

# Improving hand hygiene of caregivers in a Neonatal Intensive Care unit in Addis Ababa, Ethiopia



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## Introduction

Neonatal intensive care units in resource-limited settings carry up to 9 times higher burden of nosocomial infections than those in higher-income nations (1). This results in morbidity and mortality for patients and increased healthcare costs, with subsequent public health impacts (2). Given the global rise in antimicrobial resistance rates, preventing health care-associated infections is an international priority (3). This audit utilises the World Health Organisation's (WHO) facility-based hand hygiene implementation tool to evaluate hand hygiene before and after a department based educational intervention (4).

## Aims

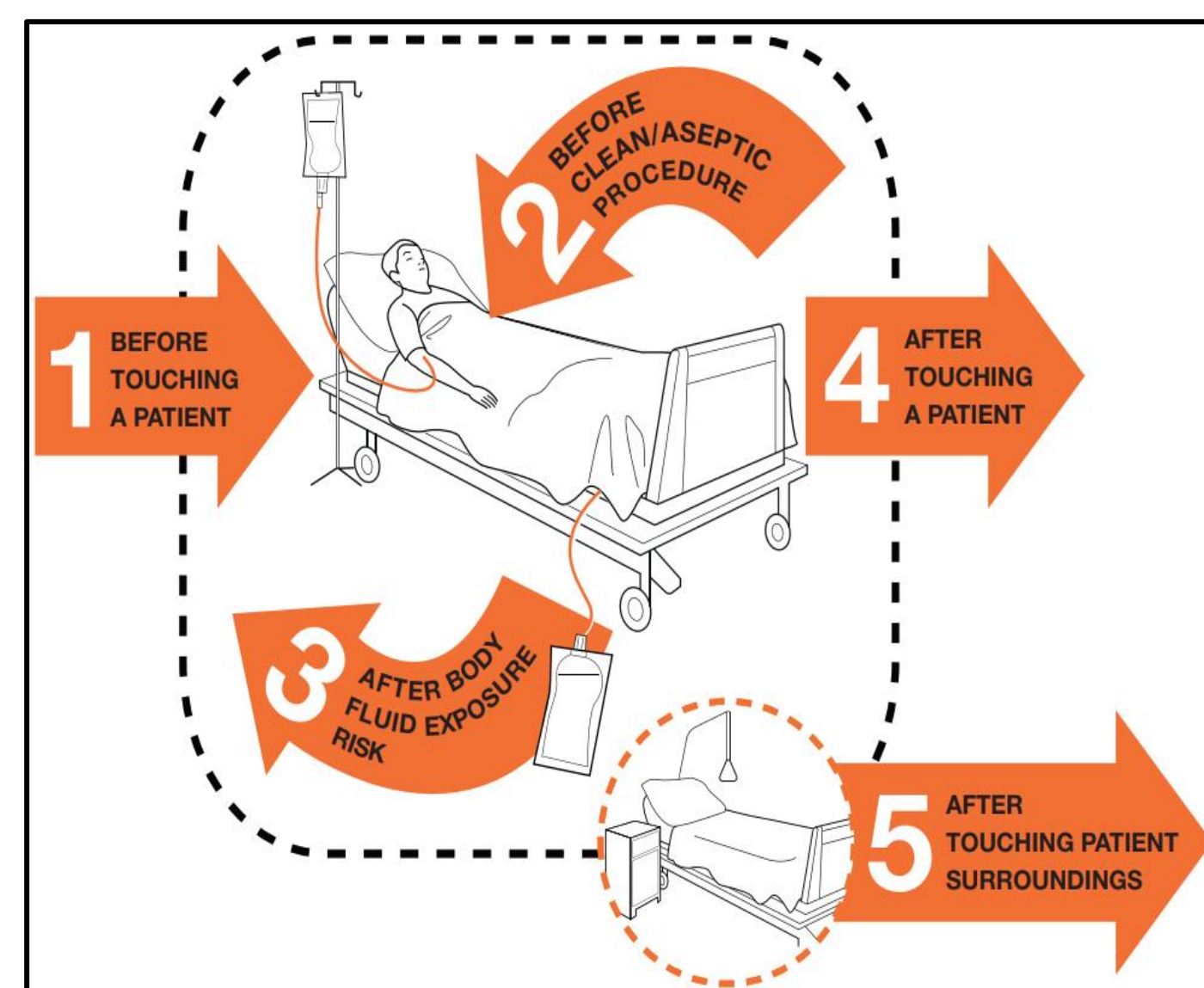
1. Assess hand hygiene compliance in the unit according to the WHO's '5 moments for hand hygiene'.
  - Identify the care giving role with the lowest hand hygiene compliance.
  - Identify the moment for hand hygiene with the lowest compliance.
2. Reassess hand hygiene according to job role and indication after an educational intervention session to all staff members.

