Frontline health workers enabled to produce alcohol based hand rub sanitizer in Uganda.

Unlike mobile telephone technologies and social media innovations, which come at a high cost to the user, yet enjoy smooth penetration and acceptance in most parts of developing countries, there are simple interventions like hand washing, whose innovations struggle to hit the mark in the same space. This is despite significant investment in international and local solutions. We ask ourselves why some interventions work and others do not?

The executive director at the Infectious Diseases Institute (IDI), **Dr Andrew Kambugu** once told a team of high-end technology innovators a true and compelling story about hand hygiene centred on a young boy in West Africa. The story, told in September 2019, goes thus; in 2014, a boy in West Africa spent his early afternoon playing in his neighbourhood with a bat he had netted, before returning home for lunch and a nap thereafter. The next day, the boy fell very ill. The parents bought medicine from a drug shop to treat him, but he succumbed to death in less than a week. In the following weeks, the boy's parents, grandmother and playmate died too. When the community leaders flagged the authorities about a strange death, the higher authorities established that the dreaded killer was Ebola. That was one of the stories that formed the beginning of the multi-country outbreak in 2014. Over 11,000 people died and 28,000 escaped death by a sliver, having been infected with Ebola. Had the boy's parents understood the power of the often undermined role of hand hygiene, probably the boy would be a living naturalist today. This story sparked debate among Dr Kambugu's audience, revolving around inaccessibility of soap and water and well as alcohol-based hand sanitizers (ABHS).

One health worker in the audience, arguing that hand hygiene with soap and water was not always convenient, pointing out that, 'If you feel like you don't want to wash your hands to touch a patient and don't want to wash hands, you can always put on gloves'.

Another one said, 'I think holding all the factors constant, gloves would be the ideal protection for infection control for both the patient and the one attending to the patient so that you are not infecting yourself, but there comes the question of costs. If supply is guaranteed, of course, gloves would be the best'.

Yet another, a community outreach health worker pointed out that, 'Handwashing was difficult to promote at the community level because it is hard to associate an invisible germ in hands with visible infectious disease'

The executive director further explained that in response to similar barriers to hand hygiene practices, IDI and the Centre for Disease Control's Water Hygiene and Sanitation (WASH) department, as well as the International Water and Sanitation Centre (IRC) project, have jointly innovated a locally feasible approach, of producing ABHS at the health facility level piloted it in one district. This innovation cuts down on wastage of gloves and boosts hand hygiene practices at the health facility level. The 2018 Ebola outbreak in DRC instigated expansion of the intervention to another high risk district in Western Uganda.

A few months after the ED's speech, December 2019, a novel airborne acute respiratory system virus - SARS-CoV-2 commonly known as COVID-19 was brewing in China. It became a fully-fledged pandemic in March this year. Infection prevention control measures for this viral infection have been social distancing, hand hygiene and avoiding face touching. In response to this, IDI set up its 3rd production unit to further support hand hygiene compliance among front line health workers.

Objectives of producing sanitizer

1. To locally produce quality-controlled hand sanitizer for healthcare facilities in Kasese and Kabarole districts

- 2. To improve hand hygiene practices among healthcare workers
- 3. To ensure the sustainability of the intervention through training of local producers and eventually

Early Successes

DIY – Do it yourself mindset: IDI mentored district staff to produce ABHS themselves, besides quantifying ABHS ingredients and placing orders through the National Medical Stores.

Technical Training: As part of Uganda's preparedness to contain especially dangerous pathogens (EDPs) outbreaks like Ebola virus disease (EVD). IDI supported the Ministry of Health to train public health facility laboratory health workers on highly infectious pathogen sample collection and triple packaging.

Capacity building for district led ABHS production : Two laboratory technicians one from each district were trained to spearhead ABHS production.

Continuous Quality Improvement: The district's focal person for infection, prevention and control (IPC) was also capacitated with supervisory skills, ABHS quality control and logistics supply management.

District Leadership support: District leaderships assigned health workers at the rank of health assistant, to support in the distribution of ABHS to health facilities **Hand Hygiene Champions:** Each health facility designated a champion to spearhead and promote IPC measures, ABHS placement refills within the facility, as well as monitoring and reporting on ABHS utilization behaviour.











ABHS packaging



Infectious Diseases Institute

College of Health Sciences, Makerere University

Investing in the Future: Impacting Real Lives



MAKERERE UNIVERSITY