

Quality improvement project to evaluate nursing compliance with cleaning shared patient equipment utilising an ultraviolet marking kit.

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Background

Shared patient care equipment can act as a vehicle for the transmission of infection between patients. In order to reduce the risk of transmission equipment should be cleaned between patients as part of standard precautions.

Patient care equipment that comes into contact with intact skin is classified as non-critical. Non-critical equipment requires cleaning, at a minimum, between patients¹.

To review nursing compliance with cleaning shared equipment an audit was undertaken to assess the cleaning rates over a two-week period in two similar 32 bed surgical wards on equivalent equipment utilising an ultraviolet marking kit. After the implementation of several initiatives a follow-up audit was conducted over a one-week period.

Initial Audit:

The equivalent equipment, on both wards, was marked with the Clinell ultraviolet pen in more than one place on day one. The equipment was reviewed from day two to day ten on a Monday to Friday basis (nine days in total) at a similar time each day. If the ultraviolet dot was removed the item was deemed as cleaned and remarked in the same position. If the dot was still present the item was uncleared. Consideration of the placement of the dot was undertaken to reduce the dot being removed due to friction from touch as opposed to cleaning, for example the letter Z was chosen on the keyboard as less likely to be touched but should be removed if the entire keyboard is cleaned.

Equipment included:

- Electrocardiogram machine (ECG)
- Resuscitation trolley
- Intravenous trolley
- Desk computers x 2
- Desk phones x 2
- Workstation on wheels x 2
- Bladder scanner
- Blood glucose monitoring machine
- Welch Allyn vital signs machine x 2

Results

WARD	TOTAL NUMBER OF UV MARKERS	TOTAL NUMBER OF UV MARKERS CLEANED	TOTAL CLEANING PERCENTAGE
Ward 1	260	29	11.15%
Ward 2	241	20	8.30%

Please note the discrepancy in the total number of UV markers in each ward is different due to equipment being repaired during the audit period or not able to be found.

The results identified poor compliance on both wards with cleaning non-critical equipment. An action plan was developed to improve the results.

Interventions:

- Four, thirty minute education presentations to the nursing staff outlining the importance of cleaning non-critical equipment and ward audit results. Discussion included cleaning equipment after use including the ECG machine, bladder scanner, vital signs machines and BGL machines. Cleaning workstations at the beginning and end of each shift and cleaning WOWs before and after use. During discussions the nursing staff agreed they were not cleaning equipment adequately and agreed to improve their practice. 47.46% of Ward 2 nursing staff attended and 29.63% of Ward 1 nursing staff attended an education session.
- Due to low percentage of Ward 1 attendance to education session the results were presented at their fortnightly ward meeting.
- Email sent to Ward 1 and Ward 2 nursing staff highlighting the results of the audit and Queensland Health recommendations identifying the need to clean non-critical equipment between patients.
- Engagement with Ward 1 and Ward 2 Nurse Unit Managers outlining the audit process and results.
- Discussion with Infection Prevention and Control team.
- Implementation of Clinell Universal wipes clip packets attached to mobile equipment.
- Implementation of extra Clinell brackets to hold the Universal wipes placed near computer stations to ensure cleaning product were available at point of use.
- Implementation of small round laminated signs "Please clean me before and after use" and "Have you cleaned your work station?".

Have you cleaned your work station?

Please clean me before and after use.

These were placed on several workstations and mobile pieces of equipment.

- Discussion with ward clerk supervisor re ward clerks cleaning desk computers on a regular basis. Supervisor agreed to discuss with ward clerks.
- Commitment to reaudit over a one-week period to review the success of the implementation strategies.

Reaudit: A reaudit replicating the initial audit was conducted over a period of one week, three months after the interventions were introduced. It was noted if there was a Clinell Universal wipe clip packet present on the equipment or a wall mounted packet close by and if not, the wipes were replaced.

Results

WARD	TOTAL NUMBER OF UV MARKERS	TOTAL NUMBER OF UV MARKERS CLEANED	TOTAL CLEANING PERCENTAGE	TOTAL PERCENTAGE DIFFERENCE FROM AUDIT 1
Ward 1	116	30	25.86%	+14.71%
Ward 2	108	23	21.30%	+13%

Points of Interest

- The ECG machine was noted not to be cleaned once during the initial audit period and was not cleaned during the reaudit period. The ECG machine was noted to be used six times on Ward 1 and three times on Ward 2 during the reaudit period. The ECG machine leads come in close contact with patient's skin and bedding.
- Ward 2 had a 100% improvement in the cleaning of the blood glucose monitoring machine and Ward 1 a 75% improvement.
- Despite the vital signs machines being used multiple times on multiple patients throughout a 24 hours period there was not 100% compliance in the reaudit. Ward 1 had a 20.25% improvement and Ward 2 a 21.5% improvement.
- There was an improvement in the desk computers being cleaned but no improvement in the workstation on wheels (WOW). The WOWs are used not only by the nursing staff but the entire multidisciplinary teams multiple times a day.
- Similar results were noted in both the initial and reaudit on Ward 1 compared to Ward 2.
- It is not possible to guarantee all equipment audited was utilised daily.

