the study?

Because you are expecting to deliver a baby in the next 8 months and we are interested in evaluating child development early in life, we would like to invite you to participate in this study.

What is expected from the participants of the research study?

The study will last for two years. Following your permission we will enroll this household into the study. It will be assigned into a group that that may receive a hand washing station with soapy water, chlorine tablets named Aquatabs with a storage container for water treatment, potties and scoops for hygienic handling and disposal of children feces, latrines with a water seal or nutritional supplements for children under 24 months. Any hardware provided will be supported by behavior change communication to encourage their use, by a local community health promoter, who will visit your compound for household visits and courtyard meetings. You or your household members cannot choose your group; you will be randomly assigned to a group through a lottery. It may be that even though the household is eligible, no interventions will be given to meet study requirements. However, we hope that you will still participate for the knowledge this research will provide.

If your household decides to join the study, we will want to collect a small amount of blood (equivalent to two teaspoon) to determine your blood group and genes (DNA). We will also collect a stool and urine sample with your cooperation. This will only be done once at the beginning of the study. (Your decision to participate in this part of the study is optional and will not affect your child's participation).

After you child is born, approximately one year after enrollment, when your child will be ~8-15 months, we will collect a small amount of blood (equivalent to a teaspoon) to determine your child's genes (DNA) and examine whether they have been exposed to any parasites. We will also collect a sample of your child's urine at this time.

We will repeat the above sample collection at year 2 when your child is 20-27 months old.

Study representatives will initially visit your household to collect some information through interviews with the family members, observations and by taking some measurements of the child if applicable. This will include socio-demographic information and questions about everyday hygiene, water treatment and sanitation practices related information. With your permission, they will inspect your sanitation facilities as well. The representative will also ask child specific questions regarding vaccination status, child development and weigh and measure the child if they are present or after they are born. They will also ask mothers or caregivers about their infant feeding practices, and whether the infant has been sick. This will be done 3 times during the two year study period. We want to evaluate our interventions and its effects on your child through the collected information.

Risks & Benefits

There are no major risks involved in this study. The interventions described such as improved latrines, child potties, hand washing stations and Aquatabs are widely promoted for health benefits. Chlorine treatment of drinking water is the most common water disinfectant used. There is no direct monetary compensation benefit for participating in this study. The Lipid-based Nutrient Supplement (LNS) that will be used in this study has been tested in Bangladesh and in Studies in Africa, and no adverse health effects were reported. We do not expect any adverse reactions related to this product in this trial either. There is a slight risk of breach of confidentiality but we will take great care to protect your personal information. Households of your compound might benefit health effects from the different interventions we would deliver. The small amount of blood, stool or urine we will collect from you and your child over the course of this study will not be dangerous to you or your child.

Privacy, anonymity and confidentiality

Confidentiality of the data and test results will be strictly maintained. All the recorded in-depth interview data will be kept confidential and the digitally recorded data will be erased after the completion of data analysis. We will use the information only for the purpose of the study, and we will not use your name in sharing and publishing the results of this study.

All data and specimens collected will be kept confidential as allowed by the law of this country. The samples and the test results will be coded without your name or personal information, and stored separately for analysis by the researchers. None of these researchers will be able to identify you or your child as the sample donors. Other persons who may have access to your test results include research groups that oversee the safety of the study including institutes such as the University of California Berkeley and the Bill and Melinda Gates Foundation, USA. Because of the potential need to release information to these parties, and the genetic information we are collecting is potentially identifying, we cannot guarantee absolute confidentiality. However, we will ensure every effort that we can to preserve your confidentiality. If you sign this form, you permit us to release information to authorized researchers and the safety committee. There is no expiration date to this permission. This information will be coded and it is unlikely that anyone will be able to trace it to you and your child, protecting your privacy.

Future use of information

The information collected from this study may be shared with other researchers if needed, but we will strictly maintain your confidentiality and privacy. In the future, we may wish to perform additional tests on the blood and stool specimens that already collected. The samples will be stored at ICDDR,B. No further consent will be taken from you. If you change your mind about having your specimen saved for further testing, you may contact us and the sample will be discarded and not saved.

Right not to participate and withdraw

Taking part in the study is completely voluntary. The enrolled members of the households may choose not to answer any or all of the questions asked. You can drop out of this study at any time, even in the middle of an interview or group discussion. If you wish, we will withdraw your permission and we will destroy your samples and those of your child and remove data from the database. You have the right to refuse participation in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You need not pay us to take part in this study, and similarly we will not pay you money for attending in the study.

Persons to contact:

If you have any question, you can ask me any time. If you have additional questions about the survey, you may contact:

Sania Ashraf, Center of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212. Phone: 8860523-32 # 120

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of the survey, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to our proposal of enrolling your household in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Consent to enroll into the study: YES _____ NO _____

Consent of the mother for sample collection: YES _____ NO _____

Signature or left thumb impression of Participant

Date

Signature or left thumb impression of the witness

Date

Signature of the PI or his/her representative

Date

Appendix 1c: English consent form for household enrollment for water intervention

International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B)

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Stephen Luby

Purpose of the research

Hello (Assalamualaikum/Nomoshkar). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are interested in conducting research on diarrheal diseases in children to learn how it affects their physical and mental development. Through this research we want to learn about the direct health benefits of some simple interventions to improve the sanitation, water quality, hygiene practices or nutritional status for children under three. We want to understand whether child health and development is more when these interventions are provided separately or together so that we can make recommendations for cost effective interventions in the future.

Why are we inviting you to participate in the study?

Because you are expecting to deliver a baby in the next 8 months and we are interested in evaluating child development early in life, we would like to invite you to participate in this study.

What is expected from the participants of the research study?

The study will last for two years. Following your permission we will enroll this household into the study. Through a lottery this compound your household has been assigned to receive Aquatabs, which a chlorine based tablet used to purify drinking water. We will also provide a storage container for you to store drinking water. A local female community health promoter will visit your compound for household visits and invite you to attend courtyard meetings where she will promote the use of this product to regularly treat your drinking water.

If your household decides to join the study, study representatives will initially visit your household to collect some information through interviews with the family members, observations and by taking some measurements of the child if applicable. This will include socio-demographic information and questions about everyday hygiene, water treatment and sanitation practices related information. With your permission, they will inspect your sanitation facilities as well. The representative will also ask child specific questions regarding vaccination status, child development and weigh and measure the child if they are present or after they are born. They will also ask mothers or caregivers about their infant feeding practices, and whether the infant has been sick. This will be done 3 times during the two year study period; once at the beginning, at one year and two year of the study period. We want to evaluate our interventions and its effects on your child through the collected information.

Risks & Benefits

There are no major risks involved in this study. Chlorine treatment of drinking water is the most common water disinfectant used. There is no direct monetary compensation benefit for participating in this study. Households of your compound might benefit health effects from the improved drinking water quality through use of this product.

Privacy, anonymity and confidentiality

All data and specimens collected will be kept confidential as allowed by the law of this country.

Confidentiality of the data and test results will be strictly maintained. All the recorded in-depth interview data will be kept confidential and the digitally recorded data will be erased after the completion of data analysis. We will use the information only for the purpose of the study, and we will not use your name in sharing and publishing the results of this study.

Future use of information

The information collected from this study may be shared with other researchers if needed, but we will strictly maintain your confidentiality and privacy.

Right not to participate and withdraw

Taking part in the study is completely voluntary. You may choose not to answer any or all of the questions that will be asked about your household or your hygiene or water related behavior. You can drop out of this study at any time, even in the middle of an interview or group discussion. You have the right to refuse participation in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You need not pay us to take part in this study, and similarly we will not pay you money for attending in the study.

Persons to contact:

If you have any question, you can ask me any time. If you have additional questions about the survey, you may contact:

Sania Ashraf, Center of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212. Phone: 8860523-32 # 120

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of the survey, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to our proposal of enrolling your household in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Consent to enroll into the study: YES_____ NO_____

Signature or left thumb impression of Participant

Date

Signature or left thumb impression of the witness

Date

Signature of the PI or his/her representative

Date

Appendix 1d: English consent form for household enrollment for hand washing interventions

International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B)

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Stephen Luby

Purpose of the research

Hello (Assalamualaikum/Nomoshkar). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are interested in conducting research on diarrheal diseases in children to learn how it affects their physical and mental development. Through this research we want to learn about the direct health benefits of some simple interventions to improve the sanitation, water quality, hygiene practices or nutritional status for children under three. We want to understand whether child health and development is more when these interventions are provided separately or together so that we can make recommendation for cost effective interventions in the future.

Why are we inviting you to participate in the study?

Because you are expecting to deliver a baby in the next 8 months and we are interested in evaluating child development early in life, we would like to invite you to participate in this study.

What is expected from the participants of the research study?

The study will last for two years. Following your permission we will enroll this household into the study. Through a lottery your household has been assigned to receive a hand washing station to be placed beside your latrine and your kitchen to encourage hand washing after defecation and while preparing food. A local female community health promoter will visit your compound for household visits and invite you to attend courtyard meetings where she will promote the use of the hand washing station. She will also teach you how to make soapy water using detergent and water which you can use as a hand cleansing agent.

If your household decides to join the study, study representatives will initially visit your household to collect some information through interviews with the family members, observations and by taking some measurements of the child if applicable. This will include socio-demographic information and questions about everyday hygiene, water treatment and sanitation practices related information. With your permission, they will inspect your sanitation facilities as well. The representative will also ask child specific questions regarding vaccination status, child development and weigh and measure the child if they are present or after they are born. This will be done 3 times during the two year study period; once at the beginning, at one year and two year of the study period. We want to evaluate our interventions and its effects on your child through the collected information.

Risks & Benefits

There are no major risks involved in this study. Soapy water does not have any harmful side effects. There is no direct monetary compensation benefit for participating in this study. Households of your compound might benefit health effects from the improved health through use of this product.

Privacy, anonymity and confidentiality

All data and specimens collected will be kept confidential as allowed by the law of this country.

Confidentiality of the data and test results will be strictly maintained. All the recorded in-depth interview data will be kept confidential and the digitally recorded data will be erased after the completion of data analysis. We will use the information only for the purpose of the study, and we will not use your name in sharing and publishing the results of this study.

Future use of information

The information collected from this study may be shared with other researchers if needed, but we will strictly maintain your confidentiality and privacy.

Right not to participate and withdraw

Taking part in the study is completely voluntary. You may choose not to answer any or all of the questions that will be asked about your household or your hygiene or water related behavior. You can drop out of this study at any time, even in the middle of an interview or group discussion. You have the right to refuse participation in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You need not pay us to take part in this study, and similarly we will not pay you money for attending in the study.

Persons to contact:

If you have any question, you can ask me any time. If you have additional questions about the survey, you may contact:

Sania Ashraf, Programme on Infectious Diseases and Vaccine Sciences, ICDDR,B, Mohakhali, Dhaka 1212. Phone: 8860523-32 # 120

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of the survey, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to our proposal of enrolling your household in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Consent to enroll into the study: YES _____ NO _____

Signature or left thumb impression of Participant

Date

Signature or left thumb impression of the witness

Date

Signature of the PI or his/her representative

Date

Appendix 1e: English consent form for household enrollment for sanitation interventions

International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B)

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Stephen Luby

Purpose of the research

Hello (Assalamualaikum/Nomoshkar). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are interested in conducting research on diarrheal diseases in children to learn how it affects their physical and mental development. Through this research we want to learn about the direct health benefits of some simple interventions to improve the sanitation, water quality, hygiene practices or nutritional status for children under three. We want to understand whether child health and development is more when these interventions are provided separately or together so that we can make recommendation for the most cost effective interventions in the future.

Why are we inviting you to participate in the study?

Because you are expecting to deliver a baby in the next 8 months and we are interested in evaluating child development early in life, we would like to invite you to participate in this study.

What is expected from the participants of the research study?

