1195. Hand Hygiene Compliance of Patients’ Family Members in India: Importance of Educating the Unofficial “Fourth Category” of Healthcare Personnel
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Background. In India, due to manpower constraints, patients’ family members are often actively involved in healthcare activities of their near and dear ones. They have significant contact with the patient at all the five moments for hand hygiene (HH) as listed by WHO. At our tertiary care hospital in north India, we have been monitoring HH compliance (HHC) for nearly a decade. In this study, we analyzed the impact of decade-long awareness campaigns to improve HH compliance in our patients’ attendants.

Methods. Trained infection control nurses directly observed the compliance to hand hygiene at each of the five moments for patients’ attendants over different areas of the hospital over a period of 5 years (January 2014–December 2018). Compliance was calculated as percentage of events over total opportunities and compared.

Results. 7290 opportunities were observed with an overall compliance of 46.3%. The overall HH in patient attendants has increased from 35.5% in 2014 to 48.2% in 2018 (P < 0.0001). Compliance at WHO moment 1, 2, 3, 4 and 5 was 51.2%, 47.8%, 67.8%, 48.9% and 24.4% respectively. Among family members, mothers of newborn babies had a much higher HHC (77%) than others (44.7%) (P < 0.0001). Also, the compliance was higher in medical vs. surgical wards and pediatric wards vs. adult wards (P < 0.0001 in both).

Conclusion. This is the first study about family members’ HH compliance in a hospital setting in a low and middle-income country. Once trained, family members exhibit fairly good hand hygiene compliance while involved in healthcare activities of their patients. Mothers of newborn babies exhibit exemplary hand hygiene compliance while caring for their babies in our hospital. It is worthwhile empowering and educating patient attendants about the importance and process of hand hygiene as it is likely to result in immense benefit for patients.

Figure 1: Distribution of opportunities for HH observed in family members

Table 1: Hand hygiene compliance of patients’ family members observed at our hospital

| Category          | HHE (%) | HHO (%) | Compliance |
|-------------------|---------|---------|------------|
| Total             | 7290    | 3373    | 46.3       |
| Year wise         |         |         |            |
| 2014              | 575     | 204     | 35.5       |
| 2015              | 874     | 394     | 45.1       |
| 2016              | 1159    | 600     | 51.8       |
| 2017              | 2559    | 1151    | 45.0       |
| 2018              | 2124    | 1054    | 48.2       |
| Moment-wise       |         |         |            |
| BP                | 2836    | 1451    | 51.2       |
| ABP               | 224     | 107     | 47.8       |
| AP                | 751     | 509     | 67.8       |
| AP                | 1846    | 903     | 48.9       |
| Type of patient   |         |         |            |
| Paediatric        | 1183    | 659     | 55.7       |
| Adult             | 6107    | 2714    | 44.4       |
| Attendant category|         |         |            |
| Mother            | 361     | 278     | 77.0       |
| Other family members| 6929 | 3095    | 44.7       |
| Hospital area     |         |         |            |
| ICU               | 4822    | 2416    | 50.1       |
| General Ward      | 572     | 195     | 34.1       |
| Emergency ward    | 1528    | 483     | 31.6       |
| Speciality        |         |         |            |
| Medical           | 4525    | 2362    | 50.9       |
| Surgical          | 2765    | 1071    | 38.7       |

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1196. Is the Weekend Staff Really to Blame? Challenges in Isolation Compliance at an Academic Tertiary Care Center
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Background. Transmission-based isolation precautions are implemented in an effort to decrease the risk of transmission of pathogens. Weekend staff are perceived to have lower compliance.

Methods. Visual observation of healthcare worker (HCW) compliance with an institutional isolation precautions practices was done at an academic tertiary care center. In the first quarter of 2019, observations were completed for 894 patients who required contact, droplet or airborne isolation precautions. Observations included patients with infection or colonization with multi-drug-resistant organisms (MDRO) or highly transmissible infections. Observations focused on availability of appropriate supplies, compliance with infection control practices, and documentation. Audits were performed on workdays and weekends, and results were communicated to unit leadership via email. Comparison of proportions was calculated using the normal approximation in Minitab18.

Results. Compliance with the different elements of the audit can be seen in Table 1. HCW compliance with the use of personal protective equipment and hand hygiene on exit from the room had the lowest compliance and was statistically lower on weekends than on weekdays, and compliance was significantly lower than all other categories for both weekday and weekend measurements. Fifty-seven percent of all patients had missed compliance on one or more elements. There was not a statistically significant variation in practice between weekends and weekdays in overall compliance.

Conclusion. There is opportunity for improvement in all compliance on isolation practices facility-wide, and elements that require changes in behavior had the lowest compliance, and were lower on weekend shifts. We did not find other differences in performance for weekend staff vs. weekday staff. Educational measures should focus on all individual staff across all shifts.

Table 1: Isolation Compliance

| Isolation Bundle Compliance Elements | Monday Observations | Weekend Observations | Difference (P value) |
|-------------------------------------|--------------------|---------------------|---------------------|
| Properly fitted surgical mask        | 82% (2022/2461)    | 85% (2315/2726)    | 0.01 (2.3% - 1.3%)  |
| Mask used correctly                 | 80% (2018/2461)    | 85% (2315/2726)    | 0.007 (1.0% - 0.7%) |
| Surgical gown available             | 92% (2022/2238)    | 92% (2315/2508)    | 0.0001 (0.0% - 0.0%) |
| Surgical gown donned correctly     | 90% (2018/2238)    | 90% (2315/2508)    | 0.0001 (0.0% - 0.0%) |

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1197. The Gloves Are Off: The State of Personal Protective Equipment (PPE) Use in Contact, Droplet, and Standard Precautions at a Major Teaching Hospital
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Background. PPE (gowns, gloves and masks) is used in standard precautions (SP) as well as for contact, droplet or airborne isolation. Improper PPE use can lead to self-contamination and transmission of infectious agents, and at our institution the quality of PPE use has not been well assessed. For quality improvement purposes, we conducted an evaluation of healthcare worker (HCW) PPE use and knowledge of SP.

Methods. Two phases, direct observations and a survey, were completed between December 2018 and February 2019 in inpatient areas. Direct observations of PPE usage were done by Infection Prevention nurses (IPs) in contact and droplet isolation rooms during daytime hours using an internally developed observation tool (Figure 1). Observations focused on 3 stages of PPE use: donning, in room clean/dirty activities and doffing. A survey consisting of 15 questions was developed to assess staff knowledge of SP in specific clinical scenarios, perceptions of current practices and barriers to use. The survey was distributed by IPs to HCWs during their regular rounds. Data were recorded and tabulated using RedCap electronic survey tool.

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| Surgical gown available             | 92% (2022/2238)    | 92% (2315/2508)    | 0.0001 (0.0% - 0.0%) |
| Surgical gown donned correctly     | 90% (2018/2238)    | 90% (2315/2508)    | 0.0001 (0.0% - 0.0%) |

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Results. 106 observations and 107 surveys were completed. Observations showed appropriate PPE worn in 84% (n = 83) and hand hygiene (HH) post donning in 95% (n = 79). Common gaps included no HH pre-donning (33% n = 43), PPE not changed between dirty and clean tasks (29% n = 2), incorrect mask removal (20% n = 16) and donning gloves post-gowns (19% n = 69). In the survey, answers to SP questions suggest PPE is overused in patients with diarrhea or respiratory illness but underused in draining wound management (Figure 2). HCW felt more compliant than their colleagues in both HH and PPE (Figure 3). The largest misperception was that gowns should be donned pre-gloves (40% n = 40). Reasons for not using PPE included time (26%, n = 27), and perception that PPE is unnecessary (16%, n = 10). 75% (n = 80) of HCW felt adequately educated about PPE.

