STUDY PROFILE

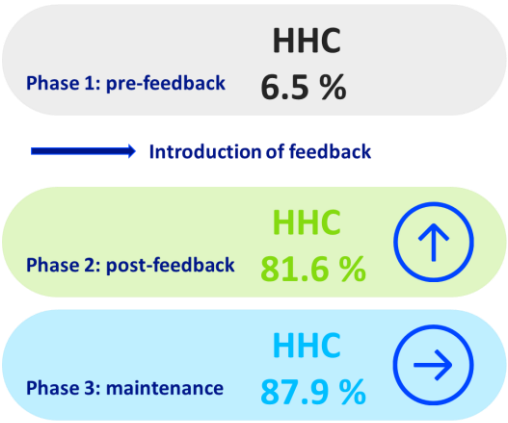
Improving hand hygiene by remote video auditing with real-time feedback

Real-time feedback can have a positive and sustained effect on hand hygiene compliance (HHC) rates.

One center interventional study
at a tertiary hospital in the northeast of the USA

STUDY RESULTS

HHC increased significantly and sustainably after real-time feedback was introduced.
Development of HHC in the pre-feedback, post-feedback and maintenance period.



STUDY DESIGN

The study was conducted in two periods

16-week period of auditing **without feedback**
91-week period of auditing **with feedback**

STUDY PERIOD

June 2008 – June 2010;
intervention phase of 107 weeks

MEASUREMENTS

Measurements during intervention phase

HHC of healthcare workers (HCW) was observed using doorway motion sensors and cameras (remote video auditing).

INTERVENTIONS

Focus on detection and feedback

Cameras were placed with view of every sink and hand disinfectant dispenser.

Direct feedback was given by light-emitting diode boards and reports sent via email to the study unit's leadership.

Research for infection protection

Source: Armellino D *et al.* (2012) Using High-Technology to Enforce Low-Technology Safety Measures: The Use of Third-party Remote Video Auditing and Real-time Feedback in Healthcare. Clin Infect Dis 54(1): 1–7.

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BACKGROUND

There are many studies on the improvement of hand hygiene compliance (HHC). Only few can achieve a sustainable effect and maintain HHC on a high level. The use of cameras has been shown to have a positive effect on human behaviour elsewhere (e.g. traffic cameras). However, it is rarely used in the health sector.

GOAL

The aim of this study was to assess the effect of remote video auditing with and without real-time feedback on HHC.

DESIGN AND METHODS

The study was conducted in a 17-bed medical intensive care unit (MICU) at a tertiary hospital in the northern United States during the period from March 2008 until June 2010. 21 video cameras were installed in the hallways and patient rooms with views of every sink and hand sanitizer so that hand hygiene events could be observed and quantified. Patients were not recorded by the cameras. In addition, entrances and exits were detected by motion sensors installed in the doorway of each patient room.

Upon sensor activation, a video was recorded that was subsequently evaluated by independent auditors. They rated a hand hygiene event as pass (patient contact > 60 seconds and hand disinfection < 10 seconds after entering/exiting the patient room) or fail.

The study was divided in 3 phases. During the first 16 weeks (pre-feedback) the installed cameras visualized hand hygiene without computation of compliance rates or staff feedback. During the following 16 weeks cameras additional direct feedback was given to staff by electronic boards mounted within the hallways and summary reports were delivered to supervisors by email. A maintenance phase of 75 weeks followed with observation and feedback.

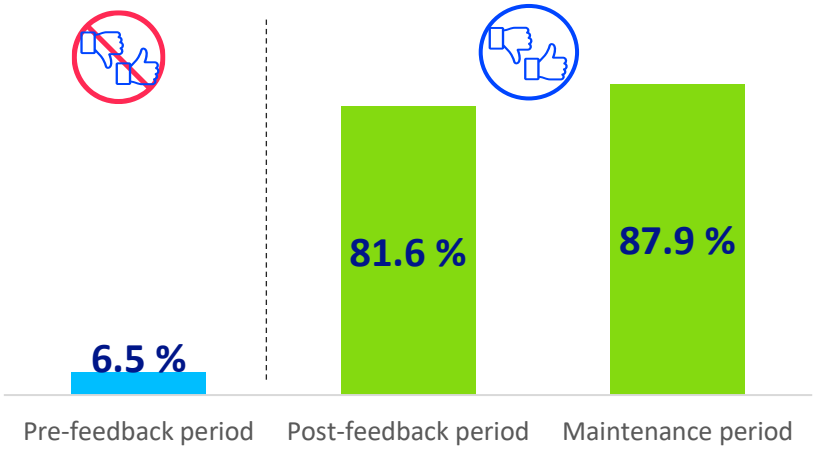
RESULTS

In the pre-feedback phase, 3,933 hand hygiene events were detected out of 60,542 room entrances or exits. This corresponds to a compliance of 6.5 %.

After HHC rates were shown to staff and supervisors, HHC increased immensely. During the post-feedback phase, a HHC of 81.6 % was observed.

A further increase up to 87.9 % was achieved in the maintaining phase, where feedback was provided, as well.

Figure 1: Hand hygiene compliance (%)



CONCLUSION

Hand hygiene behaviour can be significantly improved by using remote video auditing combined with real-time feedback to HCWs.

Research for infection protection

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