The study will last for two years. Following your permission we will enroll this household into the study. Through a lottery your household has been assigned to receive a child potty for your child to use for defecation, a sani scoop for hygienic disposal of animal and child feces into a latrine or a pit. Sani scoops will be also provided to all the households. In addition, all latrines in this compound will be inspected by research members to see if they meet hygienic standards. If not, they will be repaired to meet hygienic standards which may include installing water seals, dual pits, repairs or building a new dual pit latrine where appropriate. A local female community health promoter will visit your compound for household visits and invite you to attend courtyard meetings where she will promote the use of the mentioned products and the latrine.

If your household decides to join the study, study representatives will initially visit your household to collect some information through interviews with the family members, observations and by taking some measurements of the child if applicable. This will include socio-demographic information and questions about everyday hygiene, water treatment and sanitation practices related information. With your permission, they will inspect your sanitation facilities as well. The representative will also ask child specific questions regarding vaccination status, child development and weigh and measure the child if they are present or after they are born. This will be done 3 times during the two year study period; once at the beginning, at one year and two year of the study period. We want to evaluate our interventions and its effects on your child through the collected information.

Risks & Benefits

There are no major risks involved in this study. There is no direct monetary compensation benefit for participating in this study. Households of your compound might benefit from improved health through use of the products and of the latrine.

Privacy, anonymity and confidentiality

All data and specimens collected will be kept confidential as allowed by the law of this country.

Confidentiality of the data and test results will be strictly maintained. All the recorded in-depth interview data will be kept confidential and the digitally recorded data will be erased after the completion of data analysis. We will use the information only for the purpose of the study, and we will not use your name in sharing and publishing the results of this study.

Future use of information

The information collected from this study may be shared with other researchers if needed, but we will strictly maintain your confidentiality and privacy.

Right not to participate and withdraw

Taking part in the study is completely voluntary. You may choose not to answer any or all of the questions that will be asked about your household or your hygiene or water related behavior. You can drop out of this study at any time, even in the middle of an interview or group discussion. You have the right to refuse participation in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You need not pay us to take part in this study, and similarly we will not pay you money for attending in the study.

Persons to contact:

If you have any question, you can ask me any time. If you have additional questions about the survey, you may contact:

Sania Ashraf, Center of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212. Phone: 8860523-32 # 120

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of the survey, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to our proposal of enrolling your household in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Consent to enroll into the study: YES _____ NO _____

Signature or left thumb impression of Participant

Date

Signature or left thumb impression of the witness

Date

Signature of the PI or his/her representative

Date

Appendix 1f: English consent form for household enrollment for nutritional supplements

International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B)

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Stephen Luby

Purpose of the research

Hello (Assalamualaikum/Nomoshkar). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are interested in conducting research on diarrheal diseases in children to learn how it affects their physical and mental development. Through this research we want to learn about the direct health benefits of some simple interventions to improve the sanitation, water quality, hygiene practices or nutritional status for children under three. We want to understand whether child health and development is improved when these interventions are provided separately or together so that we can make recommendation for cost effective interventions in the future.

Why are we inviting you to participate in the study?

Because you are expecting to deliver a baby in the next 8 months and we are interested in evaluating child development early in life, we would like to invite you to participate in this study.

What is expected from the participants of the research study?

The study will last for two years. Following your permission we will enroll this household into the study. Through a lottery your household has been assigned to receive daily nutritional supplements for children from the age of 6 to 21 months. Since there might not be a child in that age group in this household at the moment, you will receive the supplement when your child reaches that age. A local female community health promoter will visit your compound for household visits and invite you to attend courtyard meetings where she will promote the daily consumption of 2 sachets of the supplements. She will also deliver a monthly requirement of these sachets to your households.

The product is a vitamin and mineral supplement made using vegetable oil, groundnut and milk powder. Twice per day, you should add 1 sachet (10g) of the supplement to 2-3 tablespoons of already prepared food (such as rice porridge), and feed your child the mixture before feeding the rest of the food. In total, your child should consume two sachets per day. Do not cook the supplement or refrigerate it; it will keep at room temperature.

If your household decides to join the study, study representatives will initially visit your household to collect some information through interviews with the family members, observations and by taking some measurements of the child if applicable. This will include socio-demographic information and questions about everyday hygiene, water treatment and sanitation practices. With your permission, they will inspect your sanitation facilities as well. The representative will also ask child specific questions regarding vaccination status, child development and weigh and measure the child if they are present or after they are born. They will also ask mothers or caregivers about their infant feeding practices, and whether the infant has been sick. This will be done 3 times during the two year study period; at the beginning, after one year and after two years. We want to evaluate our interventions and its effects on your child using this information.

Risks & Benefits

There are no major risks involved in this study. There is no direct monetary compensation benefit for participating in this study.

The Lipid-based Nutrient Supplement (LNS) that will be used in this study has been tested in Bangladesh and in studies in Africa, and no adverse health effects were reported. We do not expect any adverse reactions related to this product in this trial either. However, should your child have any adverse reactions shortly after ingesting the supplement (such as vomiting, stomach pain, rash, breathing problems with wheezing), we recommend that you stop using the supplement and notify one of the study staff immediately.

Privacy, anonymity and confidentiality

All data and specimens collected will be kept confidential as allowed by the law of this country.

Confidentiality of the data and test results will be strictly maintained. All the recorded in-depth interview data will be kept confidential and the digitally recorded data will be erased after the completion of data analysis. We will use the information only for the purpose of the study, and we will not use your name in sharing and publishing the results of this study.

Future use of information

The information collected from this study may be shared with other researchers if needed, but we will strictly maintain your confidentiality and privacy.

Right not to participate and withdraw

Taking part in the study is completely voluntary. You may choose not to answer any or all of the questions that will be asked about your household or your hygiene or water related behavior. You can drop out of this study at any time, even in the middle of an interview or group discussion. You have the right to refuse participation in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You need not pay us to take part in this study, and similarly we will not pay you money for participating in the study.

Persons to contact:

If you have any questions, you can ask me any time. If you have additional questions about the survey, you may contact:

Sania Ashraf, Center of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212. Phone: 8860523-32 # 120

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of the survey, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to our proposal of enrolling your household in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Consent to enroll into the study: YES _____ NO _____

Signature or left thumb impression of Participant

Date

Signature or left thumb impression of the witness

Date

Signature of the PI or his/her representative

Date

Appendix 1g: English consent form for household enrollment for water + hygiene + sanitation

International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B)

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Stephen Luby

Purpose of the research

Hello (Assalamualaikum/Nomoshkar). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are interested in conducting research on diarrheal diseases in children to learn how it affects their physical and mental development. Through this research we want to learn about the direct health benefits of some simple interventions to improve the sanitation, water quality, hygiene practices or nutritional status for children under three. We want to understand whether child health and development is more when these interventions are provided separately or together so that we can make recommendation for cost effective interventions in the future.

Why are we inviting you to participate in the study?

Because you are expecting to deliver a baby in the next 8 months and we are interested in evaluating child development early in life, we would like to invite you to participate in this study.

What is expected from the participants of the research study?

The study will last for two years. Following your permission we will enroll this household into the study. Through a lottery your household has been assigned to receive a hand washing station with soapy water, Aquatabs with a storage container for water treatment, potties and scoops for hygienic handling and disposal of children feces, installation or repairs to a dual pit latrine with a water seal. A local female community health promoter will visit your compound for household visits and invite you to attend courtyard meetings where she will promote the use of these products. Sani scoops will be also provided to all the households. In addition, all latrines in this compound will be inspected by research members to see if they meet hygienic standards. If not, they will be repaired to meet hygienic standards which may include installing water seals, dual pits, repairs or building a new dual pit latrine where appropriate.

If your household decides to join the study, study representatives will initially visit your household to collect some information through interviews with the family members, observations and by taking some measurements of the child if applicable. This will include socio-demographic information and questions about everyday hygiene, water treatment and sanitation practices related information. With your permission, they will inspect your sanitation facilities as well. The representative will also ask child specific questions regarding vaccination status, child development and weigh and measure the child if they are present or after they are born. They will also ask mothers or caregivers about their infant feeding practices, and whether the infant has been sick. This will be done 3 times during the two year study period; once at the beginning, at one year and two year of the study period. We want to evaluate our interventions and its effects on your child through the collected information.

Your acceptance or refusal to these activities will not affect your consent to participate in the overall study.

Risks & Benefits

There are no major risks involved in this study. Soapy water does not have any harmful side effects. There is no direct monetary compensation benefit for participating in this study. You and your family might experience a health benefits from the different interventions we would deliver. Households will benefit by receiving free sanitation, hand washing, water quality improvements and nutrition supplements provided by the study.

The Lipid-based Nutrient Supplement (LNS) that will be used in this study has been tested in Bangladesh and in Studies in Africa, and no adverse health effects were reported. We do not expect any adverse reactions related to this product in this trial either. However, should your child have any adverse reactions shortly after ingesting the supplement (such as vomiting, stomach pain, rash, breathing problems with wheezing), we recommend that you stop using the supplement and notify one of the study staff immediately.

Privacy, anonymity and confidentiality

All data and specimens collected will be kept confidential as allowed by the law of this country.

Confidentiality of the data and test results will be strictly maintained. All the recorded in-depth interview data will be kept confidential and the digitally recorded data will be erased after the completion of data analysis. We will use the information only for the purpose of the study, and we will not use your name in sharing and publishing the results of this study.

Future use of information

The information collected from this study may be shared with other researchers if needed, but we will strictly maintain your confidentiality and privacy.

Right not to participate and withdraw

Taking part in the study is completely voluntary. You may choose not to answer any or all of the questions that will be asked about your household or your hygiene or water related behavior. You can drop out of this study at any time, even in the middle of an interview or group discussion. You have the right to refuse participation in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You need not pay us to take part in this study, and similarly we will not pay you money for attending in the study.

Persons to contact:

If you have any question, you can ask me any time. If you have additional questions about the survey, you may contact:

Sania Ashraf, Center of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212. Phone: 8860523-32 # 120

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of the survey, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to our proposal of enrolling your household in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Consent to enroll into the study: YES_____ NO_____

Signature or left thumb impression of Participant

Date

Signature or left thumb impression of the witness

Date

Signature of the PI or his/her representative

Date

Appendix 1h: English consent form for household enrollment for water + hygiene + sanitation + nutritional supplements

International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B)

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Stephen Luby

Purpose of the research

Hello (Assalamualaikum/Nomoshkar). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are interested in conducting research on diarrheal diseases in children to learn how it affects their physical and mental development. Through this research we want to learn about the direct health benefits of some simple interventions to improve the sanitation, water quality, hygiene practices or nutritional status for children under three. We want to understand whether child health and development is more when these interventions are provided separately or together so that we can make recommendation for cost effective interventions in the future.

Why are we inviting you to participate in the study?

Because you are expecting to deliver a baby in the next 8 months and we are interested in evaluating child development early in life, we would like to invite you to participate in this study.

What is expected from the participants of the research study?

The study will last for two years. Following your permission we will enroll this household into the study. Through a lottery your household has been assigned to receive a hand washing station with soapy water, Aquatabs with a storage container for water treatment, potties and scoops for hygienic handling and disposal of children feces, installation or repairs to a dual pit latrine with a water seal if applicable and nutritional supplements for children under 24 months. Since there might not be a child in that age group in this household at the moment, you will receive the supplement when your child reaches that age. A local female community health promoter will visit your compound for household visits and invite you to attend courtyard meetings where she will promote the use of these products. She will also deliver a monthly requirement the nutritional sachets to your households. Sani scoops will be also provided to all the households. In addition, all latrines in this compound will be inspected by research members to see if they meet hygienic standards. If not, they will be repaired to meet hygienic standards which may include installing water seals, dual pits, repairs or building a new dual pit latrine where appropriate.

