

# Frequently Identified Infection Control Gaps Related to Hand Hygiene in Long-Term Care Facilities

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## BACKGROUND

- Nebraska (NE) Infection Control Assessment and Promotion Program (ICAP) is supported by the Nebraska DHHS HAI program via a CDC grant and works to assess and improve infection prevention and control programs in all types of healthcare facilities.
- Little is known about hand hygiene (HH) policies and practices in long-term care facilities (LTCF).
- This project examined the frequency of hand hygiene-related infection control (IC) gaps and the factors associated with them in LTCF.

## METHODS

- NE ICAP conducted on-site assessments and observations of infection prevention and control programs (IPCP) in 30 LTCF from November 2015 to March 2017.
- The CDC Infection Prevention and Control Assessment Tool for LTCF was used for on-site assessments.
- When possible, observations of HH practices were made in the LTCF using the Centers for Medicare and Medicaid (CMS) Hospital Infection Control Worksheet.
- Gap frequencies were calculated for each question, which represent best practice recommendations (BPR): 6 on the CDC tool and 8 on the CMS tool.
- The Fisher's exact and Mann Whitney tests were used for statistical analyses examining associations of gaps with bed size (BS), hospital affiliation (HA), having a trained infection preventionist (IP), and IP weekly hours (WH)/100 beds for infection prevention and control activities.

## RESULTS

- Facility characteristics are found in Table 1.
- Only 6 (20%) LTCF reported having all 6 hand hygiene BPR in place while 14(47%) had fewer than 5 (Figure 1).
- All HH related gap frequencies identified during on-site interviews are displayed in Figure 2.
- LTCF with fewer gaps (5 to 6 BPR in place) appeared more likely to have HA as compared to the LTCF with more gaps but the difference didn't reach statistical significance (37.5% vs. 7.1%, p=0.09).
- When gaps were analyzed separately, it was found that LTCF affiliated with hospitals were significantly more likely to have a policy on preferential use of alcohol based hand rub than those without hospital affiliation (Figure 3).
- Observations of HH performance were made in 28 LTCF and the identified gaps using the CMS tool are shown in Figure 4.
- Observations of HH performance ranged from 1-11 in each facility, with an average of 4.5 observations made of HH before resident contact (N=126) and an average of 4.8 observations were made of HH after resident contact (N=135).
- Overall observed HH compliance across all 28 LTCF was 74%.
- Higher median IP WH/100 beds dedicated towards IPCP was the only factor significantly associated with 90% or greater compliance with hand hygiene (Table 2).

| Facility Characteristics   | N = 30          |
|--|-----------------|
| Hospital affiliation - n (%)   | 7 (23)          |
| Bed size - median (range)  | 60.5 (25 - 293) |
| Presence of trained infection preventionist - n (%)                              | 18 (60)         |
| Infection prevention-related worked hours per week per 100 beds - median (range) | 6.5 (0 - 24.0)  |

Table 1. Characteristics of Long Term Care Facilities

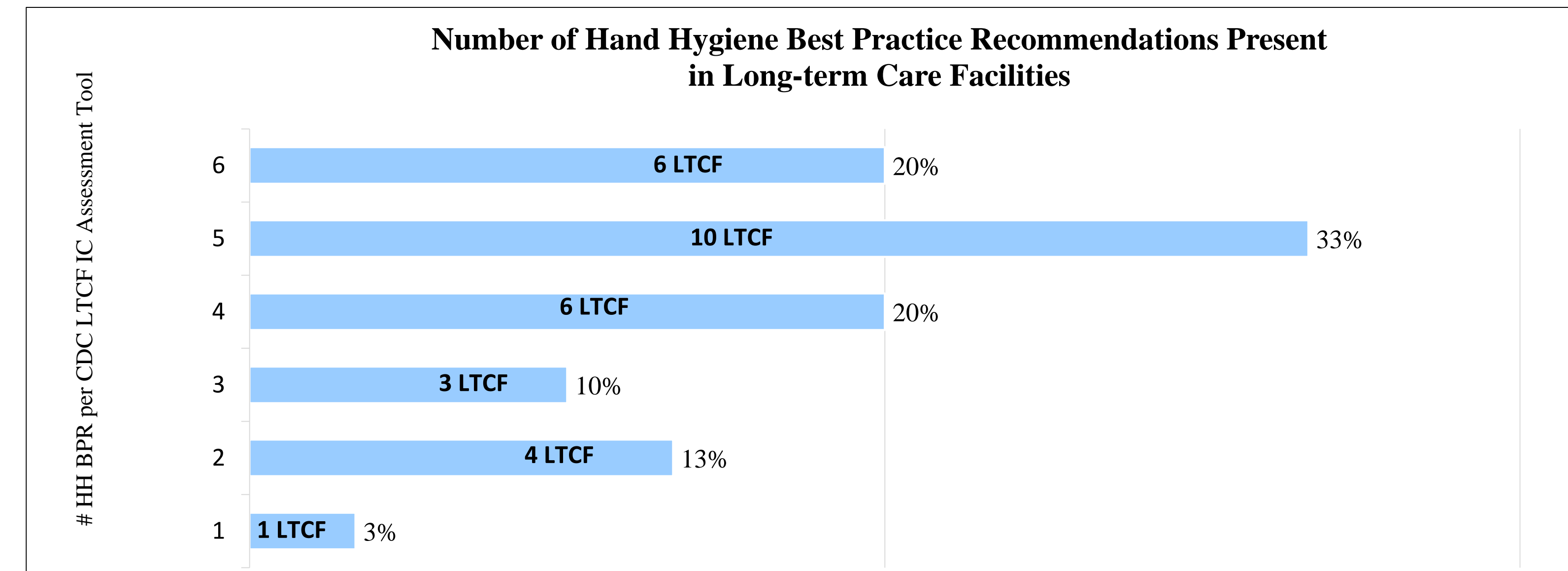


Figure 1. Number of Hand Hygiene BPR in place in LTCF

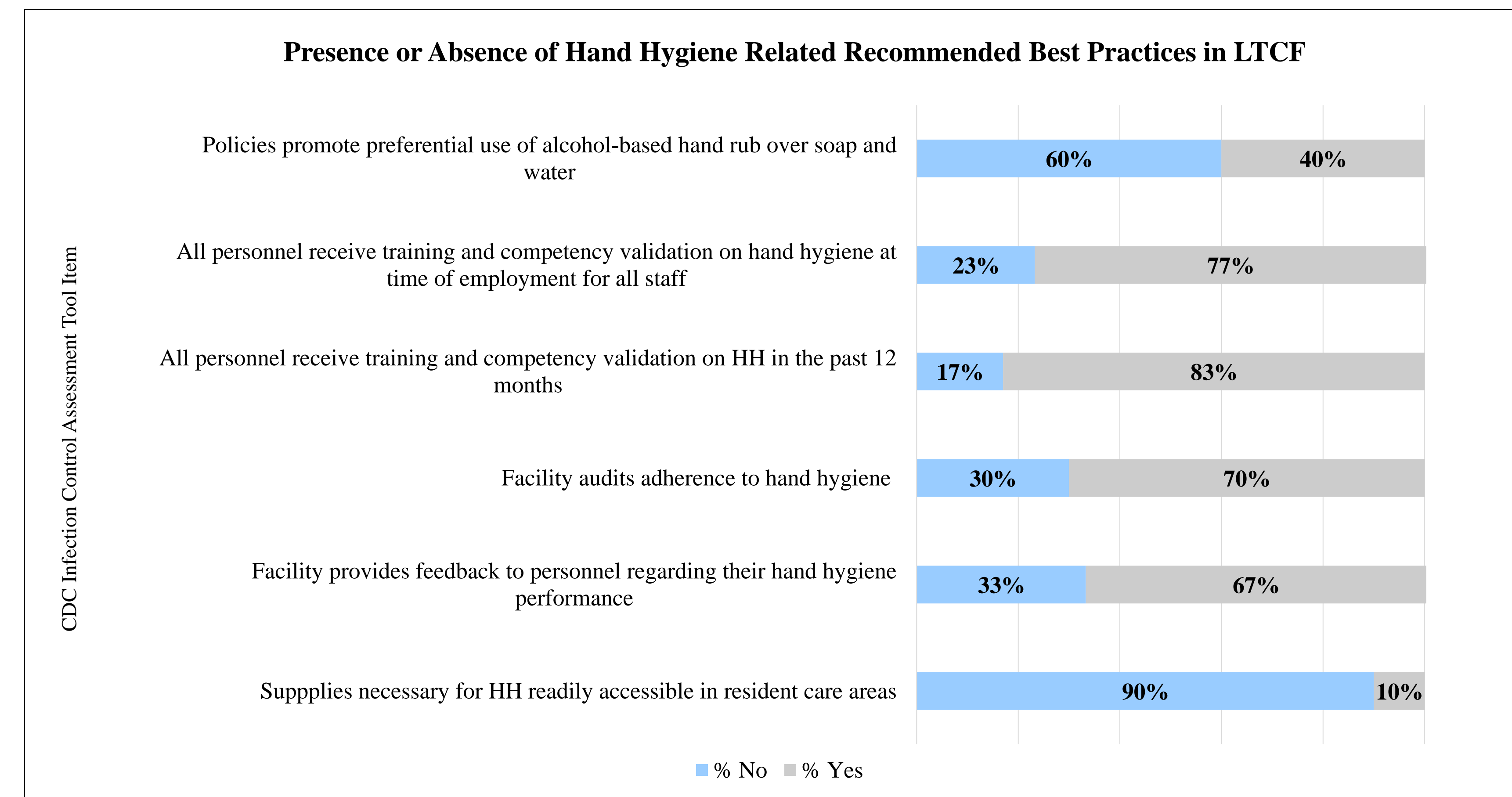


Figure 2. Presence or Absence of Hand Hygiene Related Recommended Best Practices in LTCF

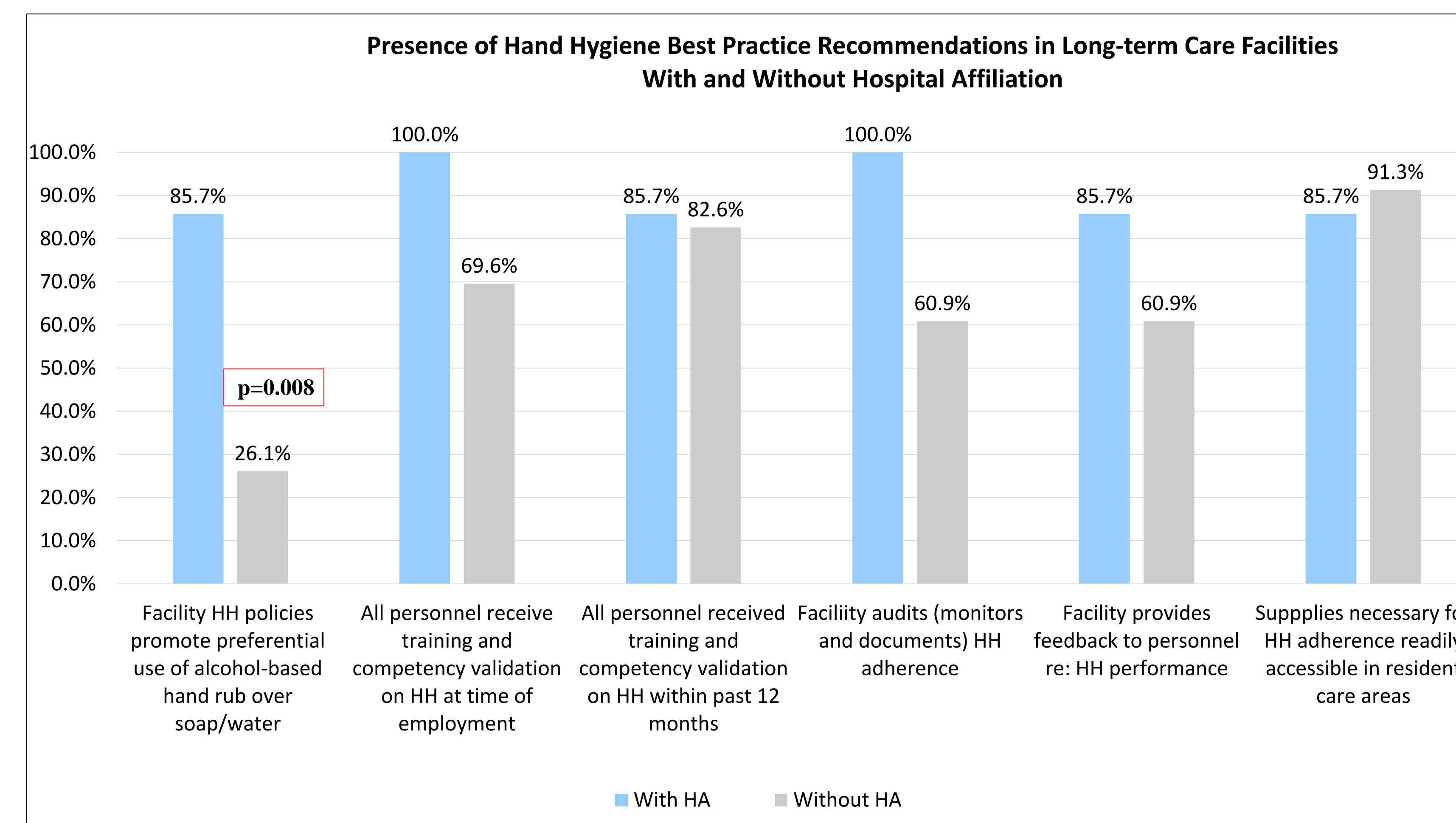


Figure 3. Presence of Hand Hygiene Best Practice Recommendations in LTCF With and Without Hospital Affiliation

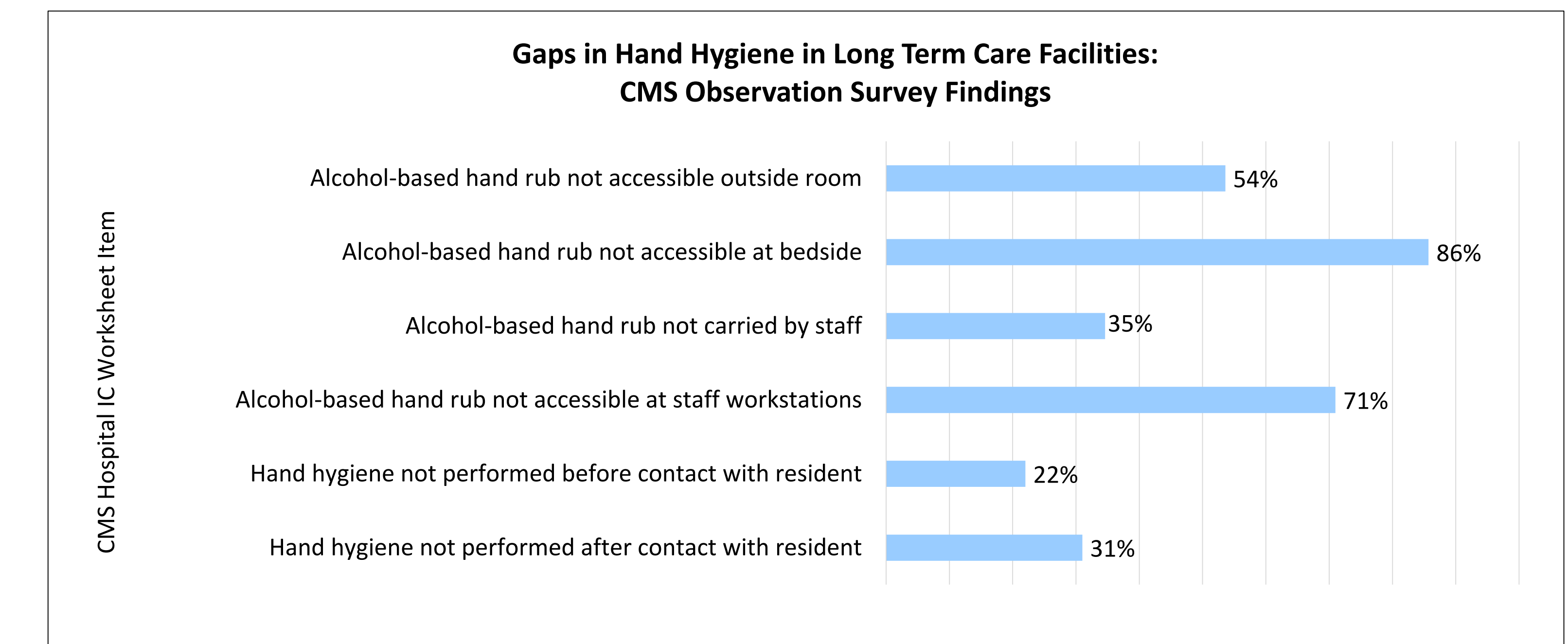


Figure 4. Gaps in Observations of Hand Hygiene Practices in Long Term Care Facilities

| % Observed HH Compliance in LTCF | Median Bed Size | Median IP Weekly Hours / 100 Beds | Hospital Affiliation | Infection Control Trained IP |
|----------------------------------|-----------------|-----------------------------------|----------------------|------------------------------|
| < 90% (n = 18 LTCF)              | 50              | 4.4                               | 17%                  | 61%                          |
| > 90% (N = 10 LTCF)              | 62.5            | 16.4                              | 30%                  | 50%                          |
| p value                          | 0.87            | 0.029                             | 0.63                 | 0.69                         |

Table 2. Factors Associated with LTCF with < or > 90% Observed Compliance with Hand Hygiene

## DISCUSSION

- Gaps exist in both program infrastructure and observed practices of hand hygiene.
- LTCF need to pay particular attention to the implementation of the following:
  - Alcohol based hand rub (ABHR) should be made readily available at workstations, outside of resident rooms, and at the bedside.
  - Facility policies should promote preferential use of ABHR over soap and water except when hands are visibly soiled.
  - Ensure hand hygiene audit and feedback mechanisms are in place which reliably identify practice gaps.
- Mitigation strategies may include encouraging LTCF to collaborate with infection preventionists at local acute care hospitals for guidance on infection prevention and control activities and to increase dedicated infection preventionist time towards these activities in LTCF.
- NE ICAP is helping LTCF with development of policy templates and resource sharing through their website and also on one-to-one basis.
- NE ICAP has partnered with the Nebraska Infection Control Network and the NE DHHS HAI Program to offer a training course on primary infection prevention to all infection preventionists that includes guidance on promoting hand hygiene best practices in LTCF.
- Future studies should evaluate the impact of such training efforts on outbreak recognition and prevention in long-term care facilities.

## DISCLOSURE

The authors of this study have nothing to disclose related to the content of this poster.

## REFERENCES

- Centers for Disease Control and Prevention (CDC) Infection Control Assessment Tool for Long-Term Care Facilities <https://www.cdc.gov/hai/prevent/infection-control-assessment-tools.html>
- Centers for Medicare & Medicaid Services (CMS) Hospital Infection Control Worksheet <https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/SurveyCertificationGenInfo/Downloads/Survey-and-Cert-Letter-15-12-Attachment-1.pdf>