# Improving Hand Hygiene through Accessibility in an LMIC Neurosurgical Ward

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# **PROJECT OBJECTIVES**

By assessing the relative usage of wall, bedside, and mobile pumps, we hope to improve accessibility and visibility, ultimately generating an efficient, sustainable, long-term protocol for hand hygiene practices in a low-tomiddle income country (LMIC) health care facility.

## **METHODOLOGY**

IMPLEMENTATION of hand sanitizer devices in the neurosurgery ward at MNRH:

- **11 wall pumps** with signage o by patient beds, at points of transition
- 20 bed pumps o at foot of patient beds
- 24 mobile pumps o distributed to medical staff

## DATA COLLECTION

- Daily mass of gel used per pump
- **Observational data** detailing...
- o staff/non-staff -patient interactions
  - *positive* (i.e., successful use of the gel after patient interaction)
  - *negative* (i.e., failure to use gel after patient interaction)
- o source of gel (wall, bed, or mobile pump)
- Staff interviews and feedback surveys

## REFERENCES

1. Fuller, A. T., Haglund, M. M., Lim, S., Mukasa, J., Muhumuza, M., Kiryabwire, J., ... & Smith, E. R. (2016). Pediatric Neurosurgery Health System Intervention at Mulago National Referral Hospital in Uganda. World Neurosurgery, 95, 309-314. 2. Haglund, M. M., Kiryabwire, J., Parker, S., Zomorodi, A., MacLeod, D., Schroeder, R.,... & Merson, M. (2011). Surgical capacity building in Uganda through twinning, technology, and training camps. World journal of surgery, 35(6), 1175-1182.

# **PROJECT BACKGROUND & SUMMARY**

Despite improved neurosurgical techniques in the neurosurgery ward at Mulago National Referral Hospital (MNRH) in Kampala, Uganda, high infection rates perpetuated disproportionately-poor outcomes.<sup>1, 2</sup>

THE INTERVENTION: TWO PHASES

• PHASE 1 RESULTS (Summer 2016):

- providers
- o Visibility was more effective than staff education in improving usage
- PHASE 2: THE FOLLOW-UP STUDY (Summer 2017)





BASS CONNECTIONS DUKE GLOBAL HEALTH



o Patients' family members interacted with patients three times more than

o Address gaps in usage seen in our previous study (i.e. hard-to-reach areas)

Ward Map: Visualizing Hand Sanitization Access Spatially



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### **Mulago National Referral Hospital**





## OUTCOMES

PRELIMINARY FINDINGS

- Bed and wall pumps highly used; mobile pumps were ineffective
- Staff and non-staff interacted equally, but staff hand hygiene compliance (49.5%) was greater than non-staff (17.9%) compliance
- o Although staff compliance is higher than non-staff, this level is still too low
- Interviewed staff were aware of the hand hygiene protocol (6/6 nurses) but cited the lack of a water source as a barrier to compliance (5/6 nurses)

A STEP TOWARD SUSTAINABILITY: SARAYA

- Partnership between DGNN and Saraya, a local hand sanitizer producer
- Secured one full year of solution and refill services