The nutritional product is a vitamin and mineral supplement made using vegetable oil, groundnut and milk powder. Twice per day, you should add 1 sachet (10g) of the supplement to 2-3 tablespoons of already prepared food (such as rice porridge), and feed your child the mixture before feeding the rest of the food. In total, your child should consume two sachets per day. Do not cook the supplement or refrigerate it; it will keep at room temperature.

If your household decides to join the study, study representatives will initially visit your household to collect some information through interviews with the family members, observations and by taking some measurements of the child if applicable. This will include socio-demographic information and questions about everyday hygiene, water treatment and sanitation practices related information. With your permission, they will inspect your sanitation facilities as well. The representative will also ask child specific questions regarding

vaccination status, child development and weigh and measure the child if they are present or after they are born. They will also ask mothers or caregivers about their infant feeding practices, and whether the infant has been sick. This will be done 3 times during the two year study period; once at the beginning, at one year and two year of the study period. We want to evaluate our interventions and its effects on your child through the collected information.

Risks & Benefits

There are no major risks involved in this study. Soapy water does not have any harmful side effects. There is no direct monetary compensation benefit for participating in this study. You and your family might experience a health benefits from the different interventions we would deliver. Households will benefit by receiving free sanitation, handwashing, water quality improvements and nutrition supplements provided by the study.

The Lipid-based Nutrient Supplement (LNS) that will be used in this study has been tested in Bangladesh and in studies in Africa, and no adverse health effects were reported. We do not expect any adverse reactions related to this product in this trial either. However, should your child have any adverse reactions shortly after ingesting the supplement (such as vomiting, stomach pain, rash, breathing problems with wheezing), we recommend that you stop using the supplement and notify one of the study staff immediately.

Privacy, anonymity and confidentiality

All data and specimens collected will be kept confidential as allowed by the law of this country.

Confidentiality of the data and test results will be strictly maintained. All the recorded in-depth interview data will be kept confidential and the digitally recorded data will be erased after the completion of data analysis. We will use the information only for the purpose of the study, and we will not use your name in sharing and publishing the results of this study.

Future use of information

The information collected from this study may be shared with other researchers if needed, but we will strictly maintain your confidentiality and privacy.

Right not to participate and withdraw

Taking part in the study is completely voluntary. You may choose not to answer any or all of the questions that will be asked about your household or your hygiene or water related behavior. You can drop out of this study at any time, even in the middle of an interview or group discussion. You have the right to refuse participation in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You need not pay us to take part in this study, and similarly we will not pay you money for attending in the study.

Persons to contact:

If you have any questions, you can ask me any time. If you have additional questions about the survey, you may contact:

Sania Ashraf, Center of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212. Phone: 8860523-32 # 120

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of the survey, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to our proposal of enrolling your household in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Consent to enroll into the study: YES_____ NO_____

Signature or left thumb impression of Participant

Date

Signature or left thumb impression of the witness

Date

Signature of the PI or his/her representative

Date

Appendix 1i-1: English consent for parasitic assessment of children (target child, children aged 18-27 months at baseline or 5-12 years at endline) in the same compound

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's Name: Dr. Leanne Unicomb

Purpose of the research

Hello/Assalamualaikum/Namaste. My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are conducting research on diarrheal diseases and through this particular study we want to learn about the health impact of diarrheal diseases in children. We are interested in learning if the exposure of a child to diarrheal disease has long term effects. We are conducting this research with scientists at the University of California, Berkeley in the United States.

Why are we inviting you to participate in the study?

We are interested in enrolling your child because s/he is between the age of 18-27 months. Diarrhea is common among children in this age group. We are interested to know the risk of parasites for children in this bari. Therefore, we hope you will allow your child to participate into this study upon learning more details of participation.

What is expected from the participants of the research study?

Participation in this study will only span a few hours. To achieve the aim of the project we will collect a blood and a stool sample from your child. Both the samples will help us understand whether your child has been exposed to parasites diarrhea by conducting laboratory tests.

If you agree to participate, a field research person will visit your household twice for this purpose to collect a stool sample and a blood prick from your child. On the day before the collection a field member will deliver a stool collection kit and instruct you how to collect stool from your child. You will be instructed to collect your child's stool on the following morning, if your child defecates before their arrival, by having your child defecate on a sheet of provided plastic and use a plastic scoop to collect a small amount of fresh stool from the top of the pile into a container. The field person will collect this container when they come to collect the other specimens. We will examine whether your child has any worm infections, but this analysis will be done in Dhaka, and we will not be able to share the results with you. We will offer all members of your compound deworming medication regardless of the stool sample result.

The blood sample will be collected through a finger prick. Your child will experience a momentary pinch and approximately seven drops of blood will be collected by our trained field staff. One drop of blood will be used to test your child for anemia, a condition of lower than normal red blood cells. The field member can provide you with the results of this test during their visit.

In addition, if you are enrolled in the sanitation or control arms of the study, we will collect one soil sample from your household entrance to look for worm eggs.

Risks & Benefits

Although we will try to protect your identity there is some possibility that confidentiality could be compromised. The blood drops will be collected by a trained professional. Your child may feel some momentary pain during the blood collection. There is no direct benefit for participating in this study, but your child's participation will help us to gain knowledge on diarrheal disease in children.

Confidentiality

All data and specimens collected will be kept confidential as allowed by the law of this country.

Confidentiality of the data and test results will be strictly maintained. We will use the information only for the purpose of the study, and we will not use your name in sharing and publishing the results of this study.

Future use of information

The blood and stool samples may be stored until the end of the study, so they can be analyzed in the lab. If you agree, the information, along with some of the blood and stool collected will be stored for a long time after the study ends. This is because new laboratory techniques will become available in the future to help us better understand how diarrheal diseases affect children's health. The information collected from this study may be shared with other researchers if needed, but we will strictly maintain your confidentiality.

Right not to participate and withdraw

Taking part in the study is completely voluntary. You have the right to decline to allow your child to participate or to withdraw your child at any point in this study without penalty or loss of benefits to which you are otherwise entitled. You may choose not to answer any or all of the questions that will be asked. You can drop out of this study at any time, even in the middle of an interview. You have the right to refuse to take part in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You need not pay us to take part in this study, and similarly we will not pay you money for attending in the study.

Persons to contact:

If you have any questions, you can ask me any time. If you have additional questions about the survey, you may contact:

Masud Parvez, Center of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212.
Phone: 8860523-32 # 120

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of the research, you may contact or meet IRB Secretariat, M. A. Salam Khan:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to participate in our study and to allow your child to participate in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

I consent to storing my child's blood and stool samples long term []

Thank you for your cooperation

_____	_____
Signature or left thumb impression of Guardian	Date
_____	_____
Signature or left thumb impression of the witness	Date
_____	_____
Signature of the PI or his/her representative	Date

Appendix 1i-2: English assent for parasitic assessment of children aged 7-12 years at endline in the same compound

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's Name: Dr. Leanne Unicomb

Hello/Assalamualaikum/Namaste. My name is _____, and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are conducting research on health and worm infections. We are conducting this research with scientists at the University of California, Berkeley in the United States. You are being invited to participate in this study because your bari is already participating in the study.

What is a research study?

A research study is when people like me collect a lot of information about a certain thing to find out more about it.

This letter tells you about the study so you can decide if you want to be in it. Before you decide, you can talk about it with your parents or anyone else you like. If you have any questions about the research, just ask me.

Why are we doing this study?

The purpose of this study is to learn how certain hygiene, sanitation, and nutrition behaviors and practices affect health and worm infections in children. Worm infections are common in rural Bangladesh, especially in children.

Why are we talking to you about this study?

We are inviting thousands of other children your age in Bangladesh to participate in this study. We're inviting you to be in the study because your bari is already participating in the study.

What will happen if you are in this study?

If you agree to be in this study and your parents say it's okay, we may ask you to:

- Let us take a blood sample from your finger.
We will also ask you to let us prick your finger to collect blood. You will experience a momentary pinch and about seven drops of blood will be collected through our trained field staff. We will collect seven drops of blood to test for infections. This part will take about 10 minutes.

If you don't want to give a blood sample, you don't have to.

- Collect a poop sample.

We will give you a kit to collect stool with today and we will come back tomorrow. We will ask you to poop on a sheet of plastic and use a plastic scoop to collect a small amount of fresh poop from the top of the pile into a container. Your parents can help you if needed. The field person will collect this container when they return. This part will take about 10 minutes.

If you don't want to give a poop sample, you don't have to.

- Offer you deworming medication.

We will offer you deworming medication. This part will take about 5 minutes

If you don't want to take deworming medication, you don't have to.

Total time: Altogether, the whole study will take about 25 minutes of your time.

Study place: We will collect these samples at your bari.

Will you get healthier if you are in the study?

We will offer you deworming medication in this study. If you have certain worm infections, the medication may help make you feel better by treating your infection.

Will any part of the study be uncomfortable or hurt?

- Blood drawing: Getting your finger pricked can hurt for a few seconds from the needle stick going in, like when you get a shot at the doctor's office. Afterwards, you might get a little bruise. Sometimes an infection can develop there, but that hardly ever happens.
- Deworming medication: The medication also may make you feel sick for a short time. There is a very small chance that you will have stomach pain, diarrhea, nausea, vomiting, dizziness, itchiness or skin rash.

Will you get paid for being in the study?

You will not be paid for being in this study.

Do you have to be in the study?

No, you don't! Research is something you do only if you want to. Nothing bad will happen if you don't want to be in the study. Just tell us. And remember, you can always change your mind later if you don't want to be in the study any more.

Do you have any questions?

You can ask questions about this study at any time, now or later. You can talk to me, or your parents, or someone else if you like.

You can contact Masud Parvez: phone: 01817541872, Center of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212.

ASSENT OF CHILD (7-12 years old)

If you decide to participate, and your parents agree, we will give you a copy of this form to keep. That way you can look at it later if you want to.

Do you agree to be in this research study?

Child's Name/Signature (*printed or written by child*)*
or by field worker if child cannot write

Date

Signature of Investigator/Person Obtaining Assent

Date

**If verbal assent only is being obtained:*

Investigator or Person Conducting Assent Discussion: Initial here if child cannot sign, to document that child received this information and gave assent verbally: _____

Appendix 1j: English consent form for environmental enteropathy and parasitic assessment

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Leanne Unicomb

Purpose of the research

Hello/Assalamualaikum/Namaste. My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are conducting research on diarrheal diseases and through this particular study we want to learn about the health impact of diarrheal diseases in children. Malnutrition in children is associated with infections of our intestines that can change our use of nutrients. It is possible that genes in our body, made up of DNA, make some children more susceptible to malnutrition than others. This DNA is inherited from our parents and we also carry genes from many friendly microbes that live on and in our body. We are interested in learning if the exposure of a child to diarrheal disease has long term effects. We also are interested in learning how certain foods, nutrition, or life experiences in general may interact with diarrhea or other illnesses.

Why are we inviting you to participate in the study?

We are interested in enrolling this compound because we collected information on your household earlier and we are interested in conducting additional testing to evaluate your child's digestive tract. We are interested in evaluating your child's blood, stool, saliva, hair and urine for markers of nutritional status, infections and health. We are also interested in evaluating your saliva, hair, blood, and urine for markers of infections, stress and health.

What is expected from the participants of the research study?

Participation in this study will only span a few hours. To achieve the aim of the project, if you agree to be in this study, we will collect a blood, stool, and urine sample from your child. With your permission, we might also collect 5 saliva samples and 3-4 strands of hair from your child and a urine sample, a blood sample, 4 saliva samples, and 3-4 strands of hair from you. From the blood sample, we will measure nutritional markers, indicators of factors children inherit from their parents, and we will be able to understand whether your child has been exposed to infection. The urine sample will help us understand whether there has been a long term physical effect as a result of diarrhea. We will also collect a stool sample from your child with your help.