## Standard and definitions

Correct hand hygiene action:

1. hand washing – soap and water
2. hand rubbing – alcohol gel

Incorrect hand hygiene action: no hand hygiene associated with an opportunity, or use of gloves without performing hand hygiene.



## Methods

Data was collected through direct observation using the WHO hand hygiene observation tool, through twelve thirty-minute observation sessions. All staff members and carers' hand hygiene practise were observed and recorded according to the opportunity observed.

Following feedback and education sessions to nurses, interns and residents, a further twelve thirty-minute observations were performed and hand hygiene opportunities recorded.

## Results

	Cycle 1	Cycle 2
Hand hygiene opportunities observed	195	201
Number observation sessions	12	13
Correct hand hygiene action taken	49.7%	66.7%
Correct hand hygiene using hand rub	95%	95%
Correct hand hygiene using hand wash	5%	5%
Timeframe	March 2023	April 2023

See Figures 1 and 2.

Interns had lowest hand hygiene compliance in both cycles, but compliance increased by 18% after the intervention.

Nurses had more hand hygiene opportunities in both cycles and had the largest increase in hand hygiene compliance after the intervention.

Lowest hand hygiene compliance was observed before aseptic procedures at 41.7% (12 opportunities, 5 correct actions). This improved to 72.7% after the educational intervention (22 opportunities, 16 correct actions).

See Figure 3.

The educational intervention session carried out between the 2 cycles checked learning through a pre and post intervention quiz. The mean quiz score increased from 3 to 4 after the intervention, with 57% achieving 100%.

Figure 1: comparison of hand hygiene compliance by job description between cycles 1 and 2.

