How good is the hand hygiene of surgeons?
A data-driven strategy for long-term behavioural change

sani nudge

Background

Many costly initiatives are conducted each year to increase hand hygiene compliance (HHC) of healthcare workers without being able to document an effect.

Data generated from automated monitoring systems provides important insights into the HHC and can be used to nudge and provide performance feedback.

Aim

We aimed to test the effect of visual nudges and performance feedback on surgeons using anonymized data from an automated monitoring system.

Method

This prospective, observational, quality improvement study was conducted between 2018-2019. The automated monitoring system (Sani nudge™) was installed at a Danish surgical department, and measured hand hygiene opportunities and alcohol-based hand sanitations of surgeons in all rooms of the in-patient ward.

The study period was divided into three phases with different types of feedback: 1) baseline, 2) nudging using visual clues from the sensors and 3) team performance feedback based on data from the system (Table 1).

Continuous variables are presented as means with SEM. Student's t-test test was used for comparisons between the groups. Analyses were performed using the Microsoft® Power BI software. A 2-sided value of $p < 0.05$ was considered statistically significant.

Results

The surgeons had an HHC of 30% during the baseline period (Fig. 1). The HHC significantly increased from baseline when the surgeons were visually nudged (30% vs. 55%, p=0.0005) (Fig. 1).

The surgeons further improved when they received team performance feedback (55% vs. 76%, p=0.002) (Fig. 1) compared with nudging only. The HHC level was stable throughout the study.

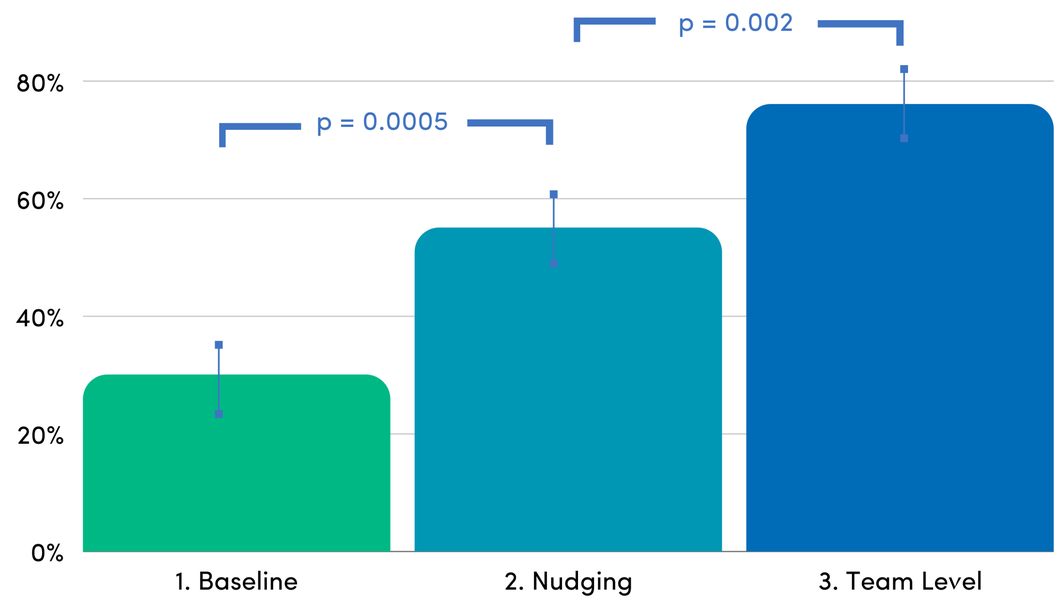
Conclusion

Nudging and performance feedback improve and sustain HHC of doctors. The highest HHC level was achieved when using a data-driven team performance feedback. The HHC levels achieved are some of the highest reported for doctors using automated monitoring systems.

Table 1. The different phases of nudging and performance feedback.

1. Baseline 2 months	2. Nudging 2.5 months	3. Team Level 9.5 months
Control period with no nudging or feedback.	The Sani nudge sensors, located on existing alcohol-based hand rub dispensers, used visual nudges (lights and symbols) to bring staff's attention towards hand hygiene. The visual nudges appeared when staff was in a situation that required hand sanitation and once sanitations was performed, a smiley appeared to complete the positive feedback loop.	The Sani nudge system provided the department with automated weekly reports with graphs showing the HHC levels for each room. One person from the department presented the data on a weekly meeting and the team discussed the results and how to overcome hand hygiene compliance barriers.

Figure 1. Change in hand hygiene compliance of doctors using different types of performance feedback



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