If you agree to participate, a field research person will visit your household twice for this purpose. Today a field member will weigh the child using a scale, measure his/her height using a height board, measure arm and head circumference using a tape measure and collect general health measures of blood pressure, sweat, and heart rate. The blood pressure and heart rate results from your child will be provided to you after the testing. The field representative will also collect general health measures of blood pressure, sweat, and heart rate. Your blood pressure and heart rate results will be provided to you after the testing. The field representative will also cut and collect 3-4 strands of hair from you and your child. With your permission, we will collect a small amount of blood (equivalent to 1.5 teaspoons) from a vein in your child's arm to determine their blood group and genes (DNA) and test for infections that they may have had in the past, and measure their nutritional status. One drop

of blood will be used to test your child for anemia, a condition of lower than normal red blood cells. The field member can provide you with the results of this test during their visit. We will record how your child responds to these procedures. If you agree, we would like to videotape your child during the blood-draw. We will use this information to better understand how these procedures affect child behavior. We will also ask you about how your child reacts to new situations, and what helps your child feel comfortable in new situations, which will take 10-15 minutes. This will help us understand your child's reaction to the different procedures we are administering for this project. We might also collect a small amount (10ml) of blood from your vein. We might also collect 3 saliva samples each from both you and your child before, during, and after the blood draw using a soft sponge placed under the tongue. The field member will deliver a stool collection kit and instruct you how to collect stool from your child. You will be instructed to collect your child's stool on the following morning, if the child defecates before their arrival, by having your child defecate in a clean diaper and use a plastic scoop to collect a small amount of fresh stool from the top of the pile into a container. The field person will collect this container when they come to collect the other specimens on the following day. Total participation time today will be approximately 3 hours and 15 minutes.

Tomorrow, we will ask you to collect your first urine sample of the morning immediately after you wake up. The main procedure will involve a second saliva collection, collecting your child's urine for 1 hour, feeding your child sugar syrup and then collecting their urine sample over a period of 5 hours. We intend to test the urine for the syrup to help us understand the health impacts of diarrhea in children. For a urine sample, due to the age of your child, we will be using a special urine collection bag to collect the urine from your child and we will demonstrate how it is used.

You/the mother will be requested to not feed your child for at least one hour before we feed him/her the syrup. During this fasting period, we will collect your child's urine for 1 hour by attaching the urine collection bag with a drainage tube (show sample) to the child. We will also collect two additional saliva samples from your child and one additional saliva sample from you using a soft sponge. We will then give a dose of the sugar syrup to the child and attach the urine collection bag with a drainage tube (show sample) to the child immediately after feeding him/her the syrup. We will encourage the child to drink water 30 minutes after taking the syrup to help urination. The field representative will remove the urine from the bag, whenever the child urinates. This collection will take place for 6 hours after which the bag will be removed from the child. During the 6-hour period of urine collection, you will be asked the quantities of foods (and the ingredients) you fed the child in the previous day and night. You will also be asked about your personal life experiences and health. You will be asked about perceptions regarding social norms that may affect a child's health. From the stool sample, we will examine whether your child has any worm infections, but this analysis will be done in Dhaka. We will offer your child deworming medication regardless of the stool sample result. Total participation time tomorrow will be approximately 7 hours.

Later, at the laboratory, we will measure your blood, saliva, hair, and urine samples and your child's blood, stool, saliva, hair, and urine samples for markers of nutritional status, infections, and health. You will not receive the results of any laboratory tests.

Study time: Study participation will take a total of approximately *10 hours and 15 minutes over 2 days*.

Risks & Benefits

Although we will try to protect your identity there is some possibility that confidentiality could be compromised. The syrup is a natural sugar solution that tastes pleasant. The blood will be collected by a trained professional. You and your child may feel some momentary pain during the blood collection. Your child may also feel some discomfort due to the presence of urine collection bag for 6 hours. Some of the questions I would like to ask you may seem private or personal since they touch on your life and health. You may feel uncomfortable talking about some of the topics. You do not have to answer any question or take part in the discussion/interview/survey if you don't wish to do so, and that is also fine. You do not have to give us any reason for not responding to any question, or for refusing to take part in the interview. All your answers will be kept as confidential as possible, and we anticipate that the risks from participating in this survey will be very minimal. There is no direct benefit for participating in this study, but your child's participation will help us to gain knowledge on the health impact of diarrheal diseases and how certain foods, nutrition, and life experiences in general may interact with diarrhea or other illnesses.

Confidentiality

All data and specimens collected will be kept confidential as allowed by the law of this country. The samples and the test results will be coded without your name or your child's name or personal information, and stored separately for analysis by the researchers. None of these researchers will be able to identify you or your child as the sample donors. Other persons who may have access to your test results include research groups that oversee the safety of the study including institutes such as the University of California Berkeley and the Bill and Melinda Gates Foundation, USA. Because of the potential need to release information to these parties, and the genetic information we are collecting is potentially identifying, we cannot guarantee absolute confidentiality. However, we will ensure every effort that we can to preserve your confidentiality. There is no expiration date to this permission. This information will be coded and it is unlikely that anyone will be able to trace it to you and your child, protecting your confidentiality.

All videotapes will be identified by a number only; no recordings will identify you or your child by name. These will be viewed only by trained personnel for coding of your child's response to the procedure. The videos will not be viewed by any other person. The videos will be stored in a locked cabinet accessible by study personnel only. These will never be made available to any persons not participating in the study.

Future use of information

The blood, urine, saliva, hair, and stool samples may be stored until the end of the study, so they can be analyzed in the lab at the same time. If you agree, the information, along with some of the blood, urine, saliva, hair and stool collected will be stored at ICDDR,B for up to 20 years so that we can conduct advanced tests on these samples to understand the infections that you may have had, and to find out what microbes lived in your body. No further consent will be taken from you, and you will not receive the results of these tests. A senior scientist at ICDDR,B will decide who can use the stored samples, and what tests will be done. If you change your mind about having your specimen saved for further testing, you may contact us and the sample will be discarded and not saved. The videotapes will be stored indefinitely.

Right not to participate and withdraw

Taking part in the study is completely voluntary. You may choose not to allow your child to participate in this study. You can drop out of this study at any time, even in the middle of the

sample/urine collection. You have the right to refuse participation in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You need not pay us to take part in this study, and similarly we will not pay you money for attending in the study.

Persons to contact:

If you have any questions, you can ask me any time. If you have additional questions about the survey, you may contact:

Masud Parvez: phone: 01817541872., ICDDR,B, Mohakhali, Dhaka 1212. Phone: 8860523-32 # 120

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of the survey, you may contact or meet IRB Secretariat, M.A. Salam Khan:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to participate and you allow your child to participate, please indicate that by checking the boxes of the activities that you will agree to below:

Urine Collection ☐ **mother** ☐ **child**

Venous Blood Collection ☐ **mother** ☐ **child**

Stool Collection ☐ **child**

Saliva sample collection ☐ **mother** ☐ **child**

Hair sample collection ☐ **mother** ☐ **child**

Urine Long-term storage ☐ **mother** ☐ **child**

Venous Blood Long-term storage ☐ **mother** ☐ **child**

Stool Long-term storage ☐ **child**

Saliva sample Long-term storage ☐ **mother** ☐ **child**

Hair sample Long-term storage ☐ **mother** ☐ **child**

If you agree to our proposal of enrolling your household in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Signature or left thumb impression of Guardian

Date

Signature or left thumb impression of the witness

Date

Signature of the PI or his/her representative

Date

Appendix 1k-1: English consent form for environmental assessment (drinking water, hand rinse, sentinel toy, food sampling and fly density measurements)

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Stephen P. Luby

Purpose of the research

Hello (Assalamualaikum/Namaste). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are doing research on diarrheal diseases in children. Through this research we want to learn how certain conditions in sanitation, water quality and hygiene practices impact health. We are conducting this research in collaboration with scientists at University of California, Berkeley in the United States.

Why are we inviting you to participate in the study?

We are seeking households that have a child less than 3 years old and have already taken part in other activities from this study. We would like to tell you more detail about this study and hope you and your child will volunteer to participate.

What is expected from the participants of the research study?

If you decide to take part in the study, during two visits we will conduct some specific activities. In the first visit, which we would like to do today, we will ask you questions about your home and compound, and some practices in your home. We will also give your children one toy ball and set up fly traps in the latrine and kitchen areas of your compound. We will also wash your young child's hands in clean water and keep the water used to wash the hands. We will also take a very small amount of stored food that young children in your household will eat. Finally, we will ask you to give us a glass of water that you would give to your children to drink. We will take a small amount of the water that you give us.

We will return tomorrow for a second visit, wash the balls in water, keep the water used to wash the toy. Your child may choose to play with the ball or not; this is up to him or her. During this second visit, we will count the flies caught at the fly trap in the latrine and kitchen areas of your compound. We will also ask you a few short questions. Each visit will be less than 1 hour.

Risks & Benefits

There are no major risks involved in this study. Your children will receive 2 toy balls as a gift. You will not directly benefit from participating in this study but this participation will enable us to gain knowledge regarding fecal contamination in association with diarrhea.

Privacy, anonymity and confidentiality

We will do everything we can keep what you tell us confidential as allowed by the law of this country. We will not use your real name when we write out the data. All the information we collect will be kept locked. We will use the information only for the purpose of the study. We will not use your name when we share and publish the results of this study. We expect the steps we take will keep all of your information confidential, but it is possible that because of mistakes or unforeseen events, it could become compromised.

Future use of information

If it is necessary, we may share the information we collected from this study with other researchers. If this is done, we will not use your real name and we will maintain your confidentiality. We will store the information we collect from you for a long time after the end of the study.

Right not to participate and withdraw

Taking part in the study is completely voluntary. You may choose not to answer any or all of the questions that will ask. You can drop out of this study at any time, even in the middle of an interview. You have the right to refuse to take part in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You do not need to pay us to take part in this study, and we will not pay you money for taking part in the study.

Persons to contact:

If you have any questions, you can ask me any time. If you have additional questions about the survey, you may contact: Masud Parvez: phone: 01817541872, Center of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212.

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of this study, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to participate in our study and for your children to participate in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Signature or left thumb impression of Participant

Date

Signature or left thumb impression of the witness

Date

Signature of the PI or his/her representative

Date

Appendix 1k-2: English consent form for environmental assessment (drinking water and food measurements in water arm)

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Stephen P. Luby

Purpose of the research

Hello (Assalamualaikum/Namaste). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are doing research on diarrheal diseases in children. Through this research we want to learn how certain conditions in sanitation, water quality and hygiene practices impact health. We are conducting this research in collaboration with scientists at University of California, Berkeley in the United States.

Why are we inviting you to participate in the study?

We are seeking households that have a child less than 3 years old and have already taken part in other activities from this study. We would like to tell you more detail about this study and hope you and your child will volunteer to participate.

What is expected from the participants of the research study?

If you decide to take part in the study, we will conduct some specific activities. During our visit, which we would like to do today, we will ask you questions about your home and compound, and some practices in your home. We will also take a very small amount of stored food that young children in your household will eat. Finally, we will ask you to give us a glass of water that you would give to your children to drink. We will take a small amount of the water that you give us. The visit will be less than 1 hour.

Risks & Benefits

There are minimal risks involved in this study. There is a slight risk of breach of confidentiality, but we will do our best to minimize this risk. You will not directly benefit from participating in this study but this participation will enable us to gain knowledge regarding fecal contamination in association with diarrhea.

Privacy, anonymity and confidentiality

All data and specimens collected will be kept confidential to the greatest extent possible.. Researchers at ICDDR,B will have access to some of your personal information that could identify you, such as your name and your phone number. They will remove the identifiable information before sharing it with researchers at partner institutions, such as UC Berkeley. Your research records will be kept in a locked cabinet, and computer-based data, will be stored in an encrypted format on a password-protected server.

Other persons who may have access to your information include research groups that oversee the safety of the study including institutes such as the University of California Berkeley and the Bill and Melinda Gates Foundation, USA. None of the researchers outside of ICDDR,B will be able to identify you or your child from information you provide. We will use the information only for the purpose of the study. We will not use your name when we share and publish the results of this study. We expect the steps we take will keep all of your information confidential, but it is possible that because of mistakes or unforeseen events, it could become compromised.

Future use of information

If it is necessary, we may share the information we collected from this study with other researchers. If this is done, we will not use your real name and we will maintain your confidentiality. We will store the information we collect from you for a long time after the end of the study.

Right not to participate and withdraw

Taking part in the study is completely voluntary. You have the right to decline to allow your child to participate or to withdraw your child at any point in this study without penalty or loss of benefits to which you are otherwise entitled. You may choose not to answer any or all of the questions that will ask. You can drop out of this study at any time, even in the middle of an interview. You have the right to refuse to take part in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You do not need to pay us to take part in this study, and we will not pay you money for taking part in the study.

Persons to contact:

If you have any questions, you can ask me any time. If you have additional questions about the survey, you may contact: Masud Parvez: phone: 01817541872, Center of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212.

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of this study, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to participate in our study and for your children to participate in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Signature or left thumb impression of Participant

Date

Signature or left thumb impression of the witness

Date

Signature of the PI or his/her representative

Date

Appendix 1k-3: English consent form for environmental assessment (hand rinse and food measurements in hygiene arm)

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Stephen P. Luby

Purpose of the research

Hello (Assalamualaikum/Namaste). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are doing research on diarrheal diseases in children. Through this research we want to learn how certain conditions in sanitation, water quality and hygiene practices impact health. We are conducting this research in collaboration with scientists at University of California, Berkeley in the United States.

Why are we inviting you to participate in the study?

We are seeking households that have a child less than 3 years old and have already taken part in other activities from this study. We would like to tell you more detail about this study and hope you and your child will volunteer to participate.

What is expected from the participants of the research study?

If you decide to take part in the study, we will conduct some specific activities. During our visit, which we would like to do today, we will ask you questions about your home and compound, and some practices in your home. We will also take a very small amount of stored food that young children in your household will eat. We will also wash your young child's hands in clean water and keep the water used to wash the hands. The visit will be less than 1 hour.

Risks & Benefits

There are minimal risks involved in this study. There is a slight risk of breach of confidentiality, but we will do our best to minimize this risk. You will not directly benefit from participating in this study but this participation will enable us to gain knowledge regarding fecal contamination in association with diarrhea.

Privacy, anonymity and confidentiality

All data and specimens collected will be kept confidential to the greatest extent possible. . Researchers at ICDDR,B will have access to some of your personal information that could identify you, such as your name and your phone number. They will remove the identifiable information before sharing it with researchers at partner institutions, such as UC Berkeley. Your research records will be kept in a locked cabinet, and computer-based data, will be stored in an encrypted format on a password-protected server.

Other persons who may have access to your information include research groups that oversee the safety of the study including institutes such as the University of California Berkeley and the Bill and Melinda Gates Foundation, USA. None of the researchers outside of ICDDR,B will be able to identify you or your child from information you provide. We will use the information only for the purpose of the study. We will not use your name when we share and publish the results of this study. We expect the steps we take will keep all of your information confidential, but it is possible that because of mistakes or unforeseen events, it could become compromised.

Future use of information

If it is necessary, we may share the information we collected from this study with other researchers. If this is done, we will not use your real name and we will maintain your confidentiality. We will store the information we collect from you for a long time after the end of the study.

Right not to participate and withdraw

Taking part in the study is completely voluntary. You have the right to decline to allow your child to participate or to withdraw your child at any point in this study without penalty or loss of benefits to which you are otherwise entitled. You may choose not to answer any or all of the questions that will ask. You can drop out of this study at any time, even in the middle of an interview. You have the right to refuse to take part in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You do not need to pay us to take part in this study, and we will not pay you money for taking part in the study.

Persons to contact:

If you have any questions, you can ask me any time. If you have additional questions about the survey, you may contact: Masud Parvez: phone: 01817541872, Center of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212.

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of this study, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to participate in our study and for your children to participate in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Signature or left thumb impression of Participant

Date

Signature or left thumb impression of the witness

Date

Signature of the PI or his/her representative

Date

Appendix 1L: English consent form for 5-hour structured observation

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Stephen Luby

Purpose of the research

Hello (Assalamualaikum/Nomoshkar). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are interested in conducting research on diarrheal diseases in children to learn how it affects their physical and mental development. Through this research we want to learn about the direct health benefits of some simple interventions to improve the health of children under three.

Why are we inviting you to participate in the study?

Because you are expecting to deliver a baby in the next 8 months/you have a child under 3 years, and we are interested in evaluating child development early in life, we would like to invite you to participate in this study.

What is expected from the participants of the research study?

If you agree to take part, I will find a place to sit in your home or courtyard so that I will not be in your way. I will observe hygiene related activities in your home and take some notes. I may look around the courtyard to observe some of these practices and may ask you some questions in the end. I will be here for a total of about five hours.

Risks & Benefits

There is no cost to you for participation in this research. You will not receive any compensation for being in the study. We will only collect information related to health and hygiene. The process of having someone in your home for a longer time may be uncomfortable to you. However, we do not expect any harm to come to you or your family because of being observed.

Privacy, anonymity and confidentiality

We will secure all information collected from you in a locked cabinet, and none other than designated staff of this research study will have access to that information. We would, however, like to inform you that disclosure of your information is subject to the laws of Bangladesh. Your name and identity will not be used in reporting and presenting study findings.

Right not to participate and withdraw

You are free to decide whether or not to take part in the study. If you decide against participating in the study, and also if you withdraw your consent at any time after participation, you and your family will continue to receive the same benefits that you have otherwise been eligible for.

Persons to contact:

If you have any question, you can ask me any time. If you have additional questions about the survey, you may contact:

Abu Naser, Center of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212. Phone: 8860523-32 # 120

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of the survey, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to our proposal of enrolling your household in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

_____/_____/_____
Name of study representative Signature of Investigator Date:

_____/_____/_____
Name of study participant Signature/thumb impression of participant Date:

Appendix 1m: English consent form for maternal sample collection

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Stephen Luby

Purpose of the research

Hello (Assalamualaikum/Nomoshkar). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are interested in conducting research on diarrheal diseases in children to learn how it affects their physical and mental development. Through this research we want to learn about the direct health benefits of some simple interventions to improve the sanitation, water quality, hygiene practices or nutritional status for children under three. Malnutrition in children is associated with infections of our intestines that can change our use of nutrients. It is possible that genes in our body, made up of DNA, make some children more susceptible to malnutrition than others. These DNA is inherited from our parents and we also carry genes from many friendly microbes that live on and in our body. We want to understand whether child health and development is more when these interventions are provided separately or together so that we can make recommendations for cost effective interventions in the future. These 2 years of a child's life is important for the child's physical and mental development.

Why are we inviting you to participate in the study?

Because you are expecting to deliver a baby in the next 8 months and we are interested in evaluating child development early in life, we would like to invite you to participate in this study.

What is expected from the participants of the research study?

As part of the study, if your household decides to enroll in it, we will want to collect a small amount of blood (equivalent to two teaspoon) to determine your blood group and genes (DNA) and test for infections that you may have had in the past. We will also collect a stool and urine sample with your cooperation. We will test for parasites from the stool sample and try to understand nutritional status from the urine sample. This sample collection will only be done once at the beginning of the study. You will not receive the results of any tests. Your decision to participate in this part of the study is optional and will not affect your child's participation.

Risks & Benefits

The small amount of blood, stool or urine we will collect from you for this study will be collected through trained professionals and will not be dangerous to you. You may experience some discomfort during sample collection.

Privacy, anonymity and confidentiality

All data and specimens collected will be kept confidential as allowed by the law of this country. The samples and the test results will be coded without your name or personal information, and stored separately for analysis by the researchers. None of these researchers will be able to identify you or your child as the sample donors. Other persons who may have

access to your test results include research groups that oversee the safety of the study including institutes such as the University of California Berkeley and the Bill and Melinda Gates Foundation, USA. Because of the potential need to release information to these parties, and the genetic information we are collecting is potentially identifying, we cannot guarantee absolute confidentiality. However, we will ensure every effort that we can to preserve your confidentiality. There is no expiration date to this permission. This information will be coded and it is unlikely that anyone will be able to trace it to you and your child, protecting your privacy.

Future use of information

The information collected from this study may be shared with other researchers if needed, but we will strictly maintain your confidentiality and privacy. In the future, we may wish to perform additional tests on the blood and stool specimens that already collected. The samples will be stored at ICDDR,B. for upto 20 years so that we can conduct advanced tests on these samples to understand the infections that you may have had, and to find out what microbes lived in your body. No further consent will be taken from you, and you will not receive the results of these tests. A senior scientist at icddrb will decide who can use the stored samples, and what tests will be done. If you change your mind about having your specimen saved for further testing, you may contact us and the sample will be discarded and not saved.

Right not to participate and withdraw

Taking part in the study is completely voluntary. If you wish, we will withdraw your permission and we will destroy your samples and those of your child and remove data from the database. You have the right to refuse participation in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You need not pay us to take part in this study, and similarly we will not pay you money for attending in the study.

Persons to contact:

If you have any question, you can ask me any time. If you have additional questions about the survey, you may contact:

Sania Ashraf, Center of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212. Phone: 8860523-32 # 120

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of the survey, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to our proposal of enrolling your household in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Consent of the mother for sample collection:

YES _____ NO

Signature or left thumb impression of Participant

Date

Signature of the PI or his/her representative

Date

Appendix 1n: English consent form for household in-depth lead exposure interview

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Leanne Unicomb

Purpose of the research

Hello (Assalamualaikum/Nomoshkar). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are interested in conducting research on exposures that people in this area have to lead. Sometimes lead exposure can cause illness so we want to understand them better.

Why are we inviting you to participate in the study?

Because a sample of blood collected from you had an elevated level of lead. We are interested in exploring how you and your family might be exposed.

What is expected from the participants of the research study?

If your household decides to enroll in we will ask you a series of questions. We will ask also questions of the person who does most of the farming. We will want to look at your home and the fields your family works in. As it is very difficult to write all the conversation in a note pad, so, if you agree, we would like to record this sessions in a tape recorder. We would also like to take some notes from this session. This session will last about an hour. We would like to return to ask additional questions sometime in the future. Your decision to participate in this part of the study is optional and will not affect your household participation in WASH Benefits.

Risks & Benefits

We do not foresee any risk to the study. If we identify a source of lead, we will make recommendations on how to limit your family's exposure.

Privacy, anonymity and confidentiality

All data collected will be kept confidential as allowed by the law of this country. Other persons who may have access to your test results include research groups that oversee the safety of the study including institutes such as the University of California Berkeley and the Bill and Melinda Gates Foundation, USA. Because of the potential need to release information to these parties, we cannot guarantee absolute confidentiality. However, we will ensure every effort that we can to preserve your confidentiality. There is no expiration date to this permission. This information will be coded and it is unlikely that anyone will be able to trace it to you and your child, protecting your privacy.

Future use of information

The information collected from this study may be shared with other researchers if needed, but we will strictly maintain your confidentiality and privacy.

Right not to participate and withdraw

Taking part in the study is completely voluntary. "If, at any point during the study, you decide you do not wish to participate, we will withdraw your permission and we will destroy your soil, rice samples and data recorded from you." You have the right to refuse participation in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You need not pay us to take part in this study, and similarly we will not pay you money for attending in the study.

