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The impact of wash text messages and environmental cues intervention on hand hygiene practice among healthcare workers in the greater Kampala metropolitan area, Uganda

Submission date 18/11/2020	**Recruitment status** No longer recruiting	[X] Prospectively registered [X] Protocol [_] Statistical analysis plan [_] Results [_] Individual participant data [_] Record updated in last year
Registration date 23/11/2020	**Overall study status** Completed	
Last Edited 06/09/2024	**Condition category** Other	

Plain English summary of protocol

Background and study aims
Hand hygiene in healthcare facilities is very important in reducing the spread of hospital-acquired infections such as sepsis and COVID-19. Hand hygiene entails the use of soap and water or an alcohol-based hand rub to eliminate pathogens. The World Health Organization recommends that all healthcare workers need to wash their hands while in healthcare settings during critical moments such as before and after handling a patient, after touching a patient's surrounding, before and after any procedure. Compliance with these critical moments of hand hygiene is critical in averting hospital-acquired infections, however, this has not been the case in many healthcare settings in low-income settings, largely due to a lack of efficacious behavioral interventions. This interventional study will test the use of water, sanitation and hygiene (WASH) messages and nudges to improve hand hygiene among health workers in the greater Kampala metropolitan region.

Who can participate?
Full-time staff in the selected healthcare facilities, who have worked there for at least 6 months.

What does the study involve?
In this study, some health workers will receive simple hand hygiene facilities such as tapped plastic jerricans with a stand and basin while others will receive WASH text messages, nudges in addition to the simple hand washing facilities.

What are the possible benefits and risks of participating?
Health workers participating in this study will have an opportunity for their ideas being shared with policy makers and program implementers to influence and contribute to the promotion of hand hygiene practice in healthcare facilities. The risks involved by participating in this study are minimal. However, their views may become known to other people who have not participated in

the interviews. We will minimize this by ensuring that only the individual directly responsible for this study will have access to the interviews. Only authorized project personnel (approved by the study Principal Investigator) will have access to this information.

Where is the study run from?
1. Makerere University School of Public Health, Kampala (Uganda)
2. Emory University (USA)

When is the study starting and how long is it expected to run for?
January 2020 to September 2021.

Who is funding the study?
National Academies of Science (USA)

Who is the main contact?
Dr Richard K. Mugambe, rmugambe@musph.ac.ug

Contact information

Type(s)
Scientific

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Additional identifiers

Clinical Trials Information System (CTIS)
Nil known

ClinicalTrials.gov (NCT)
Nil known

Protocol serial number
8-187

Study information

Scientific Title
The impact of a mhealth and environmental cues intervention on hand hygiene practice among healthcare workers in the greater Kampala metropolitan area. A cluster randomised trial

Acronym
PEER MHEALTH STUDY

Study objectives
Mobile phone WASH text messages and environmental cues improve hand hygiene compliance among healthcare workers (HCWs)

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 15/04/2020, Makerere University School of Public Health Higher Degrees, Research and Ethics Committee (MakSPH-HDREC) (New Mulago Hospital Complex, New Mulago Hill Road, Kampala, Uganda; +256-393 291 397; hdrecadmin@musph.ac.ug), ref: Protocol 775

Study design
Cluster randomized trial

Primary study design
Interventional

Study type(s)
Prevention

Health condition(s) or problem(s) studied
Compliance with hand hygiene among healthcare workers

Interventions
In both the intervention and control HCFs, simple hand washing facilities (HWF) (tapped plastic jerricans with a stand and basin) will be provided (where needed) in delivery rooms, post-natal wards, and children's ward. Soap for hand washing as well as alcohol hand rub will be provided at the hand hygiene stations. Hand hygiene demonstrations using the "glo germ" gel will be done in both study arms at the beginning of the study.