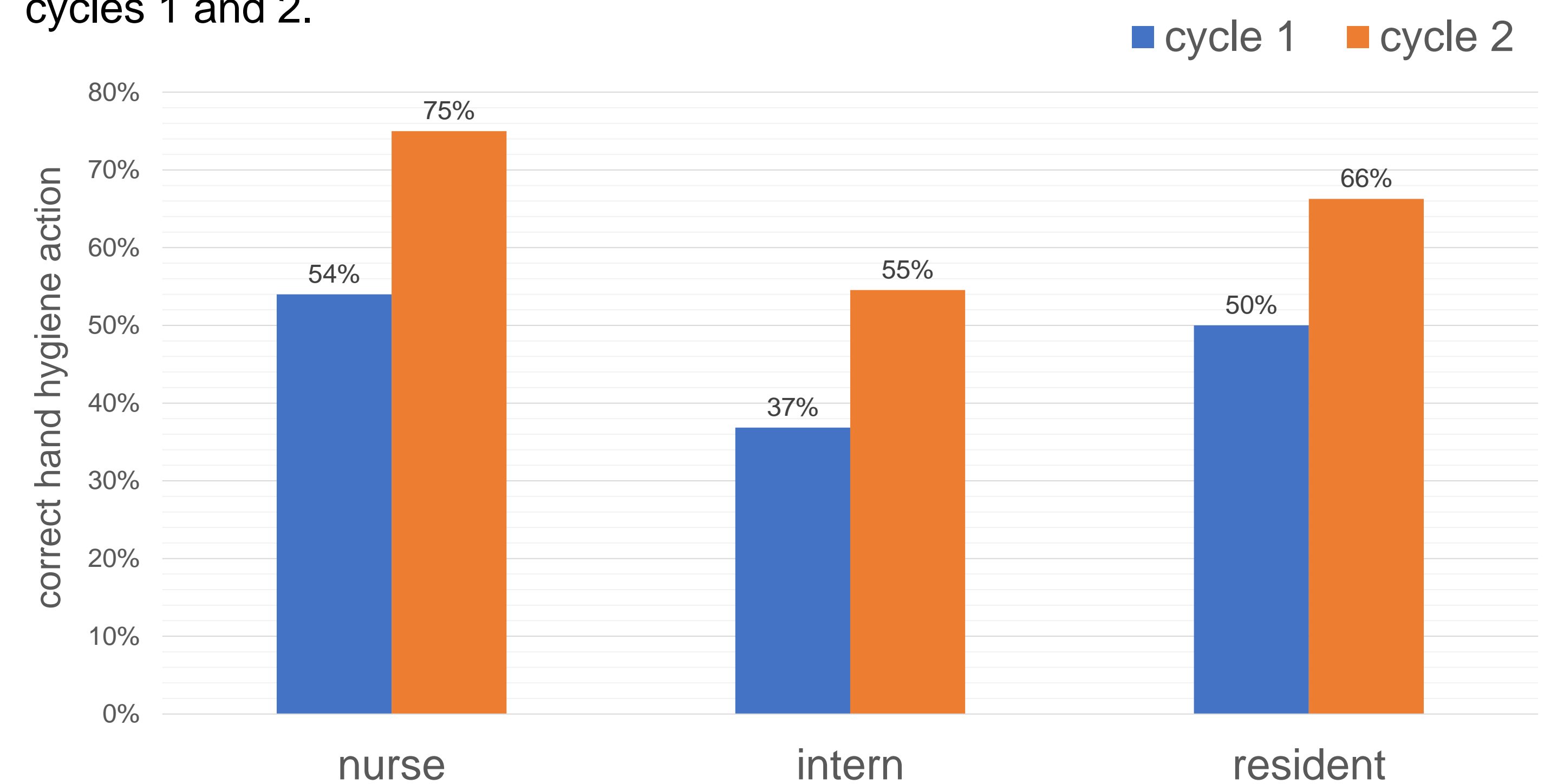


Figure 2: comparison of hand hygiene compliance by hand hygiene opportunity between cycles 1 and 2.