Persons to contact:

If you have any question, you can ask me any time. If you have additional questions about the survey, you may contact:

Dr. Mahbubur Rahman, Centre of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212. Phone: 8860523-32 # 120

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of the survey, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to our proposal of enrolling your household in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Consent of the mother for sample collection:

YES _____ NO

Signature or left thumb impression of Participant

Date

Signature of the PI or his/her representative

Date

Appendix 1o: English consent form for agrochemical in-depth interview

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Leanne Unicomb

Purpose of the research

Hello (Assalamualaikum/Nomoshkar). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are interested in conducting research on exposures that people in this area have to lead. Sometimes lead exposure can cause illness so we want to understand them better.

Why are we inviting you to participate in the study?

Sometimes chemicals used in agriculture contain lead. We want to understand what chemicals the farmers in this area purchase.

What is expected from the participants of the research study?

If you decide to enroll in we will ask you a series of questions. We will want to look at your shop. We will also collect a small sample of soil and some rice that is cultivated from your land. We may want to come and talk again. As it is very difficult to write all the conversation in a note pad, so, if you agree, we would like to record this sessions in a tape recorder. We would also like to take some notes from this session. This session will last about an hour. We would like to return to ask additional questions sometime in the future.

Risks & Benefits

This study presents minimal risk to you. Although we will try to protect your identity there is some possibility that confidentiality could be compromised. You will not directly benefit for participating in this study, but your participation will help us to gain knowledge on exposures that people in this area have to lead. If we identify a source of lead, we will inform the government and this may affect which chemicals are allowed to be sold.

Privacy and confidentiality

All data and specimens collected will be kept confidential as allowed by the law of this country. None of these researchers will be able to identify you. Other persons who may have access to you're your responses and the audio recordings include research groups that oversee the safety of the study including institutes such as the University of California Berkeley and the Bill and Melinda Gates Foundation, USA. Because of the potential need to release information to these parties, we cannot guarantee absolute confidentiality. However, we will ensure every effort that we can to preserve your confidentiality. There is no expiration date to this permission. This information will be coded and it is unlikely that anyone will be able to trace it to you protecting your privacy.

Future use of information

The information collected from this study may be shared with other researchers if needed, but we will strictly maintain your confidentiality and privacy.

Right not to participate and withdraw

Taking part in the study is completely voluntary. If you wish, you can withdraw your permission to participate at any time during the study and we will erase/destroy your soil and rice samples or any data recorded from you. You have the right to refuse participation in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You need not pay us to take part in this study, and similarly we will not pay you money for attending in the study.

Persons to contact:

If you have any question, you can ask me any time. If you have additional questions about the survey, you may contact:

Dr. Mahbubur Rahman, Centre of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212. Phone: 8860523-32 # 120

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of the survey, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to our proposal of enrolling your household in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Consent of the mother for sample collection:

YES _____ NO

Signature or left thumb impression of Participant

Date

Signature of the PI or his/her representative

Date

Appendix 1p: English consent form for lead case-control study

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Leanne Unicomb

Purpose of the research

Hello (Assalamualaikum/Nomoshkar). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are interested in conducting research on exposures that people in this area have to lead. Sometimes lead exposure can cause illness so we want to understand them better.

Why are we inviting you to participate in the study?

Some chemicals and metals can affect health and child development. We are interested in exploring how you and your family might be exposed to chemicals or metals in the environment.

What is expected from the participants of the research study?

If your household decides to enroll in we will ask you a series of questions. We will ask also questions of the person who does most of the farming. We will want to look at your home and the fields your family works in. We would like to collect a sample of soil from the field and a sample of uncooked rice that you cooked in the field. This session will last about an hour. We would like to return to ask additional questions sometime in the future. Your decision to participate in this part of the study is optional and will not affect your household participation in WASH Benefits.

Risks & Benefits

This study presents minimal risk to you. Although we will try to protect your identity there is some possibility that confidentiality could be compromised. You will not directly benefit for participating in this study, but your participation will help us to gain knowledge on lead exposures and associated risk factors for children and residents in this area. If our study identifies a dangerous exposure in your environment, we will make recommendations on how to limit your family's exposure.

Privacy and confidentiality

All data and specimens collected will be kept confidential as allowed by the law of this country. The soil and rice samples and the test results will be coded without your name or personal information, and stored separately for analysis by the researchers. None of these researchers will be able to identify you or your family as the sample donors. Other persons who may have access to your test results include research groups that oversee the safety of the study including institutes such as the University of California Berkeley and the Bill and Melinda Gates Foundation, USA. Because of the potential need to release information to these parties, we cannot guarantee absolute confidentiality. However, we will ensure every effort that we can to preserve your confidentiality. There is no expiration date to this

permission. This information will be coded and it is unlikely that anyone will be able to trace it to you and your child, protecting your privacy.

Future use of information

The information collected from this study may be shared with other researchers if needed, but we will strictly maintain your confidentiality and privacy.

Right not to participate and withdraw

Taking part in the study is completely voluntary. If you wish, we will withdraw your permission and we will destroy your soil, rice samples and data recorded from you. Moreover, you would also be able to withdraw your participation any time during the study. You have the right to refuse participation in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You need not pay us to take part in this study, and similarly we will not pay you money for attending in the study.

Persons to contact:

If you have any question, you can ask me any time. If you have additional questions about the survey, you may contact:

Dr. Mahbubur Rahman, Centre of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212. Phone: 8860523-32 # 120

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of the survey, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to our proposal of enrolling your household in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Consent of the mother for sample collection:

YES _____ NO

Signature or left thumb impression of Participant

Date

Signature of the PI or his/her representative

Date

Appendix 1q: English consent form for in-depth environmental assessment

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Stephen P. Luby

Purpose of the research

Hello (Assalamualaikum/Namaste). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are conducting a research on diarrheal diseases in children to learn how certain conditions in sanitation, water quality and hygiene practices impact health.

Why are we inviting you to participate in the study?

We are seeking households that are already taking part in other activities from this existing study. We would like to tell you more detail about this study and hope you and your child will volunteer to participate in this study. Additionally, there is either a pregnant woman or a young child in your household and we are interested to talk about their health.

What is expected from the participants of the research study?

If you decide to take part in the study, during two visits we will conduct some specific activities. In the first visit, which we would like to do today, we will ask you several questions about your home and compound, your child's health and observe your home. We will also collect some samples from your compound environment, including a water sample from your drinking water source, some water from your stored drinking water, some soil from the area where your children play and some prepared food you have in your home. We will also rinse your child's hands in clean water and collect the rinsed water. Finally we will capture some flies in your compound. We will take all of these samples back to our field lab to analyse them for bacterial contamination. These samples will help us understand what makes your children become sick by conducting laboratory tests. We will also take a look at your compound with your permission to observe your water, latrine and handwashing facilities. We will also ask you about your children's health. After initial visit we will return in about 7 to 10 days to look at your water, latrine and handwashing facilities again and ask you again about your child's health. Each visit will be less than 1 hour.

Risks & Benefits

This study presents minimal risk to you and your child. Although we will try to protect your identity there is some possibility that confidentiality could be compromised. You will not directly benefit from participating in this study but this participation will enable us to gain knowledge regarding fecal contamination in association with diarrhea.

Privacy and confidentiality

We will do everything we can to keep what you tell us confidential as allowed by the law of this country. We will not use your real name when we write out the data. All the information we collect will be kept locked. We will use the information only for the purpose of the study. We will not use your name when we share and publish the results of this study. We expect the steps we take will keep all of your information confidential, but it is possible that because of mistakes or unforeseen events, it could become compromised.

Future use of information

If it is necessary, we may share the information we collected from this study with other researchers. If this is done, we will not use your real name and we will maintain your confidentiality.

Right not to participate and withdraw

Taking part in the study is completely voluntary. You may choose not to answer any or all of the questions that will ask. You can drop out of this study at any time, even in the middle of an interview.

You have the right to refuse to take part in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You do not need to pay us to take part in this study, and we will not pay you money for taking part in the study.

Persons to contact:

If you have any questions, you can ask me any time. If you have additional questions about the survey, you may contact: Sarker Masud Parvez phone: 01817541872, Center of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212.

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of this study, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to our proposal of enrolling your household in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Signature or left thumb impression of Participant

Date

Signature or left thumb impression of the witness

Date

Signature of the PI or his/her representative

Date

Appendix 1r: English consent form for structured observations with video recording

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Stephen P. Luby

Purpose of the research

Hello (Assalamualaikum/Namaste). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are doing research on diarrheal diseases in children. Through this research we want to learn how certain conditions in sanitation, water quality and hygiene practices impact health.

Why are we inviting you to participate in the study?

We are seeking households that are already taking part in other activities from this study. We would like to tell you more detail about this study and hope you and your child will volunteer to participate. You are living in a rural social and natural environment from where we would like to learn something more. Additionally, there was pregnant women and a young child in your household and we are interested to talk about their health.

What is expected from the participants of the research study?

If you agree to take part, I will find a place to sit in your home or courtyard so that I will not be in your way. I will observe activities in your home and the daily activities of your child and take some notes. I may look around the courtyard and may ask you some questions in the end. I will also take a video of you and your child during your daily activities. I will be here for a total of about five hours.

Risks & Benefits

There are no major risks involved in this study. There is no monetary compensation for taking part in this study.

Privacy, anonymity and confidentiality

We will do everything we can keep what you tell us confidential as allowed by the law of this country. We will not use your real name when we write out the data. All the information we collect will be kept locked. We will use the information only for the purpose of the study. We will not use your name when we share and publish the results of this study. We expect the steps we take will keep all of your information confidential, but it is possible that because of mistakes or unforeseen events, it could become compromised. Footage from the cameras will not be publicly shared, nor will participants be identifiable in any published works. The recorded footage will be stored securely until data analysis is complete, and will then be erased.

Future use of information

If it is necessary, we may share the information we collected from this study with other researchers. If this is done, we will not use your real name and we will maintain your confidentiality.

Right not to participate and withdraw

Taking part in the study is completely voluntary. You may choose not to answer any or all of the questions that will ask. You can drop out of this study at any time, even in the middle of an interview. You have the right to refuse to take part in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You do not need to pay us to take part in this study, and we will not pay you money for taking part in the study.

Persons to contact:

CPHS Protocol #2011-09-3652

If you have any questions, you can ask me any time. If you have additional questions about the survey, you may contact: Muhammad FaruqueHussain: phone: 01711437326 from the Water Sanitation and Hygiene Research Group, Centre for Communicable Diseases (CCD), icddr,b Mohakhali, Dhaka 1212.

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of this study, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to our proposal of enrolling your household in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Signature or left thumb impression of Participant

Date

Signature or left thumb impression of the witness

Date

Signature of the PI or his/her representative

Date

Separate consent to photography and video taping

During the study we would also like to take photographs and videos of you, your child, your family members and activities including your natural environment. These photographs and videos may be used, if necessary, in presentations or reports at scientific meetings or to the general public. Even if you do not permit us to take photographs or video tape you might be considered to take part in this study. We will not use any photographs, recordings, or other identifiable information about you in any future presentation without your consent

Please sign next to “YES” or “NO” if you agree with possibly having photos taken and shared. In any use of these records, your name will not be identified.

1. The records can be studied by the research team for use in the research project.

Photo _____ Audio _____ Video _____

2. The records can be used for scientific publications.

Photo _____ Audio _____ Video _____

3. The records can be shown at meetings of scientists interested in the study of _____.

Photo _____ Audio _____ Video _____

4. The records can be shown in classrooms to students.

Photo _____ Audio _____ Video _____

5. The records can be shown in public presentations to non-scientific groups.

Photo _____ Audio _____ Video _____

Appendix 1s: English consent form for in depth interview in relationship to environmental assessment

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Stephen P. Luby

Purpose of the research

Hello (Assalamualaikum/Namaste). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka located at Mohakhali. We are doing research on child health and diarrheal diseases. Through this research we want to learn how certain conditions in sanitation, water quality and hygiene practices impact health.

Why are we inviting you to participate in the study?

