

Hand Washing Practices in Neonatal Intensive Care Units

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One-third of the annual 4 million neonatal deaths occurring worldwide are associated with infections [1,2]. In countries with high neonatal mortality (>45 per 1000 births), 50% of these deaths are attributed to infections [2]. India contributes to one-fifth of the total live births and 27% of global newborn mortality [3]. Essential maternal and newborn care interventions such as clean delivery, hygienic cord care, thermal care and breastfeeding can reduce infection-related neonatal deaths by 20–50% [4,5]. Simultaneously, it is prudent to escalate all measures to decrease health care-associated infections (HCAI) or ‘nosocomial’ infections. Proper hand washing by personnel handling neonates is a simple and effective intervention to prevent HCAI. However, it requires staff accountability and behavioral change. Strict adherence to hand hygiene practices in neonatal intensive care unit (NICU) has the potential to reduce the duration of hospital stay, long-term morbidity, emergence of multi-resistant organisms, cost of medical care and unnecessary deaths associated with HCAI. The rationale for hand washing is to reduce transient and resident micro-flora, and there is substantial evidence for the same. Better adherence to hand hygiene guidelines and policies has been shown to reduce the HCAI rate by as much as 40% [6,7].

The basic requirements for reducing HCAI in NICU would include continuous water supply, soap, elbow- or foot-operated taps, strict hand washing, avoiding overcrowding, acceptable nurse-to-patient ratio, sufficient disposables, rational antibiotic policy, and good housekeeping and asepsis routines. One should wash hands for at least 2 minutes following the six steps of hand washing allotting at least 20 seconds for each step. The six steps should cover the following in sequence: palms and fingers and web spaces, back of hands, fingers and knuckles, thumbs, finger tips and wrists and forearm upto elbow [8]. A hand rub may not be a substitute for hand washing before entering the NICU. The “My 5 Moments for Hand Hygiene” approach outlines the key moments which are applicable to the NICU setting also. This approach recommends hand washing before touching a patient, before clean/aseptic procedures, after body fluid exposure/risk, after touching a patient, and after touching patient surroundings [9]. Annual global campaign by WHO “Save lives: clean your

hands” also emphasizes the need to improve and sustain hand hygiene practices of health-care workers at the right time, and in the right way, to help reduce the spread of potentially life-threatening HCAI.

In a video surveillance audit of hand washing practices in a 26-bedded level III Neonatal Intensive Care Unit (NICU) from Gujarat, reported in this issue of *Indian Pediatrics*, the authors observed that among 1081 video recordings, 403 (37.3%) were excellent, 521 (48.2%) were acceptable and 157 (14.5%) were unacceptable [10]. About one in seven hand washing procedure was unacceptable, and these unacceptable procedures were more common during night hours and among parents [10]. Though this descriptive data appears preliminary, it probably reflects the state of hand hygiene compliance in most of the NICUs across the country, and calls for similar audits in all health care settings. It is to be noted that despite the fact that the participants were aware of the video surveillance, the compliance was not 100%. In case, the same video recordings had been done without the participants’ knowledge, we would probably get the true picture. Moreover, the video recordings can be shared with all the participants as a feedback, and this could in fact serve as a good training tool to enhance the compliance for strict hand hygiene in NICU. In the long run, even a dummy camera at the site of hand washing can make most of the healthcare workers adhere to strict hand hygiene. This report also reiterates the importance of ensuring good hand hygiene practices among all caregivers, especially parents. The limitations of the study, as stated by the authors, were: short duration, not observing health care personnel behavior change after the initial hand wash and not correlating the healthcare-associated infections during the study period.

Hand hygiene is indispensable for ensuring neonatal safety and should occur in a timely and effective manner in NICU. Low compliance with hand hygiene and poor antisepsis at birth and in the first week of life can increase the risk of deadly but preventable infections. Hand hygiene in NICU can be improved by removing the barriers and actively promoting compliance. Enhancing compliance can be achieved by training of personnel, provision of appropriate hand wash facilities, placing hand-rub dispensers at the appropriate sites, and by physicians setting a good example for others. It will be

better if NICU personnel develop obsessive compulsion for frequent hand washing rather than frequently chasing nosocomial bugs with newer antibiotics.

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REFERENCES

1. World Health Organization. World Health Report 2005: Making Every Mother and Child Count. Geneva: WHO, 2005.
2. Lawn J, Cousens S, Zupan J. 4 million neonatal deaths: when? where? why? *Lancet*. 2005;365:891-900.
3. Ministry of Health and Family Welfare, Government of India. India Newborn Action Plan. Available from: http://www.newbornwhocc.org/INAP_Final.pdf. Accessed January 12, 2015.
4. Darmstadt G, Bhutta ZA, Cousens S, Adam T, Walker N. Evidence-based cost-effective intervention: How many newborn babies can we save? *Lancet*. 2005;365:977-88.
5. Bhutta ZA, Darmstadt GL, Hasan B, Haws R. Community-based interventions for improving perinatal and neonatal health outcomes in developing countries: Review of the evidence. *Pediatrics*. 2005;115:519-617.
6. Uneke CJ, Ndukwe CD, Oyibo PG, Nwakpu KO, Nnabu RC, Prasopa-Plaizier N. Promotion of hand hygiene strengthening initiative in a Nigerian teaching hospital: Implication for improved patient safety in low-income health facilities. *Braz J Infect Dis*. 2014;18:21-7.
7. Janota J, Šebková S, Višňovská M, Kudláčková J, Hamplová D, Zach J. Hand hygiene with alcohol hand rub and gloves reduces the incidence of late onset sepsis in preterm neonates. *Acta Paediatr*. 2014;103:1053-6.
8. Hand washing – A simple and effective method for preventing nosocomial sepsis. Available from: <http://www.newbornwhocc.org/pdf/HandWash.pdf>. Accessed March 18, 2015.
9. World Health organization. About Save Lives: Clean Your Hands Available from: <http://www.who.int/gpsc/5may/background/5moments/en/>. Accessed March 18, 2015.
10. Shah R, Patel DV, Shah K, Phatak A, Nimbalkar S. Video surveillance audit of hand-washing practices in a neonatal intensive care unit. *Indian Pediatr*. 2015;52:409-11.