Hospital cleaning: The need for attention to detail

Rhannon Lloyd-Hughes, Foundation Year 2, West Midlands Deanery, UK

Background
- The NHS Operating Framework states that improving hospital cleanliness, reducing hospital acquired infections and improving patient experience are national priorities for 2009/10.1
- Hospital cleanliness and patient satisfaction are closely related and the appearance of the environment is the most important factor in influencing patients’ perceptions of overall cleanliness.2
- There are concerns amongst patients and healthcare workers that hospitals are not as clean as they should be.3
- Evidence suggests that the inanimate environment in hospitals acts as a reservoir for pathogens,3,4 and may present a cross-infection risk.
- Improving the safety of the patient environment by eliminating potential infection risks poses a major challenge to infection control teams.

Reason for this project
As a medical student I noted that certain ward areas, including bedside Bibles and notes trolleys, were routinely missed during cleaning. Media attention has focused on bedside Bibles as potential vectors of infection and reports describe healthcare institutions where they have been removed because of concerns about the spread of pathogens such as meticillin-resistant Staphylococcus aureus (MRSA).5,6

Following on from my observation I undertook a project to microbiologically sample Bibles and notes trolleys in one hospital (University Hospital Birmingham/UHB); I isolated MRSA from one Bible and found that Bibles and notes trolleys were macroscopically dirty (see Figures 1-4).7 I decided to repeat the study in another hospital to compare the results and determine whether my initial findings are generalisable.

Methods
Bibles were examined on five adult medical and surgical wards at Hereford County Hospital in 2009. We reviewed the location and macroscopic appearance of Bibles and swabbed the outside covers and spine for MRSA using a sterile swab pre-moistened with selective mannitol broth. Samples were processed by the hospital laboratory in the usual way (incubation onto Biomerieux MRSA chromoagar, incubation at 37°C for 48 hours, sensitivity testing performed using BSAC). We gelled our hands with alcohol gel and used Biomerieux MRSA chromoagar, incubation at 37°C for 48 hours, sensitivity testing performed using BSAC. We also processed by the hospital laboratory in the usual way.

Results
Table 1 shows the results of the examination of Bibles as compared to findings obtained at UHB.8

<table>
<thead>
<tr>
<th>Storage Location</th>
<th>University Hospital Birmingham (n=42)*</th>
<th>Hereford County Hospital (n=87)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tissue</td>
<td>1 (2.4%)</td>
<td>4 (4.6%)</td>
</tr>
<tr>
<td>Hair</td>
<td>0</td>
<td>1 (1.1%)</td>
</tr>
<tr>
<td>Storage</td>
<td>Custom-made bracket</td>
<td>19 (45.2%)</td>
</tr>
<tr>
<td></td>
<td>inside bedside cabinet</td>
<td>12 (28.6%)</td>
</tr>
<tr>
<td></td>
<td>around bedside</td>
<td>11 (26.2%)</td>
</tr>
<tr>
<td>MRSA isolated</td>
<td>1 (2.4%)</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 1: Investigation of bedside Bibles

Discussion
The results were similar in both hospitals, therefore the problems we highlight and our recommendations are likely to be widely applicable in healthcare. Our observations of the quantity of dirt on notes trolleys and Bibles suggests that these areas were routinely missed during cleaning and this is likely to negatively influence patients’ and relatives’ overall perception of hospital cleanliness.8 Moreover, the findings at UHB support the theory that hospital Bibles do become contaminated with pathogens and could present a cross-infection risk.

Our experience highlights the challenges presented to infection control teams in providing and maintaining a high standard of cleanliness. Bibles and notes trolleys, are part of a larger problem of lack of attention to detail in cleaning regimes and the observation that there are hospital areas that are missed in routine cleaning now attracts increasing attention in the medical literature.

Recommendations
1. Cleaning regimes should aim to include ward areas that are routinely missed
2. Heavy-handed Bibles should be replaced.
3. Consideration should be paid to the storage of Bibles:
   - We suggest they be stored in a central area accessible on request
   - If kept at bedside they should be wrapped in disposable plastic and stored in a custom-made bracket.
4. We do not recommend removing Bibles as patient groups confirm they can be an important source of comfort to patients.

Previous research
Hospital surfaces that have been evaluated for carriage of nosocomial infection include hands, gloves, bedside rails, chairs, door handles, sink drains, taps, countertops, blood pressure cuffs, medical records, intravenous infusion pumps and computer keyboards.8,9,10,11 We found no evaluation of microbial carriage on notes trolleys or patient Bibles.

Aims
1. To establish the macroscopic appearance of bedside Bibles
2. To identify where Bibles are stored
3. To determine if MRSA can be isolated from bedside Bibles
4. To compare the results to findings at UHB
5. To make recommendations for improving infection control measures

Changes implemented
As agreed via the Trust Infection Prevention and Control Committees:

University Hospital Birmingham
- Bibles in poor condition were discarded and replaced with new ones
- Bibles were covered with wipeable plastic covers
- Notes trolleys were included in cleaning schedules

Hereford County Hospital
- Bibles are being moved to a central area with management by ward housekeepers.

References
4. Boyce JM. Environmental contamination makes an important contribution to hospital infection. J Hosp Infect 2007; 65 (Suppl. 2): S0-54
6. Davies H. Anger over hospital Bible ban. The Herald Sun (Australia) May 2006; 14

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