Trial Evaluation of Macerator Waste Disposal Units

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Report produced by Sister M Wade and Sister S Gilling
Evaluation Report of Macerator Trial – 2005

Background

The wards in the Practice Development Unit have been open since 1989 serving a predominantly elderly patient base. The bed occupancy is constantly at capacity and the turnover of patients has increased on a year on year basis.

The wards were originally designed to house less patients than the current capacity.

The sluice rooms on each ward were fitted with a variety of standard bedpan washer / sluice machines which over time have failed to meet the demands of usage and have naturally started to come to the end of their effective life cycle.

There are ever increasing demands on the bedpan washers in terms of acceptable levels of cleaning and disinfection being provided and an increasing awareness of the need for greater infection control measures to be in place, monitored and maintained.

In view of the above, a discussion took place as to the most effective way of upgrading the old machines to meet the new criteria and greater demands of the increased bed numbers.

Options

The bedpan washers could have been replaced with more modern models of essentially the same type of machine. Trials of replacement washers were completed on Rockley and Longfleet wards. The machines were from two manufacturers. One was extremely difficult to load and use, was very time consuming for nursing staff and was equally as noisy as the redundant model, the other one which was more straightforward to use failed to meet the required standard of cleanliness.

The alternative was to trial Macerators. Two companies supplied 'trial' machines. Two HAIGH 'Sluicemaster' machines were fitted into Longfleet Ward and two Vernacare macerators were fitted into Brownsea Ward.

Both systems used the Vernacare pulp products

Below is a table of comparisons for the two macerators trialled. For the purposes of this report the focus is on the user findings. Cost implications are not accounted for as that information has not been provided.

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<table>
<thead>
<tr>
<th></th>
<th>Haigh</th>
<th>VernaCare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of Use</td>
<td>Easy to use. Single programme system. Single button start up. Lit opening handle can be operated with one hand or elbow – therefore used pans etc do not need to put down on surfaces.</td>
<td>Easy to use. Single programme system. Single button start up. Much heavier closure action required</td>
</tr>
<tr>
<td>Noise Level</td>
<td>Much quieter than washer. Haigh machine is quieter than Vernacare</td>
<td>Much quieter than washer</td>
</tr>
<tr>
<td>Speed of cycle</td>
<td>84 seconds per cycle</td>
<td>120 seconds per cycle</td>
</tr>
<tr>
<td>Effective use of nursing time</td>
<td>Nursing time is saved due to - no racking to fit pans etc into pre cycle - no unloading required</td>
<td>Nursing time is saved due to - no racking to fit pans etc into pre cycle - no unloading required</td>
</tr>
<tr>
<td>Is there a reduction in the risk of cross infection?</td>
<td>Yes - Single patient use pulp product. No queuing of pans awaiting washing. No need to pre empty the pan before insertion into machine. No possibility of pans coming from machine still soiled requiring further cycle. Plastic surfaces are impregnated with antimicrobial product.</td>
<td>Yes - Single patient use pulp product. No queuing of pans awaiting washing. No need to pre empty the pan before insertion into machine. No possibility of pans coming from machine still soiled requiring further cycle.</td>
</tr>
<tr>
<td></td>
<td>Initial training on day of installation. Staff training leaflets given to ward. Training given by engineer to hospital</td>
<td>Initial training on day of installation. Expectation of cascade training by staff to staff/</td>
</tr>
</tbody>
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estates engineers. Offer of further training sessions and power point lecture covering infection control as well as macerator use.

<table>
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<tr>
<th>Durability</th>
<th>One episode of plastic 'carrier' pan being macerated. Machine survived – no damage – no broken pan easily removed by hospital estates staff – checked by engineer from Haigh</th>
<th>Two episodes of inadvertent use. One jug – machine survived. One pan 'carrier' buckled macerator blade parts had to be replaced.</th>
</tr>
</thead>
</table>

16 litres of water per cycle
Low cycle time
Cold water only – no costs of heating.

No use of chemical cleaning agents or softeners required

Pulp products

Vernacare make their own range of pulp products. Both macerators used vernacare pulp products for the trial. Haigh trial various pulp products through their machine and therefore there is a possibility of a cheaper alternative being procured.

Macerator friendly wipes are now available to prevent blockage occurring by accidental disposal of wipes via the macerator.

Summary

The comparison of the two machines has shown that from a clinical viewpoint the HAIGH machine would appear to be the most effective in terms of ease of use, cycle time and durability.

There have been no outbreaks of Diarrhoea infections on either of the trial wards during the trial period. This is in spite of other wards in the same unit experiencing infection outbreaks during this time.

In comparison with bedpan washers, the macerators are quieter, quicker, easier to use and more effective. There is now much less

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evidence of malodour on the ward as there is no stack of pans awaiting washing. The cold water system is better from an energy saving point of view as well as the fact that there is now no scald risk for staff from steam as the door opens.

**Conclusion**

The conclusions drawn from the trial are that the macerators are a vast improvements on the older style washers. There are benefits to the staff in terms of time and safety, to the patients in terms of infection control and less noise on the ward and to the environment both locally in terms of less malodour and globally in terms of water and electricity use.

The costs of the pulp products are undoubtedly negotiable and some of the on costs of the pulp products can be offset against the use of chemical cleansing agents for traditional bedpans, less PPE usage (only need to load the machine – no unloading) and nursing time.

The HAIGH Macerator appeared to be easier to use, has a lower cycle time and from discussions between the staff of the two trial wards, is the preferred option from the clinical perspective.

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