



Sequential low cost interventions double hand hygiene rates among medical teams in a resource limited setting. Results of a hand hygiene quality improvement project conducted at University Teaching Hospital of Kigali (CHUK), Rwanda.

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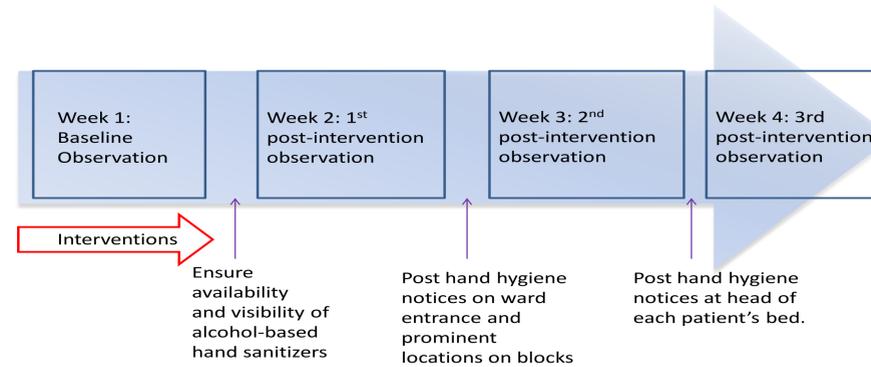
❖ Background

Adherence to recommended hand hygiene practices is known to be poor among healthcare workers (HCWs) in general, and physicians in particular, in developed and developing countries alike (WHO, 2009). There is limited data from resource limited settings especially sub-Saharan Africa, not only on the utility, but the impact of strategies known to improve hand hygiene such as implementing system change and reminder tools. We studied the impact of sequential multimodal low-cost strategies on hand hygiene practices among medical teams in Kigali, Rwanda.

❖ Methods

We conducted a 4 week observational study with serial interventions introduced at the beginning of each week while conducting direct but covert observation of hand hygiene practices during morning ward rounds among medical teams (students, residents and consultants) on all three blocks of the male medical ward in the largest hospital in Rwanda, the University Teaching Hospital of Kigali (CHUK). Hand hygiene opportunities (HHOs) included moments before and after contact with patients or their environment as well as procedures and medication administration. We defined hand sanitizing rate (HSR) as the percentage of total HHOs during which hands were observed to be appropriately sanitized. The impact of each weekly intervention on the hand hygiene behavior was recorded. The differences between pre-and post intervention HSRs were assessed for significance using Pearson chi square test.

Study design



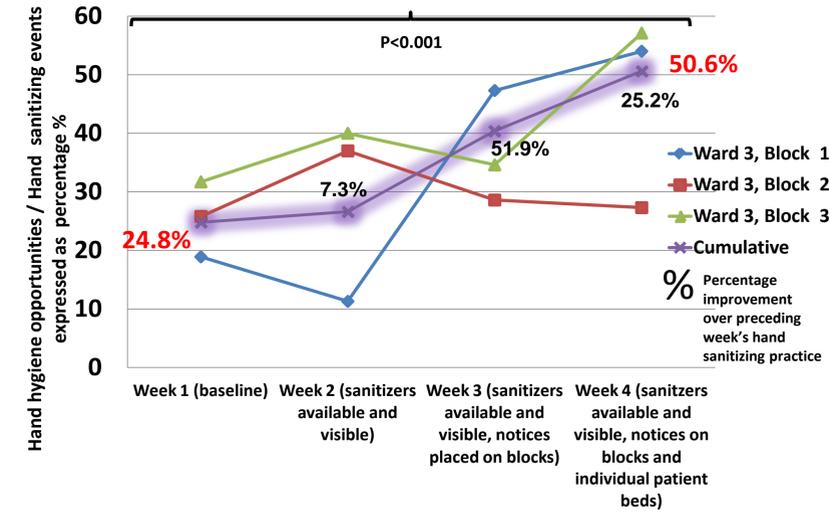
WEEK 1: Alcohol based hand rubs made available and placed in visible locations



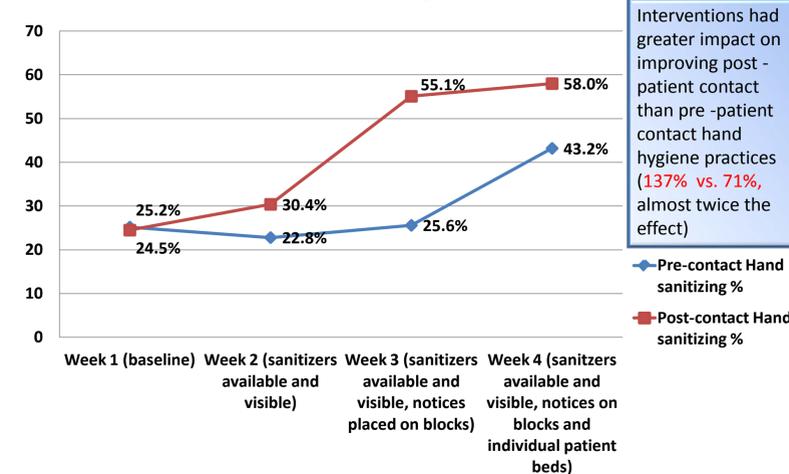
Week 4: Hand hygiene posters placed prominently at the head of each bed

❖ Results

Trends in Hand hygiene (HH) behavior over weeks 1-4 with serial study interventions



Effect of interventions on pre- and post-patient contact hand hygiene practices.



❖ Summary

A total of 780 HHOs were observed throughout the entire study period. Baseline HSR was 24.8%. On week 1, the intervention ensuring availability and visibility of hand sanitizers resulted in a non-significant increase in HSR compared to baseline (26.6% vs. 24.8%, $p = 0.66$). There was incremental improvement of hand hygiene behavior with subsequent interventions. HSR at week 3 was 40.4% and week 4 - 50.6%. Overall, hand sanitizing rates doubled from 24.8% to 50.6% ($p < 0.001$). Post-patient contact HSRs were impacted than pre-patient contact HSRs with rates improving from 25.2% to 58% and 24.5% to 43% respectively ($p < 0.001$).

❖ Limitations

- Long term trends in hand sanitizing behavior was not assessed – short term trends observed may be sustained, improved or could decline over time.
- Hand sanitizing behavior during rounds may not reflect behavior at later times of the day or during procedures when gloves are more likely to be worn.

❖ Conclusion

Our study showed that a combination of interventions involving ensuring availability of hand sanitizers as well as posting hand hygiene reminder notices significantly increased HSR by 104% (a doubling from baseline) among medical teams in a resource limited setting but post-intervention rates are still suboptimal. Our study also showed that strategic placement of hand sanitizers did not significantly impact HSRs.