Engaging Physician Learners in Covert Hand Hygiene Observations: A pilot educational and infection control initiative

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Abstract

Background: Hand hygiene (HH) is a widely recognized key standard practice to preventing healthcare-associated infection. Traditional direct observation methods are not reliable due to observer bias. Automated measurement systems generally do not capture specific moments of HH. Covert HH monitoring is a promising way of overcoming these limitations yet is difficult to sustain longitudinally.

Methods: We engaged physician learners in measuring HH adherence during their clinical rotations. The program was introduced during orientation and volunteer learners attended 1-hour training that included didactic learning and simulations. Data was entered into an application on personal devices, linked with a central server. Learners were not directed on which units or situations to observe, but rather to observe HH adherence within their usual workflow from 1 September to 30 November, 2023. Infection Control (IPC) auditors not known to the unit completed parallel audits. Learner and IPC audits were compared using the Chi-square for quality assurance purposes.

Results: Aggregate HH adherence collected by covert learners (n=4) of 51% (368/721) was not significantly different from that collected by IPC auditors (n=8) 51%(211/418) (p=0.8). Including only observations before and after patient/environment contact, HH adherence collected by learners was similar to that collected by IPC auditors; 49%(326/670) compared to 51%(205/404) respectively(p=0.51). HH adherence observed by learners by opportunity were: 45% before patient/environment contact; 88% before aseptic procedure; 77% after body fluid exposure; 53% after patient/environment contact. HH adherence observed by learners by healthcare worker group were: 48% physicians, 58% nursing, 76% allied health, 38% support staff, and 27% other.

Conclusions: Engaging physician learners in covert HH observation provides similar results to IPC auditors who are not known to the unit, suggesting learner data accurately reflects HH practices. This method better enables bedside HH observations, generally missed by traditional observation methods. Further evaluation is needed to confirm that covertness of observations can be maintained.

Background

- Direct observation methods are subject to Hawthorne effect
- Automated measurement systems fail to capture specific moments of HH
- Covert HH monitoring programs potentially overcome these limitations, but are typically difficult to sustain over long periods of time

Methods

Program Introduction and Training

- Introduced to physician learners during clinical rotations
- The covert nature of observations were stressed, with potential to be deactivated if collected data indicated detection

Software and Data Collection

- Application installed on personal devices of learners
- Learners instructed to collect data in real-time, within one hour of viewed observation
- To reach sufficient power, a minimum of 200 observations per quarter, per observer, were expected
- Software exports automated report of results by user-defined cadence

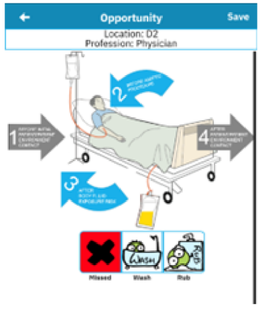

Figure 1. Data collection tool for hand hygiene observations.

Validation

- Infection Control auditors not known to the unit (i.e. covert trained auditors) conducted parallel audits using the same processes
- Covert learner audits and IPC audits were compared using the Chi-square

Results

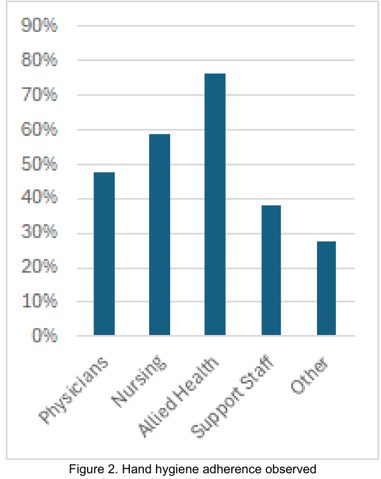

Figure 2. Hand hygiene adherence observed by learners by healthcare worker group

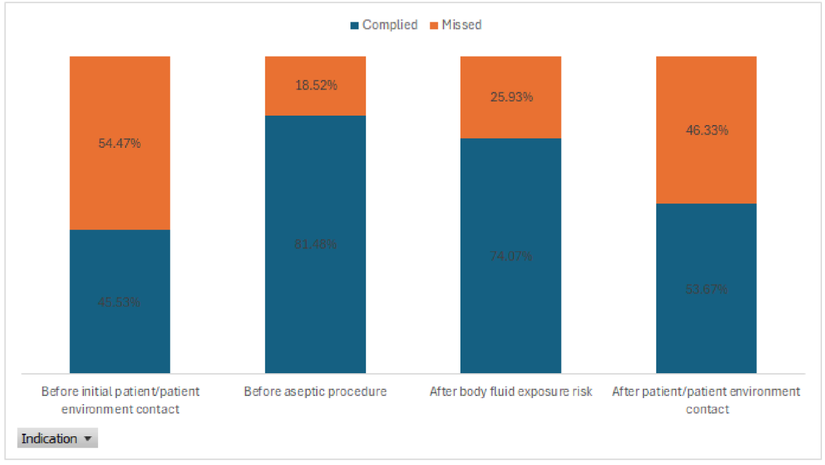

Figure 3. Hand hygiene adherence observed by covert learners

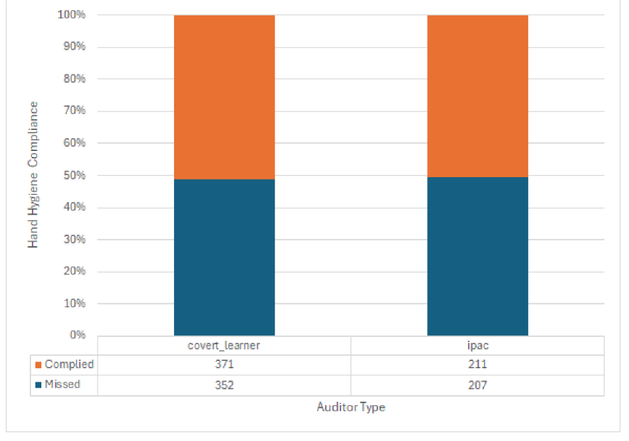

Figure 4. Comparison of covert learner observations with observations done in parallel by IPAC auditors

- Covert HH compliance documented by learners was lowest before patient contact
- Variability in performance based on clinician role
- No significant difference from covert trained auditors

Conclusion

- Covert hand hygiene observations by physician learners yield similar rates to IPC auditors, suggesting the data accurately reflects hand hygiene practices on the unit
- Further evaluation needed to confirm covertness can be maintained over longer periods of time