References


The Use of Comic Drama in Improving Hand Hygiene Compliance

In order to improve the hand hygiene technique of health care workers (HCWs) in a tertiary pediatric hospital in Rio de Janeiro (Instituto de Puericultura e Pediatria Martagão Gesteira—UFRJ-IPPMG), an intervention was created with the clown-actors of the Doctors of Happiness (Doutores da Alegria) non-governmental organization [1].

Hand hygiene opportunities in the infirmaries were observed from August 2004 to April 2005. In November 2005, the infection control team launched the 3-day intervention. Ads were posted...
announcing the wedding of two multi-drug resistant microorganisms, and if the HCWs did not comply with hand hygiene measures, they would disseminate. Despite the festive approach, the seriousness of the objective was always fully respected by all HCWs. Possible flaws in hand hygiene were pointed out using fluorescent dye as soap. The hand hygiene products and methods, including the pros of using alcohol-based solutions, were discussed.

The ratio of nurse/patient per infirmary and the number of critical patients per infirmary were evaluated. There is no intensive care unit at IPPMG.

The endemic rates of extended spectrum beta-lactamase (ESBL) *Klebsiella pneumoniae*, by active surveillance (admission and weekly stool/rectal swabs cultures) were collected. Indigenous colonization of ESBL *K. pneumoniae* was defined as colonization 72 h after admission.

ESBL *K. pneumoniae* colonization pressure was defined by the ratio of patient-day colonized by ESBL *K. pneumoniae*/1000 patient-day.

A data set was created and analyzed using STATA 9.0, Texas, USA.

The Fisher’s exact test and the Mann–Whitney test were used.

This study was reviewed and approved by the IPPMG Ethical Committee.

Among the 1490 hand hygiene opportunities that were fully observed, the HCWs disinfected their hands 33% of the time; 59 (4%) used alcohol-based product, 399 (27%) used soap and water, and 33 (2%) used both. The rate of hand hygiene compliance was below the observed in other studies [2, 3], however, in a study of hand hygiene practice in a pediatric intensive care unit, it was even lower: 30% [4].

During the period before the intervention, in 27% (260/953) of hand hygiene opportunities, HCWs used soap and water, and 32% (172/537) after the intervention (RR = 0.85, 95% CI 0.73–1.00). Before the intervention, alcohol-based product was used in 5% of the opportunities (48/952), and after the intervention 9% (44/504) (RR = 0.58, 95% CI 0.39–0.86).

We were not able to demonstrate the benefit of the hand hygiene improvement; i.e. the incidence of ESBL *K. pneumoniae* colonization in the wards did not decrease (Table 1). Considering that we were not in an epidemic phase, small differences between periods were difficult to detect. If we increased the observation period to detect these differences, we would probably not measure the effect of the intervention, since we do not believe that the effect of a 3-day intervention would last several months. It is worthwhile to note that even in a higher colonization pressure situation; such as in the post-intervention period, the incidence of colonization did not increase (Table 1).

In conclusion, this study demonstrated that a cheap, reproductive intervention based on the social marketing theory [5], improved hand hygiene in a pediatric hospital in a middle-income developing country.

**Cristina Hofer, Thalita Abreu, Enaldo Silva, Carla Sepulveda, Nadja Lopes, and Ana Cristina Frota**

1 Department of Preventive Medicine, 2 Department of Pediatrics, Universidade Federal do Rio de Janeiro R Bruno Lobo, 50 Ilha do Fundação Rio de Janeiro, Brazil, 22000 doi:10.1093/tropej/fmr111

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**References**


<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Period before the intervention</th>
<th>Period after the intervention</th>
<th>RR (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse/patient ratio, mean (SD)</td>
<td>0.37 (0.18)</td>
<td>0.35 (0.18)</td>
<td>–</td>
<td>0.12</td>
</tr>
<tr>
<td>One or more critical patient during observation, N (%)</td>
<td>396/932 (42)</td>
<td>198/518 (38)</td>
<td>0.90 (0.79–1.03)</td>
<td>0.11</td>
</tr>
<tr>
<td><em>Klebsiella pneumoniae</em> indigenous colonization (per 1000 patient/day)</td>
<td>1.06</td>
<td>0.43</td>
<td>0.41 (0.07–13.34)</td>
<td>0.36</td>
</tr>
<tr>
<td><em>Klebsiella pneumoniae</em> colonization pressure</td>
<td>7.2%</td>
<td>11%</td>
<td>1.56 (1.04–2.34)</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>


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Correspondence: Cristina Hofer, Department of Preventive Medicine, Universidade Federal do Rio de Janeiro.
E-mail <cbhofer@hucff.ufrj.br>.