In the intervention HCFs, besides the provisions in the control group, two interventions, mhealth and environmental cues (nudges) will be provided. The choice of the specific mhealth and nudges intervention, and the frequency of exposure to mhealth messages among the study participants will be determined in the insight workshop. The mhealth intervention messages will be designed with a focus on: information on the benefits of hand hygiene; when to do hand hygiene; how to do hand hygiene and how to protect others. However, the messages will also have educational jokes and response prompts where HCWs with the highest number of responses will win hand hygiene supplies. The educational messages and jokes in the mhealth intervention will be guided by the results from the formative study. The mhealth messages will be sent to study participants using either short message service (sms) or whataspp, depending on the decision of the stakeholders in the stakeholders' workshop.

Randomisation:
Selected healthcare facilities will be randomly assigned to the intervention and control arms. Randomization will be stratified at level III and IV HCF. All HCWs from the same HCF will be allocated to the same group as the randomized HCF in which they are working. HCWs will be masked off the intervention they are receiving.

Intervention Type
Behavioural

Primary outcome(s)
1. Proportion of used Hand hygiene (HH) opportunities (number of times HH is observed to be done at critical times out of the total number of observed HH opportunities.
Hand hygiene observations will be conducted during the baseline, midline and end-line surveys. The hand hygiene observations will be done in the mornings (8 am – 12 pm) and evenings (4 pm – 8 pm) since these are considered to be peak treatment hours (Fries, Segre et al. 2012). Within the targeted time, 15 hand hygiene opportunities will be observed for each of the selected HCWs (corresponding to 3 patients each with 5 hand hygiene opportunities), and the used and missed opportunities will be recorded. Observations will be conducted by experienced researchers (HCWs or environmental health officers) who will observe from the least obtrusive point within a radius of 10 meters of the patient wards.

Key secondary outcome(s))
1. E. coli levels in hand rinsates from HCWs that indicate recent fecal contamination and HH failure collected immediately after the hand hygiene observations during baseline and end-line. The samples (hand rinsates) will be collected by a team of trained environmental health officers. During sampling of hand rinsates, HCWs will put their hands, one at a time in Whirl-Pak bags containing distilled water. The HCWs will wash their hands by rubbing the inner hands for about 2 minutes and the enumerator massaging their hands from outside the whirl pak bag to remove any potential pathogens. Aseptic techniques will be used to collect duplicate samples from each of the study participants (HCWs) during baseline, midline and end-line. The samples will be stored in sterile plastic bottles and transported on ice to the laboratory for further analysis within 4 hours. Hand rinsates will be diluted using the ratios of 1:1, 1:10 and 1:100. The membrane filtration method (with Chromocult agar) will be used to concentrate samples, and incubation will be done at 37°C for 24 hours. Colonies of E.coli will be identified by their dark blue to violet colour, and they will be counted and recorded per 100ml of sample.

Completion date
30/09/2021

Eligibility

Key inclusion criteria
1. Full-time staff in the selected healthcare facility. This will be based on appointment letters wherever possible
2. Worked in the selected healthcare facility for at least 6 months prior to the study

Participant type(s)
Health professional

Healthy volunteers allowed

No

Age group
Adult

Sex
All

Key exclusion criteria
1. All healthcare workers in maternal and children's wards of selected healthcare, who will be on leave at the time of the baseline
2. All healthcare workers in maternal and children's wards of selected healthcare, who will be so sick at the time of the baseline

Date of first enrolment
01/02/2021

Date of final enrolment
31/03/2021

Locations

Countries of recruitment
Uganda

Study participating centre
Makerere University School of Public Health
New Mulago Hospital Complex
P.o Box 7072
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Sponsor information

Organisation
National Academy of Sciences

ROR
https://ror.org/038mfx688

Funder(s)

Funder type
Government

Funder Name
National Academy of Sciences

Alternative Name(s)
U.S. National Academy of Sciences, NatlAcad of Sciences, United States, National Academy of Sciences, The National Academy of Sciences, The U.S. National Academy of Sciences, Institute of Medicine, NAS

Funding Body Type
Government organisation

Funding Body Subtype
Universities (academic only)

Location
United States of America

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Protocol article		26/01/2021	29/11/2022	Yes	No
Other publications	Formative qualitative study	05/09/2024	06/09/2024	Yes	No
Participant information sheet			17/01/2024	No	Yes
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes