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The impact of clean water supply by drilling boreholes on the diarrhoeal reduction of under-five children in Ghana

Submission date	Recruitment status	[_] Prospectively registered
21/02/2015	No longer recruiting	[_] Protocol
Registration date	**Overall study status**	[_] Statistical analysis plan
13/03/2015	Completed	[X] Results
Last Edited	**Condition category**	[_] Individual participant data
24/07/2020	Digestive System	

Plain English summary of protocol

Background and study aims
Globally, about 88% of cases of diarrheal disease is due to an unsafe water supply and lack of sufficient sanitation and hygiene. Although a number of studies have been conducted to explore the effect of water quality treatments, the majority of them were based on inadequately randomized trials, used excessive recall period or trials were not blinded. In addition, there has been debate over the difference in the effect of household-based water treatment and improved water supply or source-based water between enthusiasts and sceptics of point-of-use treatment. This study aims to investigate the effect of an improved source-based water supply on the number of children under 5 suffering from diarrheal disease, employing rigorous methodology to overcome limitations previous studies encountered. We also aim ensure key findings are used as a basis for a better approach to providing good quality water.

Who can participate?
Households with children under 5 years of age living in communities located in Krachi East and West district (Ghana).

What does the study involve?
Communities taking place in the study are randomly allocated into one of two groups, an intervention group and a control group. Water boreholes are drilled in all communities but only those allocated to the intervention group are used for the duration of the study. Assessments include cases of diarrhoea in children under five, amount of safe drinking water, whether there is an increase in awareness and practice of handwashing and how long it takes to fetch water on a daily basis.

What are the possible benefits and risks of participating?
We expect that the people living in communities in the intervention group to be less likely to contract diarrhoea, benefiting from clean water supply. Risks are not expected.

Where is the study run from?
Communities in the Krachi West and Krachi East districts, Volta Region (Ghana)

When is the study starting and how long is it expected to run for?
January 2012 to March 2015

Who is funding the study?
Korea International Cooperation Agency

Who is the main contact?
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Contact information

Type(s)
Public

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Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers
N/A

Study information

Scientific Title
Effect of clean water supply by drilling boreholes on diarrhoea incidence of under-five children in Krachi East and Krachi West districts, Volta region, Ghana using cluster randomized controlled trial

Study objectives
Supplying safe water will reduce the diarrhoeal incidence of children under five children in Krachi West and Krachi East district, Volta Region, Ghana

Ethics approval required

Old ethics approval format

Ethics approval(s)
Ghana Health Service Ethical Review Committee, 21/03/2014, ref: GHS-ERC: 07/01/14

Study design
Phased-in design

Primary study design
Interventional

Secondary study design
Cluster randomised trial

Study setting(s)
Community

Study type(s)
Prevention

Participant information sheet

Health condition(s) or problem(s) studied
Diarrhoeal incidence of children under five.

Interventions
For intervention communities, boreholes were drilled and for control group, boreholes were also drilled but were utilized after conducting survey.

Intervention Type
Behavioural

Primary outcome measure
Diarrhoeal prevalence of children under five (in the previous two weeks)

Secondary outcome measures
1. Quantity of safe water drinking
2. Time for fetching water per day
3. Knowledge, attitude, practice of handwashing at critical times

Overall study start date
01/01/2012

Completion date
31/03/2015

Eligibility

Key inclusion criteria

1. Household with children under 5 years of age
2. Mothers or caretakers agreeing on the participation of the survey with informed consent in written form.

Participant type(s)
Other

Age group
Child

Upper age limit
5 Years

Sex
Both

Target number of participants
600

Total final enrolment
607

Key exclusion criteria
Children whose mothers or caretakers did not agree to register, by not signing a informed consent form

Date of first enrolment
03/10/2012

Date of final enrolment
05/02/2014

Locations

Countries of recruitment
Ghana

Gibraltar

Greece

Greenland

Korea, South

Study participating centre
Korea International Cooperation Agency (KOICA)
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Study participating centre
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Sponsor information

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Sponsor type
Government

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www.koica.go.kr

ROR
https://ror.org/0106d7657

Funder(s)

Funder type
Government

Funder Name

Korea International Cooperation Agency

Alternative Name(s)
KOICA

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
Korea, South

Results and Publications

Publication and dissemination plan

Intention to publish date

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Other

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	25/09/2015	24/07/2020	Yes	No