We are seeking households that are already taking part in other activities from this study. We would like to tell you more detail about this study and hope you and your child will volunteer to participate. You are living in a rural social and natural environment from where we would like to learn something more. Additionally, there is either a pregnant woman or a young child in your household and we are interested to talk about their health.

What is expected from the participants of the research study?

With your permission we would like to enroll your compound and household in this study. If you agree to take part in the study, I will request you to allocate me 60 to 90 minutes to talk about your water, sanitation and hygiene related facilities and activities in your compound and household. I will also ask about your child's health and development. With your permission we will audio and video record our conversation.

Risks & Benefits

This study presents minimal risk to you and your child. Although we will try to protect your identity there is some possibility that confidentiality could be compromised. There is no added benefit to you or your immediate family from participating in this interview or assessment.

Privacy and confidentiality

We will do everything we can to keep what you tell us confidential as allowed by the law of this country. We will not use your real name when we write out the data. All the information we collect will be kept locked. We will use the information only for the purpose of the study. We will not use your name when we share and publish the results of this study. We expect the steps we take will keep all of your information confidential, but it is possible that because of mistakes or unforeseen events, it could become compromised. The recorded data from the tape recorder will not be publicly shared, nor will participants be identifiable in any published works. The recorded data will be stored securely until data analysis is complete, and will then be erased.

Future use of information

If it is necessary, we may share the information we collected from this study with other researchers. If this is done, we will not use your real name and we will maintain your confidentiality.

Right not to participate and withdraw

Taking part in the study is completely voluntary. You may choose not to answer any or all of the questions that will ask. You can drop out of this study at any time, even in the middle of an interview. You have the right to refuse to take part in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You do not need to pay us to take part in this study, and we will not pay you money for taking part in the study.

Persons to contact:

If you have any questions, you can ask me any time. If you have additional questions about the survey, you may contact: Muhammad FaruqueHussain: phone: 01711437326 from the Water Sanitation and Hygiene Research Group, Centre for Communicable Diseases (CCD), icddr,b , Mohakhali, Dhaka 1212.

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of this study, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to our proposal of enrolling your household in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Signature or left thumb impression of Participant

Date

Signature or left thumb impression of the witness

Date

Signature of the PI or his/her representative

Date

Appendix 1t: English consent form for Focus Group Discussion (FGD)

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Stephen P. Luby

Purpose of the research

Hello (Assalamualaikum/Namaste). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are doing research on diarrheal diseases in children. Through this research we want to learn how certain conditions in sanitation, water quality and hygiene practices impact health.

Why are we inviting you to participate in the study?

We are seeking some participants who have been living within our study area and can provide us some valuable information about the local water, sanitation and hygiene practices. We know that you are undertaking a great responsibilities for your children, all other family members including maintaining the household environment. You are also living in a rural social and natural environment from where we would like to learn something more. We are interested to know some of rural water, sanitation and hygiene behaviour, particularly about our family members during every day life that may help us to understand how environmental contaminations may occur including fecal matters and draw a pathway map.

What is expected from the participants of the research study?

If you agree to take part in the discussion, I will let you know a common place and request you to present and meet with some other participants invited for discussion. I will talk about some water sanitation and hygiene activities and practices of household members in their daily activities including your child. We will take notes of our discussion and conversations. To make sure we captured well the important information and discussion points we will tape record. I would ask your permission to tape record the discussion session. We would request you to provide us 1 hour of your valuable time. One of our colleagues will assist us taking notes and tape record our conversation.

Risks & Benefits

This study presents minimal risk to you and your child. Although we will try to protect your identity there is some possibility that confidentiality could be compromised. You will not directly benefit from participating in this study but this participation will enable us to gain knowledge regarding fecal contamination in association with diarrhea.

Privacy and confidentiality

We will do everything we can keep what you tell us confidential as allowed by the law of this country. We will not use your real name when we write out the data. All the information we collect will be kept locked. We will use the information only for the purpose of the study. We will not use any of your name when we share and publish the results of this study. We expect the steps we take will keep all of your information confidential, but it is possible that because of mistakes or unforeseen events, it could become compromised. The tape recordings will not be publicly shared, nor will participants be identifiable in any published works. The recordings will be stored securely until data analysis is complete, and will then be erased.

Future use of information

If it is necessary, we may share the information we collected from this study with other researchers. If this is done, we will not use your real name and we will maintain your confidentiality.

Right not to participate and withdraw

Taking part in the study is completely voluntary. You may choose not to answer any or all of the questions that will ask. You can drop out of this study at any time, even in the middle of the discussion. You have the right to refuse to take part in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You do not need to pay us to take part in this study, and we will not pay you money for taking part in the study unless you have some local transportation cost to attend in the discussion and some refreshments.

Persons to contact:

If you have any questions, you can ask me any time even during the discussion. But if you ask any question now or before starting the discussion it would be helpful for us. If you have additional questions about the study or discussion, you may contact: Muhammad FaruqueHussain: phone: 01711437326 from the Water Sanitation and Hygiene Research Group, Centre for Communicable Diseases (CCD), icddr,b, Mohakhali, Dhaka 1212.

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of this study, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to our proposal of participation in the Focus Group Discussion, please indicate that by putting your signature or your left thumb impression at the specified space below.

Thank you for your cooperation

Signature or left thumb impression of Participant

Date

Signature or left thumb impression of the witness

Date

Signature of the PI or his/her representative

Date

Name of the moderator:

Name of the note taker:

Signature or left thumb impression of the witness

Date

Signature of the PI or his/her representative

Date

Appendix 1u: English consent form for longitudinal environmental assessment

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Leanne Unicomb

Purpose of the research

Hello (Assalamualaikum/Namaste). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are conducting a research on diarrheal diseases in children to learn how certain conditions in sanitation, water quality and hygiene practices impact health. This research is being conducted in collaboration with scientists at the University of California Berkeley in the United States.

Why are we inviting you to participate in the study?

We are seeking households that are already taking part in other activities from this existing study. We would like to tell you more detail about this study and hope you and your child will volunteer to participate in this study.

What is expected from the participants of the research study?

If you decide to take part in the study, we will visit your household now and we will continue to visit you once every three months over the next two years (for a total of eight visits). At each visit, we will collect some samples from your compound environment, including a water sample from your stored drinking water, and during two of these visits we will also collect some soil from the household entrance and a small amount of food that you feed to your young children. At each visit, we will also rinse your hands and your child's hands in clean water and collect the rinsed water. We will take all of these samples back to our field lab to analyse them for bacterial contamination. These samples will help us understand what makes your children become sick by conducting laboratory tests. We will also take a look at your compound with your permission to observe your water, latrine and handwashing facilities. We will also ask you about your children's health. Each visit will be less than 1 hour. Additionally, after 3 months from now, we will install a sensor device in your latrine, which does not capture any video or audio information. We will leave this device in your latrine for one week and then remove it. The sensors capture the timing of when someone enters or exits the latrine. We will do this in your household twice within 2 years.

Risks & Benefits

This study presents minimal risk to you and your child. There is a slight risk of breach of confidentiality, but we will do our best to minimize this risk. You will not directly benefit from participating in this study but this participation will enable us to gain knowledge regarding fecal contamination in association with diarrhea.

Confidentiality

All data and specimens collected will be kept confidential to the greatest extent possible. Researchers at ICDDR,B will have access to some of your personal information that could identify you, such as your name and your phone number. They will remove the identifiable information before sharing it with researchers at partner institutions, such as UC Berkeley. Your research records will be kept in a locked cabinet, and computer-based data, will be stored in an encrypted format on a password-protected server.

Other persons who may have access to your information include research groups that oversee the safety of the study including institutes such as the University of California Berkeley and the Bill and Melinda Gates Foundation, USA. None of the researchers outside of ICDDR,B will be able to identify you or your child from information you provide. We will use the information only for the purpose of the study. We will not use your name when we share and publish the results of this study. We expect the steps we take will keep all of your information confidential, but it is possible that because of mistakes or unforeseen events, it could become compromised.

Future use of information

If it is necessary, we may share the information we collected from this study with other researchers. If this is done, we will not use your real name and we will maintain your confidentiality. We will store the information we collect from you for a long time after the end of the study. Data resulting from research involving children will be stored for at least 7 years after the child reaches the age of 18 years.

Right not to participate and withdraw

Taking part in the study is completely voluntary. You have the right to decline to allow your child to participate or to withdraw your child at any point in this study without penalty or loss of benefits to which you are otherwise entitled. You may choose not to answer any or all of the questions that will ask. You can drop out of this study at any time, even in the middle of an interview. You have the right to refuse to take part in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You do not need to pay us to take part in this study, and we will not pay you money for taking part in the study.

Persons to contact:

If you have any questions, you can ask me any time. If you have additional questions about the survey, you may contact: Mahfuza Islam phone: +880-2-8819419-20, Ext: 118 , Center of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212.

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of this study, you may contact or meet IRB Secretariat, M.A. Salam Khan:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to participate in our study and to allow your child to participate in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Signature or left thumb impression of Participant

Date

Signature or left thumb impression of the witness

Date

Signature of the PI or his/her representative

Date

Appendix 1v: English consent form assessment of child's cognitive development

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child cognitive development in rural Bangladesh

Principal Investigator's name: Dr. Leanne Unicomb

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Purpose of the research

Hello/Assalamualaikum/Namaste. My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are conducting research on diarrheal diseases and through this particular study we want to learn about the health impact of diarrheal diseases in children. We are interested in learning if the exposure of a child to diarrheal disease has long term effects.

Why are we inviting you to participate in this study?

We are interested in enrolling your household because you have a child between the age of 8-15 months, and your household has already participated in other parts of this study. Diarrhea is common among children in this age group. We are interested to know how diarrhea affects child development outcomes, such as motor and language skills. Therefore, we hope you will allow your child to participate into this study upon learning more details of participation.

What is expected from the participants of the research study?

If you decide to participate, and let your child participate, all of our activities here today will take about one hour. We will ask you some general things about your household, such as things your child likes to play with. We will also ask you to complete three measures that are like games, where we ask you to do some things like remember numbers and words and repeat a story. We will ask you some questions about which words your child can understand and speak. We would also like to see what motor skills your child can do, such as sitting, standing and walking. For this motor skill activity, we will try to get your child to perform these various behaviors. This will take about 10-15 minutes to complete. Finally, we will ask you some questions about your well-being.

Risks & Benefits

There are no major risks involved in this study. Some of the interview questions may make you uncomfortable, but you are free to decline to answer any questions or stop the interview at any time.

Your child may get tired during the physical motor activity, although it is very brief. To put your child at ease, you and/or a caregiver may sit with them during any of the activities, and you are free to stop the assessments at any time.

There is no anticipated direct benefit to you or your child for participating in this study. However, it is hoped that the information gained from the study will help improve our knowledge of how diarrhea affects young children.

Privacy, anonymity and confidentiality

We will do everything we can keep what you tell us confidential as allowed by the law of this country. We will not use your real name or your child's name when we write out the data. All the information we collect will be kept locked. We will use the information only for the purpose of the study. We will not use your name or your child's name when we share and publish the results of this

study. We expect the steps we take will keep all of your information confidential, but it is possible that because of mistakes or unforeseen events, it could become compromised.

Future use of information

If it is necessary, we may share the information we collected from this study with other researchers. If this is done, we will not use your real name and we will maintain your confidentiality.

Right not to participate and withdraw

Taking part in the study is completely voluntary. You may choose not to answer any or all of the questions that will ask, and you can refuse for your child to participate in the motor skills activity. You can drop out of this study at any time, even in the middle of an interview. You have the right to refuse to take part in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You do not need to pay us to take part in this study, and we will not pay you money for taking part in the study.

Persons to contact:

If you have any question, you can ask me any time. If you have additional questions about these activities, you may contact:

Dr. Fahmida Tofail, Scientist, Child Development Unit (CDU), Dhaka Hospital, ICDDR, 68
Shaheed Tajuddin Ahmed Sarani, Mohakhali, Dhaka-1212, Bangladesh Phone no. +880 2 9840 523-32; Ext. 2350 Cell: +880 1715 700370

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of this study, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to our proposal of enrolling your household in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Signature or left thumb impression of Participant

Date

Signature or left thumb impression of the witness

Date

Signature of the PI or his/her representative

Date

Appendix 1w: English consent form for neighboring compounds in spillover study

International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B)

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Stephen Luby

Purpose of the research

Hello (Assalamualaikum/Nomoshkar). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are interested in conducting research on diarrheal diseases in children to learn how it affects their physical and mental development. Through this research we want to learn about the health benefits of some simple interventions to improve the sanitation, water quality, hygiene practices or nutritional status for children under five. We want to understand whether children who live in the same communities as children receiving these interventions benefit from them as well.

Why are we inviting you to participate in the study?

Because you live near to recipients of water, sanitation, and hygiene interventions, we are interested in evaluating your child's health, we would like to invite you to participate in this study.

What is expected from the participants of the research study?

If you agree to participate, a field research person will visit your household twice for this purpose. Participation in this study will only span a few hours. In the first visit, which we would like to do today, we will ask you questions about your home and compound, and some practices in your home. We will ask you questions about sociodemographic information, your water, sanitation, and hygiene practices and the health of your children under five years old. With your permission, they will inspect your sanitation facilities as well. We will also ask mothers or caregivers about whether your child has been sick.

We will also give your children one toy ball and set up fly traps in the latrine and kitchen areas of your compound. We will ask you to give us a glass of water that you would give to your children to drink. We will take a small amount of the water that you give us.

We will return tomorrow for a second visit, wash the balls in water, keep the water used to wash the toy. Your child may choose to play with the ball or not; this is up to him or her. During this second visit, we will count the flies caught at the fly trap in the latrine and kitchen areas of your compound. We will also ask you a few short questions. Each visit will be less than 1 hour.

We will also collect a stool sample from your children under five years old. We will examine whether your child has any worm infections, but this analysis will be done in Dhaka, and we will not be able to share the results with you. We will offer your child deworming medication regardless of the stool sample result. Today, a field member will deliver a stool collection kit and instruct you how to collect stool from your child. We will ask you to collect your child's stool before the field worker returns tomorrow by having your child defecate on a sheet of provided plastic and use a plastic scoop to collect a small amount of fresh stool from the top of the pile into a container. The field person will collect this container when they come to collect the other specimens.

Risks & Benefits

There are minimal risks involved in this study. There is a slight risk of breach of confidentiality. Your child's participation will help us to gain knowledge on diarrheal disease in children.

Privacy, anonymity and confidentiality

All data and specimens collected will be kept confidential to the greatest extent possible.. Researchers at ICDDR,B will have access to some of your personal information that could identify you, such as your name. They will remove the identifiable information before sharing it with researchers at partner institutions, such as UC Berkeley. Your research records will be kept in a locked cabinet, and computer-based data, will be stored in an encrypted format on a password-protected server.

Other persons who may have access to your information include research groups that oversee the safety of the study including institutes such as the University of California Berkeley and the Bill and Melinda Gates Foundation, USA. None of the researchers outside of ICDDR,B will be able to identify you or your child from information you provide. We will use the information only for the purpose of the study. We will not use your name when we share and publish the results of this study. We expect the steps we take will keep all of your information confidential, but it is possible that because of mistakes or unforeseen events, it could become compromised.

Future use of information

The information collected from this study may be shared with other researchers if needed, but we will strictly maintain your confidentiality and privacy. In the future, we may wish to perform additional tests on the blood and stool specimens that already collected. The samples will be stored at ICDDR,B. No further consent will be taken from you. If you change your mind about having your specimen saved for further testing, you may contact us and the sample will be discarded and not saved.

Right not to participate and withdraw

Taking part in the study is completely voluntary. You have the right to decline to allow your child to participate or to withdraw your child at any point in this study without penalty or loss of benefits to which you are otherwise entitled. The members of the households may choose not to answer any or all of the questions asked. You can drop out of this study at any time, even in the middle of an interview or sample collection. If you wish, we will withdraw your permission and we will destroy your samples and those of your child and remove data from the database. You have the right to refuse participation in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You need not pay us to take part in this study, and similarly we will not pay you money for attending in the study.

Persons to contact:

If you have any question, you can ask me any time. If you have additional questions about the survey, you may contact:

Abu Naser, Center of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212. Phone: 8860523-32 # 120

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of the survey, you may contact or meet him personally at following address:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to our proposal of enrolling your household in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

Thank you for your cooperation

Consent to enroll into the study: YES_____ NO_____

Consent of the mother for sample collection: YES_____ NO

Signature or left thumb impression of Participant

Date

Signature or left thumb impression of the witness

Date

Signature of the PI or his/her representative

Date

Appendix 1z: English consent for microbiome substudy

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Leanne Unicomb

Purpose of the research

Hello/Assalamualaikum/Namaste. My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are conducting research on diarrheal diseases and through this particular study we want to learn about the health impact of diarrheal diseases in children. Malnutrition in children is associated with infections of our intestines that can change our use of nutrients. It is possible that genes in our body, made up of DNA, make some children more susceptible to malnutrition than others. This DNA is inherited from our parents and we also carry genes from many friendly microbes that live on and in our body. We are interested in learning if the exposure of a child to diarrheal disease has long term effects.

Why are we inviting you to participate in the study?

We are interested in enrolling this compound because we collected information on your household earlier and we are interested in conducting additional testing to evaluate your child's digestive tract.

What is expected from the participants of the research study?

Participation in this study will only take 15 minutes each month. To achieve the aim of this study, we will collect a stool sample from your child once a month for the next 10 months. The samples will help us understand whether your child has been exposed to infections and will also help us understand the friendly microbes that live in your child's digestive tract.

If you agree to participate, a field research person will visit your household twice per month for the next 10 months for this purpose. On the first day, a field member will deliver a stool collection kit and instruct you how to collect stool from your child. You will be instructed to collect your child's stool on the following morning, if the child defecates before the field member's arrival, by having your child defecate on a sheet of provided plastic and you will use a plastic scoop to collect a small amount of fresh stool from the top of the pile into a container. The field person will collect this container. We will examine whether your child has infections or determine which friendly microbes live in your child's digestive tract through different laboratory test, but we will not be able to share the results with you.

Risks & Benefits

Although we will try to protect your identity there is some possibility that confidentiality could be compromised. There is no direct benefit from participating in this study, but your child's participation will help us to gain knowledge on diarrheal disease and friendly microbes in children.

Confidentiality

All data and specimens collected will be kept confidential as allowed by the law of this country.

Confidentiality of the data and test results will be strictly maintained. We will use the information only for the purpose of the study, and we will not use you or your child's name in sharing and publishing the results of this study.

Future use of information

The stool samples may be stored until the end of the study, so they can be analyzed in the lab. If you agree, the information, along with some of the stool collected will be stored at ICDDR,B for up to 20 years so that we can conduct advanced tests on these samples to understand the infections that you may have had. No further consent will be taken from you, and you will not receive the results of these tests. A senior scientist at ICDDR,B will decide who can use the stored samples, and what tests will be done. If you change your mind about having your specimen saved for further testing, you may contact us and the sample will be discarded and not saved.

Right not to participate and withdraw

Taking part in the study is completely voluntary. You may choose not to allow your child to participate in this study. You can drop out of this study at any time, even in the middle of the sample collection. You have the right to refuse participation in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You need not pay us to take part in this study, and similarly we will not pay you money for attending in the study.

Persons to contact:

If you have any questions, you can ask me any time. If you have additional questions about the survey, you may contact:

Masud Parvez: phone: 01817541872, Center of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212.

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of the survey, you may contact or meet IRB Secretariat, M.A. Salam Khan:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to our proposal of enrolling your household in our study, please indicate that by putting your signature or your left thumb impression at the specified space below

I agree to have my child's stool samples to be stored long term []

Thank you for your cooperation

_____	_____
Signature or left thumb impression of Guardian	Date
_____	_____
Signature or left thumb impression of the witness	Date
_____	_____
Signature of the PI or his/her representative	Date

Appendix 1aa: English consent form for in-depth interviews about spillovers

International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B)

Protocol Title: Effect of hand washing, water treatment, sanitation and nutritional supplement interventions on child health and development in rural Bangladesh

Principal Investigator's name: Dr. Leanne Unicomb
Spillover substudy

Purpose of the research

Hello (Assalamualaikum/Nomoshkar). My name is _____ and I work with the ICDDR,B (Cholera Hospital) in Dhaka. We are interested in conducting research on diarrheal diseases in children to learn how it affects their physical and mental development. Through this research we want to learn about the health benefits of some simple interventions to improve the sanitation, water quality, hygiene practices or nutritional status for children under five. We want to understand whether children who live in the same communities as children receiving these interventions benefit from them as well. This research is being done in collaboration with scientists at the University of California, Berkeley in the United States.

Why are we inviting you to participate in the study?

Because you are participating in research with ICDDR,B (Cholera Hospital) or because you live near participants in this research, we are interested in asking you some questions about who you know in this village and where you get information about health.

What is expected from the participants of the research study?

If you decide to enroll in this study, we will ask you a series of questions about who you know in this village and where you get information about health. It is very difficult to write all the conversation in a note pad, so, if you agree, we would like to record this sessions in a tape recorder. We would also like to take some notes from this session. This session will last about an hour.

Risks & Benefits

There are minimal risks involved in this study. There is a slight risk of breach of confidentiality. Your participation will help us to gain knowledge on diarrheal disease in children. There is no anticipated direct benefit to you for participating in this study. However, it is hoped that the information gained from the study will help improve our knowledge of how diarrhea affects young children.

Confidentiality

All data and specimens collected will be kept confidential to the greatest extent possible. Researchers at ICDDR,B will have access to some of your personal information that could identify you, such as your name. They will remove the identifiable information before sharing it

with researchers at partner institutions, such as UC Berkeley. Your responses and audio recordings will be kept in a locked cabinet, and computer-based data, will be stored in an encrypted format on a password-protected server.

Other persons who may have access to your responses and audio recordings include research groups that oversee the safety of the study including institutes such as the University of California Berkeley and the Bill and Melinda Gates Foundation, USA. None of the researchers outside of ICDDR,B will be able to identify you or your compound members from information you provide. We will use the information only for the purpose of the study. We will not use your name when we share and publish the results of this study. We expect the steps we take will keep all of your information confidential, but it is possible that because of mistakes or unforeseen events, it could become compromised.

Future use of information

The information collected from this study may be shared with other researchers if needed, but we will strictly maintain your confidentiality and privacy. We will store the information we collect for a long time after the end of the study.

Right not to participate and withdraw

Taking part in the study is completely voluntary. You can drop out of this study at any time, even in the middle of an interview, without penalty or loss of benefits to which you are otherwise entitled. If you wish, we will withdraw your permission and remove your data from the database. You have the right to refuse participation in this study, which will not affect your family's treatment at the Cholera Hospital in the future.

Principle of compensation

You need not pay us to take part in this study, and similarly we will not pay you money for attending in the study.

Persons to contact:

If you have any question, you can ask me any time. If you have additional questions about the survey, you may contact:

Masud Parvez: phone: 01817541872, Center of Communicable Diseases, ICDDR,B, Mohakhali, Dhaka 1212.

If you have questions about your rights as a participant of a research study, or if you think some harm has been done to you because of the survey, you may contact or meet M.A. Salam Khan, IRB Secretariat:

M. A. Salam Khan, IRB Secretariat, phone: 9886498 or PABX 8860523-32 ext. 3206

If you agree to participate in our study, please indicate that by putting your signature or your left thumb impression at the specified space below.

Thank you for your cooperation

Signature or left thumb impression of Participant

Date

Signature or left thumb impression of the witness

Date

Signature of the PI or his/her representative

Date