Conclusion. At our institution, significant gaps still exist in HCW knowledge and use of PPE. Future QI work should focus on increasing HCW knowledge of standard precautions, HH pre-donning, changing PPE when appropriate in room as well as proper donning order. The perception that HCW felt adequately educated despite significant gaps may be a barrier.

1198. Developing Infection Prevention and Control (IPC) Educational Videos to Improve Knowledge of Respiratory Virus Transmission and Etiquette

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Background. Most pediatric healthcare encounters for influenza-like illness (ILI) take place in ambulatory settings where there may be multiple opportunities for transmission of respiratory viruses, yet adherence to recommended respiratory etiquette behaviors is inconsistent. We developed brief family education videos and evaluated their impact on knowledge about respiratory virus transmission and IPC practices and intention to use respiratory etiquette behaviors.

Methods. We developed 3 animated, 2-3 minute videos for waiting room display. Content included respiratory virus transmission and the use of hand hygiene, masks, and tissues in a Cover Your Cough Station (CYCS). A convenience sample of caregivers (N = 116) recruited from waiting rooms of two primary care clinics in a large pediatric care network completed a questionnaire measuring perceptions of respiratory virus transmission risk in clinics and knowledge about IPC strategies before and after viewing the videos. Clinical staff (N = 8) from participating clinics revaluated video content and clarity of each video using an adapted version of The Patient Education Materials Assessment Tool (PEMAT).

Results. After viewing all videos, a significantly higher proportion of respondents knew where to find a CYCS (59%, 93%, P < 0.0001), accurately named CYCS items (30%, 72%, P < 0.0001), identified why cough etiquette is important (65% vs. 83%, P = 0.0003) and would use CYCS during office visits (61% vs. 89%, P = 0.0001). Baseline knowledge about appropriate hand hygiene and cough etiquette practices was high with no significant change post-video. Most caregivers reported that the videos were easy to understand (90%, 79%, and 82% for videos 1–3, respectively) and that the videos made them want to use a CYCS (95%, 91%, 85% for videos 1–3). All clinical staff agreed that the videos were appropriate for parents and children and also align with the practices’ IPC policies and other healthcare messages received by clinical staff.

Conclusion. Targeted educational videos may be an effective method for increasing awareness of respiratory etiquette resources in pediatric clinics to encourage the use of IPC strategies and prevent the spread of respiratory viruses.

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1199. Provider Perspectives on Nonsterile Glove Use in the NICU

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Background. Late-onset infection is a serious cause of mortality and long-term morbidity in NICU patients. Healthcare worker hands are the most common vehicle for transmission of pathogenic organisms to neonates. Studies have suggested a reduction in infections in neonatal and pediatric patients cared for with universal nonsterile glove use.

Methods. We developed an online survey (https://fhspeds.mcmaster.ca/pedsCa-pOne/surveys/?s=9RDX7EHT79) for clinicians to understand the current glove use and hand hygiene practices in NICUs in North America. The survey was sent to neonatologists and Pediatric Infectious Disease Specialists via the AAP Neonatal-Perinatal Section listserv, SHEA and the Canadian Neonatal Network.

Results. Of 336 responses; the majority were from physicians at level 3 to 4 NICUs (97%), and from the United States (96.1%). Beyond sterile procedures, sterile gloves were used for central line dressing changes (88.4%), contact with central nervous system shunts (61.9%), and direct contact with central lines (57.4%). Nonsterile gloves were used most commonly for universal precautions and diaper changes (Table 1). Almost half of participants also used nonsterile gloves for all patients and 37.5% for extremely low birth weight (<1000 g) infants. While most sites (76.8%) stated that nonsterile gloves were not required for parents, 15.8% requested gloves also for parents.

Conclusion. There is variability in gloving practices across NICUs in North America, with equipoise and interest in a potential randomized study to further explore the hypothesis that nonsterile gloves prevent late-onset infections in neonates.

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