

CASE STUDY

Improving hand washing among parent attendants entering the new-born intensive care unit of Ram Manohar Lohia Hospital, New Delhi, India

Summary

In its new-born intensive care unit (NICU), Ram Manohar Lohia Hospital (a central government hospital) provides specialised care to sick new-borns. Running low on staff, the hospital staff encouraged parents and attendants of sick new-borns to be involved in care for their babies. This, however, also posed a high risk of infections being carried into the unit by caregiving attendants. Staff found that that handwashing behaviours were poor among parent attendants. With facilitation from USAID ASSIST, a quality improvement (QI) team of hospital staff was formed to improve hand hygiene practices among attendants. From a baseline estimate of around 20 percent of attendants complying with hand hygiene standards, the team planned to reach a target of 80 percent over eight weeks by introducing a series of changes. At the end of nine weeks, the QI team met their aim—80 percent of attendants were following standard hand hygiene practices.

Introduction

The new-born intensive care unit (NICU) in Ram Manohar Lohia Hospital at New Delhi provides special care to sick new-borns. Severely ill new-borns, who cannot be taken care of in other hospitals of the region, are referred to this unit. The unit provides highly specialised care to these new-borns. Running low on staff, they encouraged parents and attendants of sick new-borns to be intensively involved in provision of care for their babies. With this close involvement in care, these babies receive much-needed emotional support that is usually lacking in intensive care settings. This, however, also poses a high risk of infections being carried into the unit by caregiving attendants.

Washing hands while entering the unit is a simple and effective way of preventing these infections. The unit staff conducted a daily orientation for the caregivers. This included a session on what hygiene practices to follow while entering. However, they still found that that handwashing behaviours were poor among attendants.

In May 2016, the head of the NICU attended a workshop on quality improvement (QI) organized by WHO's Southeast Asia Regional Office (SEARO) and USAID and led by staff from All India Institute of Medical Sciences (AIIMS) and the USAID ASSIST Project. Motivated by learning about the success of QI in the South Asian region, she committed to apply QI approaches to improve the safe engagement of parent-attendants of new-borns in the unit. With facilitation from ASSIST, she formed an improvement team consisting of three nurses and two unit coordinators. The QI team decided to improve hand hygiene practices among attendants entering the unit. From a baseline estimate of around 20 percent of attendants complying with hand hygiene standards while entering the unit, they planned to reach a target of 80 percent over eight weeks.

SEPTEMBER 2016

This case study was authored by Ankur Sooden of University Research Co., LLC (URC) for the United States Agency for International Development (USAID) Applying Science to Strengthen and Improve Systems (ASSIST) Project, made possible by the generous support of the American people through USAID's Bureau for Global Health, Office of Health Systems. The USAID ASSIST Project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard T. H. Chan School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WI-HER, LLC. For more information on the work of the USAID ASSIST Project, please visit www.usaidassist.org or write assist-info@urc-chs.com.

STEPS IN QUALITY IMPROVEMENT

STEP 1: IDENTIFY A PROBLEM, FORM A TEAM AND WRITE AN AIM STATEMENT

STEP 2: ANALYZE AND MEASURE QUALITY OF CARE

STEP 3: DEVELOP AND TEST CHANGES

STEP 4: SUSTAIN IMPROVEMENTS

Measuring hand hygiene practices and reorganising the workplace

To understand the process of washing hands properly, team members mapped the process by washing their own hands and figured out the amount of time it takes to wash hands as prescribed. The team then started observing ten attendants daily (selected randomly), to measure compliance with handwashing while entering the unit. They also took notes while observing, to understand the steps being followed during entry. These observations pointed to challenges related to attendant flow, since the changing room, handwashing station, and entrance were not located in sequence. They decided to continue with ten observations a day over the next eight weeks to monitor progress towards their QI aim. They understood that attendants could be washing hands better while being observed. They decided to spread these ten observations equally over day, evening, and night shifts.

A planned shift to a new building provided the team an opportunity to fix workplace organisation and attendant flow issues. Learning from the observations, they organised this new unit in a manner that made it easy for attendants to comply with hand hygiene. Handwashing station, soap, towels, and gowns were kept in a linear sequence. The new unit also had plans to install surveillance cameras. Team used this opportunity to get these cameras installed in a way that made it easy to record and monitor hand hygiene compliance during entry. In due time, as surveillance cameras were installed in the new unit and recordings were available to observe later at a convenient time, the team started using surveillance videos for random sampling and observation. This facilitated the task of data collection related to their QI aim.

Understanding attendant behaviour and intervening to change it

Three weeks into their attempts to improve, the team found it difficult to find causes for poor compliance and to develop ideas of change for further improvement. Pressed with questions as to why attendants would not comply, they conducted individual and group interviews with some attendants to analyse the problem further. The findings of the interviews showed that attendants believed they were cleaning their hands properly. Understanding that it was attendants' skills rather than intent to wash hands that were responsible for non-compliance, new ideas were developed around building skills.

The team realized that they needed to make the existing training for caregivers more interactive. The team tried adding a step-by-step demonstration in training. They also tried to place different nurses and coordinators as trainers to see if that could bring improvement. Both these ideas worked, and there was an increase in compliance with hand hygiene. Encouraged by this success in improving the orientation training for attendants, the QI team made a further attempt at making it more interactive. This time they introduced a component of peer-to-peer demonstration of washing hands by attendants which further improved handwashing.

The team next tried using Glogerm™, a proprietary product that when applied on hands, glows in UV light. The unit head had seen the practice in a hospital in Russia, where providers apply Glogerm before washing hands and see for any unwashed areas glowing in ultra violet (UV) light after washing. Any areas not adequately cleaned by soap would glow in UV light. The team thought of asking attendants to apply Glogerm before washing hands and examining under UV light later to look for areas of hand not cleaned by soap. The idea didn't work out well because of inadequate and irregular Glogerm supplies and difficulty in using UV torch. Some members also thought that this would be expensive to sustain.

Introducing self-evaluation as a means to improve

The team thought of various ideas to give attendants some feedback on how well they washed their hands. The first idea they tried was asking attendants to observe each other and correct if any step of handwashing was wrong or inadequate. They tried this for two days but had to immediately stop with attendants feeling bad about being observed and not taking the feedback positively. To avoid unpleasant feedback among attendants, the team decided to show videos to attendants from the previous day, allowing the attendants to describe how they were not complying with good handwashing technique. This idea also failed as the team realised that some attendants were not comfortable being shown as an example. Still, the team members were keen on using videos of

correct and improper hand washing. They picked two videos every day during observation, one where the attendant is following all essential steps of handwashing for an adequate duration, and another where there was poor compliance, to show as a good and bad example, respectively. This worked really well, and a sudden increase was seen in the improvement indicator.

Table 1 summarises the change ideas that the team developed and tested to increase proper hand hygiene by parents and other family attendants. **Figure 1** shows the results of the NICU QI team's efforts to improve caregiver hand hygiene.

Table 1: Change ideas developed by QI team to improve parent-attendant handwashing behaviour

Change Ideas	Results
Ensured regular supplies of consumables and sequential arrangement of NICU workspace	Positive impact
Rescheduled attendants' training, developed a training roster, and changed the trainer periodically	Positive impact
Improved training methods by making caregiver orientation sessions more interactive and engaging mothers in peer learning where they demonstrate handwashing to each other	Positive impact
Asked attendants to use Glo Germ™ before handwashing and demonstrated unwashed areas using ultraviolet torch	Discontinuous / mixed impact
Asked attendants to supervise their peers while handwashing and provide feedback	Negative impact
Presented surveillance footage of handwashing by the attendants present in a training session to help them self-evaluate	Negative impact
Used surveillance footage of handwashing by two attendants who were not present in that training session as a good and a bad example of how to wash hands while entering NICU, and asked them for feedback	Positive impact

Success, sustaining the gains, and spread

At the end of nine weeks since they set out to improve hand hygiene among attendant caregivers, the team achieved their improvement aim. Eighty percent of attendants were following standard hand hygiene practices while entering the NICU.

