RESEARCH PROPOSAL EXAMPLE

Problem Statement:
Hygiene is essential to the public health mission of reducing the transmission and consequences of disease. The two leading causes of childhood mortality worldwide are diarrheal disease and acute respiratory infections (Black et al. 2003). In addition, chronic parasitic infections and diarrhea can lead to anemia, which further hinders children’s development (Curtis and Cairncross 2003). Medical evidence suggests that the hands are the main transmitters of diarrhea and respiratory infections. As such, they constitute disease vectors carrying respiratory microorganisms and fecal material into the domestic environment of the susceptible child (Hendley et al. 1973, WHO 2003). Health experts recommend handwashing with soap as a critical action in protecting public health because it is a mainstay in infection control (Luby et al. 2005). Yet, rates of handwashing with soap at critical times remain low throughout the world, even when both soap and water are available (Scott et al. 2003).

Contribution to Learning:
Previous studies in the literature of handwashing promotion campaigns typically find that handwashing does reduce diarrhea in children under five years old, but those campaigns usually require intensive and controlled interventions. In a review of 14 randomized trials Ejemot (2009) concludes that handwashing programs resulted in a 39 percent reduction in diarrhea episodes in children residing in institutions in high-income countries and a 32 percent reduction in such episodes in children living in communities in low- or middle-income countries. Luby et al. (2001) also show that handwashing with soap reduces the incidence of acute respiratory tract infections, as well diarrhea, as a result of implementing an intensive and small-scale community-level intervention. However, these studies focused on interventions that impose controlled conditions in small populations over short time periods. Thus, although intensive handwashing interventions have proven effective in reducing diarrhea and acute lower respiratory infections (ALRI), it has not been proven that similar results could be obtained if those interventions were implemented at scale. This research, however, aims to study the effectiveness of a national handwashing campaign to learn the impacts of large-scale handwashing interventions in a real-world context on a wide range of health indicators.

Description of Program:
In response to the preventable threats posed by poor sanitation and hygiene, the NGO Water Now is launching a large-scale handwashing project to improve child health and welfare outcomes of rural households in Uganda. The Wash Your Hands Uganda Project borrows from commercial and social marketing to promote better hygiene. The intervention has two different components: i) a mass media communications campaign; and ii) a community and school intervention.

The mass media campaign will be implemented at the provincial level. The campaign will emphasize the importance of the availability and use of soap for handwashing, and the need to wash hands with soap before cooking/eating and after fecal contact (going to bathroom, changing diapers). The main communication channel is broadcast radio, print materials, and promotional events such as street parades, games, and local theater performances.

The community intervention is conducted at the district level, and includes, in addition to the mass-media campaign, handwashing education sessions with groups of mothers, caregivers, and children, during which community agents will demonstrate how to properly wash hands with soap, explain the critical junctures in which we must wash hands with soap, and provide information on its impacts on children’s health. Additionally, handwashing behavior will be introduced as part of the school curricula, designating a place in the classroom for soap and will perform regular handwashing practices in groups each day. This study aims to assess the impact of both treatments independently.

Target Population:
The project’s primary target audience consists of mothers of reproductive age (15 to 49 years), caregivers of children under five, and children up to 12 years old. Children under five are the most susceptible to serious consequences from diarrhea and respiratory infection. Thus, the project’s objective is to improve handwashing behavior among the target audience to better the health of children under five.

**Evaluation Design:**

**Research Questions**
The objective of this study is to assess the impact of the Wash Your Hands Project on handwashing knowledge and believes, and accessibility to soap; on handwashing behavior; and on children’s health and nutrition?

**Identification Strategy**
To assess the causal impact of each of the project components we will conduct a controlled randomized trial comprising of the two components: mass media campaign (T1) and community and school intervention (T2). The study areas will be districts with populations ranging from 1,500 to 100,000 inhabitants. From the universe of Ugandan provinces, 80 provinces will be randomly selected, with 40 assigned to a first group and 40 to a second. From the first group of 40 provinces, 40 districts will be randomly assigned to receive the mass media province-level treatment (T1). From the second group of provinces, 80 districts will be randomly selected, with 40 randomly assigned to receive the district-level community treatment (T2) and the other 40 randomly assigned to serve as control group (C).

**Data and Outcomes of Interest**
Two rounds of surveys—baseline and endline—will be conducted to collect data on intermediate and final outcomes, which include: effectiveness of handwashing campaigns; determinants for handwashing behavior; handwashing behavior environmental and water contamination; diarrhea and ALRI; anemia; parasites infestations; and malnutrition.

**Power calculations**
Using latest DHS data for Uganda, power calculations estimated that around 750 households with children under two years old per treatment arm would be necessary to capture a 15 percent decrease in diarrhea incidence. These estimates are based on the collection of 2 data points. An additional 20 percent will be added to the sample size to address attrition, thus the total sample size will be 2,700 households.

**Policy Translation:**
Previous studies of randomized handwashing interventions focus on intensive and controlled experiments, showing they are effective in reducing diarrhea and ALRI. Despite these results, handwashing with soap at critical junctures in continues to be low. This study will be the first to examine a large-scale intervention under real-world conditions. If the intervention is proven effective, handwashing campaigns could become a low-cost, preventive measure to improve child health in countries with a high incidence of diarrhea. This could have large policy implications for developing countries. The study will also be the first to assess all components of the causal chain, thus potentially identifying which components are more effective in changing behavior and improving children’s health.

**Other Funding Sources:**
The project implementation is fully funded by the NGO Water Now. The research study has currently no other sources of funding. If we are awarded the research grant, the funds would be allocated to conduct the baseline survey, and additional sources of funding would be explored for the follow-up survey.
References:


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1 This example was prepared by Alexandra Orsola-Vidal, using the evaluation of a large-scale handwashing intervention in Peru. The project was implemented by the Water and Sanitation Program of the World Bank, together with the government of Peru. The evaluation was conducted by Professor Sebastian Galiani, Professor and CEGA’s Scientific Director Paul Gertler, and CEGA’s Global Networks Director Alexandra Orsola-Vidal. For more details please see:
