SYNOPSIS

KEY POINT SUMMARY

OBJECTIVES

The purpose of the study is to determine whether nurses' and physicians' hand hygiene practices before and after patient care would reduce absenteeism and reduce the substitute staff's overtime hours.

Use of an automated hand hygiene compliance system by emergency room nurses and technicians is associated with decreased employee absenteeism

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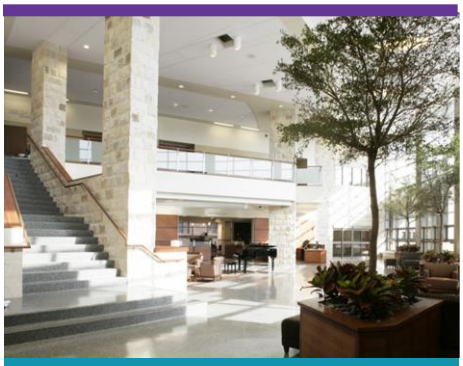
Key Concepts/Context

The relationship between hand hygiene intervention and absenteeism has been studied in other contexts besides healthcare. Researchers examined how improving hand hygiene practices among emergency room (ER) nurses and technicians affected their absenteeism and overtime hours worked by substitute staff. Results demonstrated that the investment in hand hygiene practices was beneficial to employees' health. The provision of hand hygiene dispensers in ER settings may improve hand hygiene practices as well.

Methods

This study used hand hygiene compliance systems (HHCSs) to quantify the health care personnel's hand hygiene performance. Wearable badges were used to detect, remind, and measure whether caregivers sanitized their hands before and after patient room entry. Each badge was programmed to track hand hygiene activity and upload the data to the cloud when it returned to the charging station. In this retrospective study, data were collected before and during the HHCS intervention from January 2015 to July 2016 and August 2016 to December 2018. Nurses' and technicians' sick call hours were retrieved from ER records, and the number of respiratory illnesses occurring within the community hospital before and during the intervention was obtained from the hospital's electronic surveillance system.

The authors assumed a normal distribution from a histogram that calculated the frequency of the average number of sick days each month. Then, the average number of sick call hours were predicted from a statistical analysis based on five predictors: (1) year, (2) month, (3) number of flu cases reported, (4) mean sick call hours the previous month, (5) sick call hours in the previous year. The analysis



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further compared the observed value of the average number of sick call hours with the predicted values.

Findings

The regression analysis revealed that the observed value of the average number of sick call hours did not differ much from the predicted values of average monthly sick call hours associated with the HHCS. A monthly average compliance rate of 94% was achieved during the intervention period. The linear regression model implies that the intervention of HHCS reduced the average sick call hours by 4.6 hrs./month (95% confidence interval, 0.6-8.7 hours per month; P=0.032). The study showed a statistically significant difference in the adjusted mean number of sick call hours each month from before to after HHCS implementation. The intervention of HHCS also led to a decrease in overtime hours worked by substitute staff, from 11,949 in 2015 to 7,092 in 2018.

Limitations

The authors have reported several limitations. Firstly, the hospital did not make any changes in human resources policies during the study period that would have impacted absenteeism. Secondly, there were no other direct employee health or hand hygiene interventions during the study period; other unknown factors may have contributed to the decline in employee absenteeism. Thirdly, the constant reminder of the HHCS badge increased awareness of hand hygiene practices in the ER, which may have influenced behavior. Finally, the study took place in a single hospital ER, and so there is not good generalizability.

Design Implications

The hand hygiene compliance system in the hospital ER demonstrated an improvement in hand hygiene practice. Similar intervention in other healthcare facilities may result in reducing employee absenteeism rates.