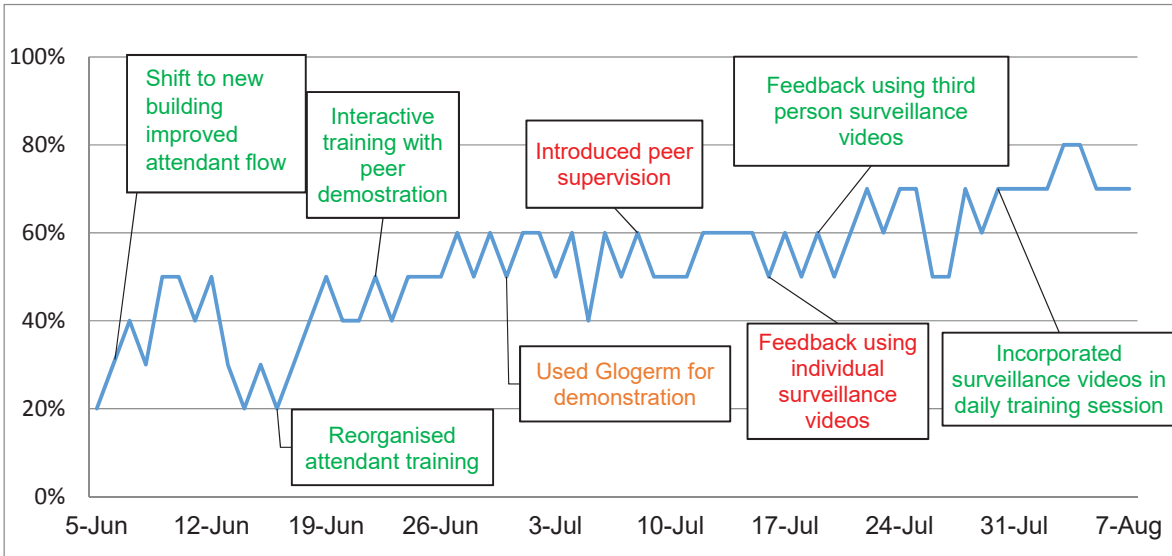
They are now implementing the changes they found successful to sustain the gains of their first improvement project. The training curriculum sessions are under revision to include more demonstrations and interactive sessions. A training calendar with rotating trainers is in place, and staff is developing a list of key messages for orientation of new staff who join this unit in future.

They are continuing with collecting data, less frequently now, for handwashing among attendants, to understand if the improvement in their care system sustains.

The QI team is enthusiastic about improving more components of care provided by the attendants of sick new-borns admitted to their unit. They have set new aims to improve use of expressed breast milk for admitted new-borns and increasing the duration of kangaroo mother care for new-borns. They have documented their efforts to showcase as an innovation in a national summit of good practices in healthcare. They have also developed a tool to measure quality of care provided by parent attendants, so that any weak areas maybe identified and efforts are made to improve them.

RML hospital NICU leads efforts in India on involving attendants in caregiving for sick new-borns. They plan to spread these learnings to other new-born care units in hospitals across India on similarly improving care provision by attendants of sick new-borns. The unit head believes they need to do more projects and develop their own capacities on improving care before mentoring other units. They are now running two new quality improvement projects that aim to improve use of breast milk among new-borns in the unit and increasing the duration of kangaroo mother care received by sick new-borns.

Figure 1: Proportion of parent-attendants following hand hygiene protocol before entering NICU in Ram Manohar Lohia Hospital, 5 June 2016 - 7 Aug 2016



This case study was made possible by the support of the American people through USAID. The contents of this case study are the sole responsibility of URC and do not necessarily reflect the views of USAID or the United States Government.