

Fixed Time Alarm Bell Technique as a Method to Improve Hand Hygiene Compliance

Sir,

We wish to highlight the importance of hand washing and the effect of a simple intervention of “Fixed time Alarm Bell Technique” to improve its compliance in intensive care settings. Hand hygiene is one of the most important maneuvers in an intensive care unit (ICU) to improve patient outcomes. Studies show that an increase in handwashing compliance can be correlated to a decrease in healthcare-associated infections.^[1-3] Despite this well-established relationship, compliance with handwashing among all types of health-care workers remains poor.^[4,5] Identifying effective methods to improve the practice of hand washing would greatly enhance the care of patients and result in a significant decrease in hospital-acquired infections.

The three most commonly used methods for measuring hand hygiene are *observation*, *product measurement*, and *surveys*. Direct observation of the hand hygiene behavior of healthcare workers is considered the “gold standard” of measurement methods. Observation allows us to see which hand hygiene products are used, the thoroughness of cleansing, the tools and technique used for drying, the use of gloves, and whether the staff are performing hand hygiene whenever there is an opportunity to do so. This method allows observers to see who is (and who is not) adhering to guidelines and to give prompt feedback when improvement is needed. In addition, direct observation allows health-care workers to evaluate facility-specific factors that may influence hand hygiene guideline adherence. With product measurement, we indirectly assess hand hygiene practice by calculating how much liquid soap, alcohol-based hand rub, and paper towels are used in a given area of the organization per patient day; through the electronic monitoring of sinks and alcohol-based hand rub dispensers^[5] or by automated counting devices.

The usual methods of improving hand hygiene in ICU settings is the presence of information posters, awareness talks, and training programs by nursing and medical leadership and periodic audit of prevalent hand hygiene practices. We used a unique “Fixed Time Alarm Bell Technique” to improve hand hygiene practices in our ICU.

A study was conducted to assess the role of a simple alarm bell technique toward improving hand-washing compliance at Paediatric Cardiac ICU of a tertiary care cardiac center. We used Direct Observation Method to calculate Adherence Rate (action per opportunity) in this study. It was divided into two study periods of 15 days each, conducted during September 2019. In the first half, data were collected regarding the prevalent handwashing compliance levels. An alarm bell ringing at

two hourly intervals was then introduced, reminding the ICU personnel to wash their hands with each bell ringing episode in addition to existing opportunities of hand wash. Over the next 15 days, hand washing compliance rate was once again monitored and compared with the previous data. It was seen that before the introduction of the alarm bell and the training, the calculated adherence rate was 59.2% (1369 washes/2312 opportunities). During the second half of the study, the calculated adherence rate was 74.9% (1849 washes/2466 opportunities). Hand hygiene compliance rates increased from 59.2% to 74.9%, ($P < 0.001$) after the intervention.

The baseline data of <60% in a tertiary level ICU suggest that hand hygiene is neglected even in the best of set-ups. Fixed time mandatory additional handwashing technique is a simple yet extremely effective way to improve hand hygiene compliance and in turn reduce nosocomial infections. The fixed time technique, in addition to adding fixed number of additional hand washes in a shift also creates awareness and culture of hand hygiene and increases adherence rates to much beyond just the additional mandatory hand washes. The main advantage of this method is that not only it improves the compliance rates but also the constant reminder in the form of an alarm makes it impossible to miss the opportunities of hand wash. Other methods of hand hygiene improvement such as the presence of posters, repeated training programs are not so direct and repetitive. Larger studies should be done to establish the efficacy of Fixed Time Alarm Bell technique to improve hand-hygiene practices and correlation with decrease in hospital acquired infections also should be probed.

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Conflicts of interest

There are no conflicts of interest.

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