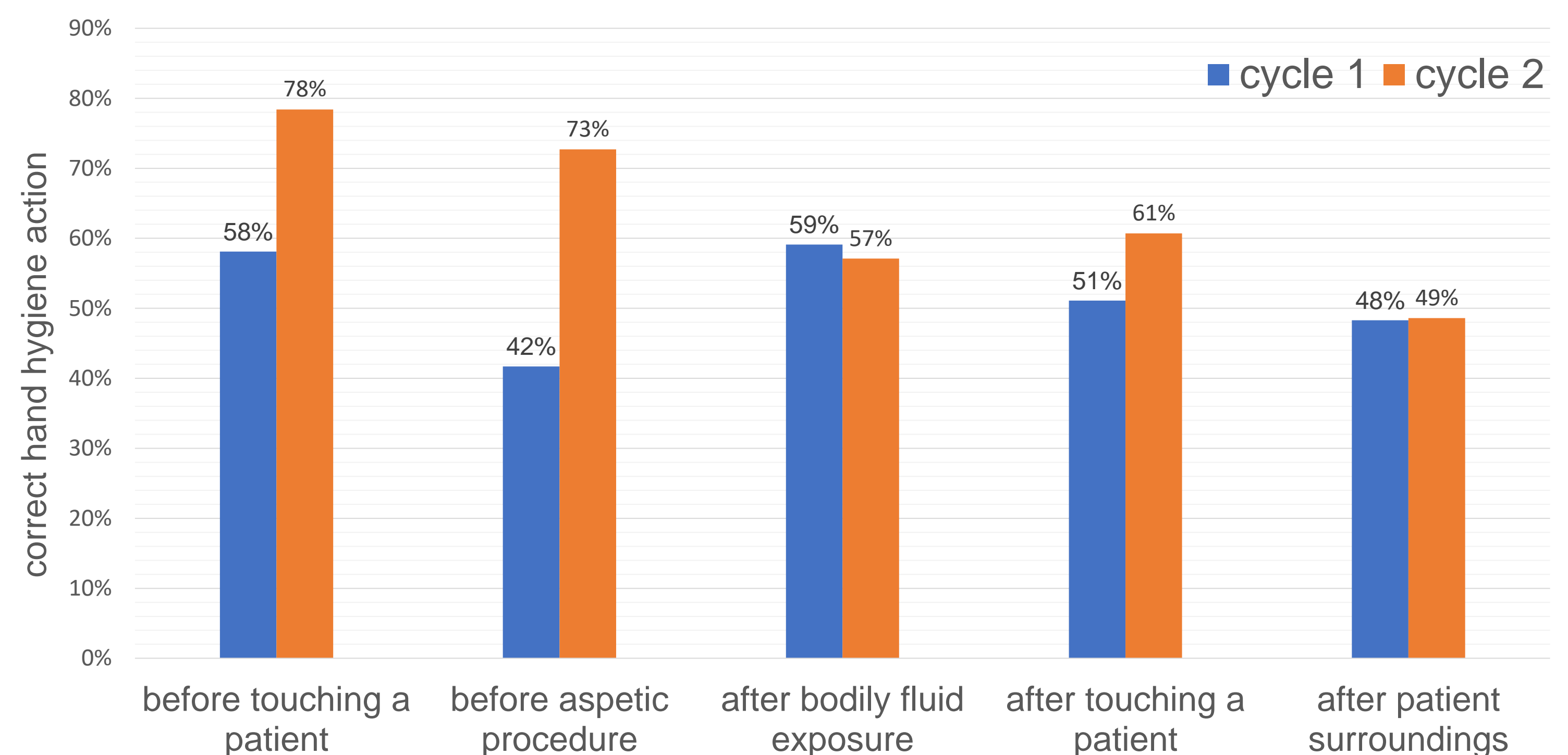
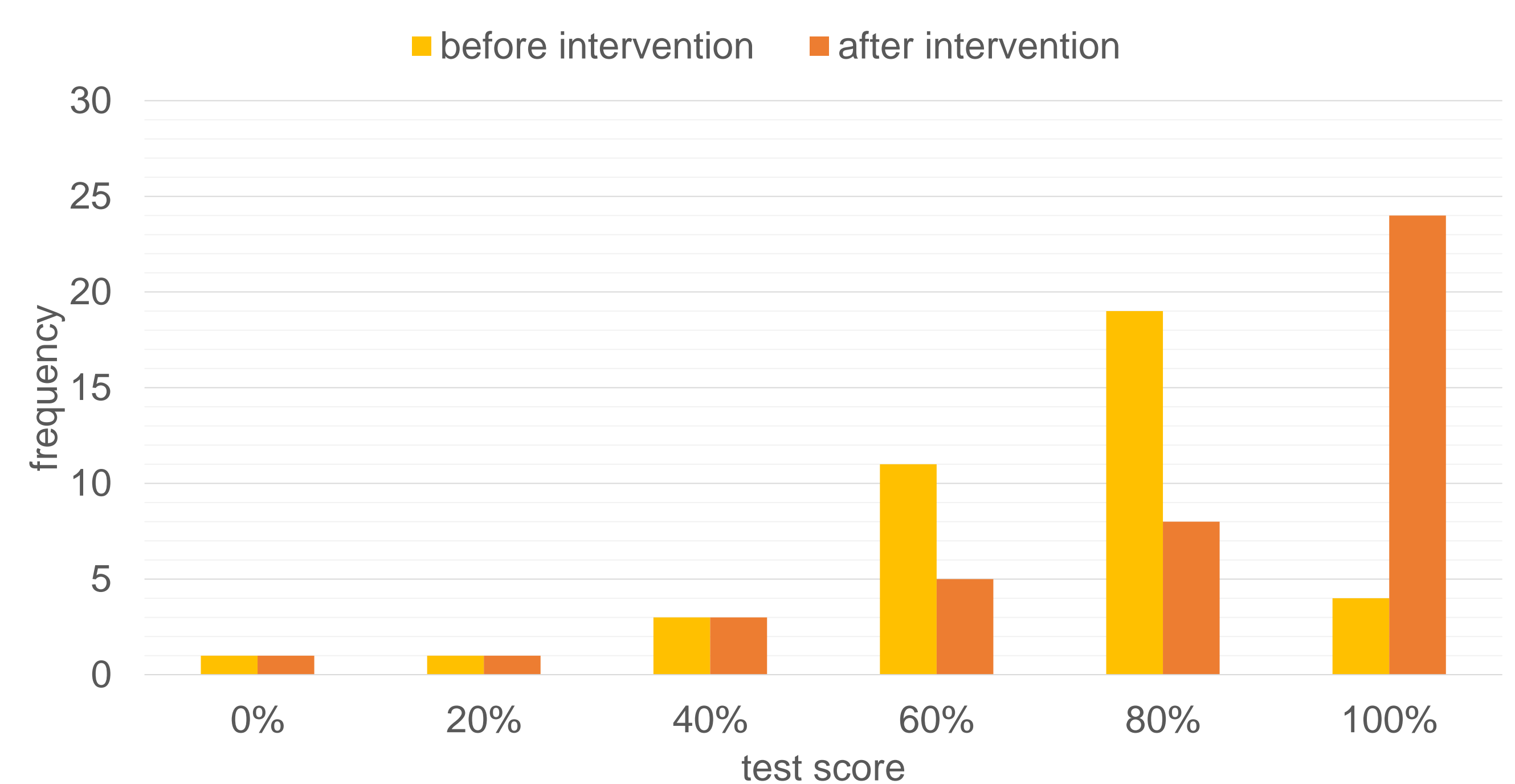


Figure 3: Knowledge test score before and after educational intervention.



## Conclusion

Hand hygiene on the neonatal unit is suboptimal. Although the intervention sessions were effective in increasing knowledge and changing hand hygiene practices in the short term, there is still room for improvement. Sustained behavioural change is required. Ongoing educational interventions would encourage this.

Education of patients' families should not be forgotten, as their care-giving role on the unit could be a contributing factor to high rates of hospital acquired infections.

Poor infrastructure and lack of financial capital result in limited water supply, which encourages alcohol gel use over hand washing. This challenge is difficult for the department to overcome and requires wider structural and economic investments.

## References

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