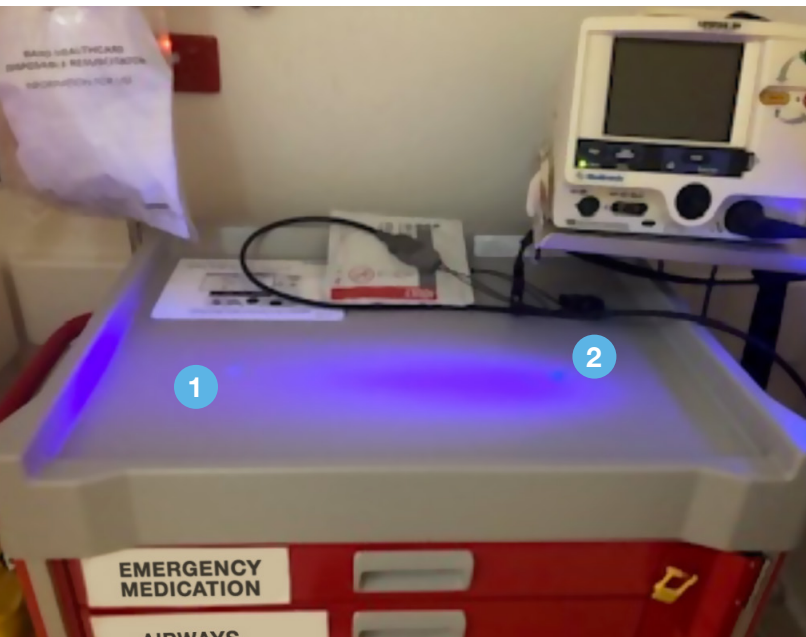
Summary

Through the introduction of several strategies an improvement in the cleaning of patient care equipment was achieved although an improvement in compliance was not able to be achieved across all pieces of equipment.

Ongoing monitoring and further education strategies are required to continue to improve cleaning compliance.

References

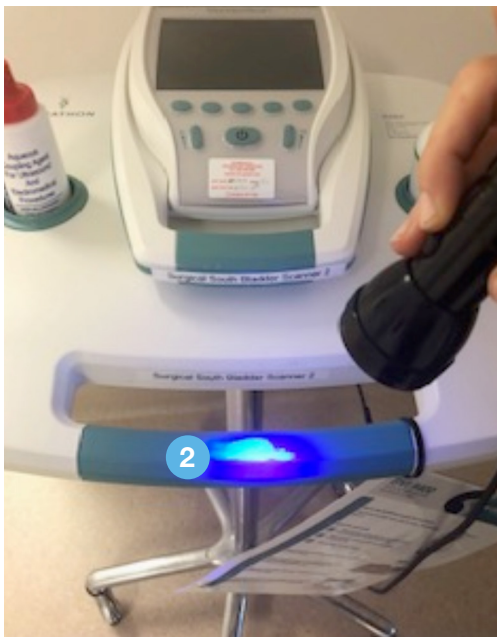
1. Queensland Government, Queensland Health. Clinical-practice/guidelines-procedures/diseases-infection-prevention/standard-precautions/cleaning-disinfecting shared patient care equipment. February 2018.
<https://www.health.qld.gov.au/clinical-practice/guidelines-procedures/diseases-infection/infection-prevention/standard-precautions/cleaning-disinfecting>



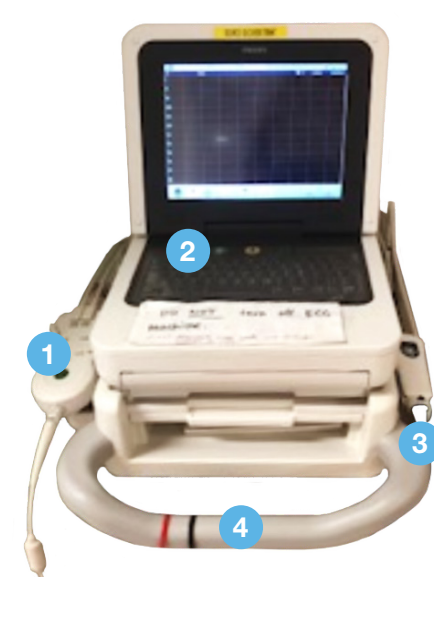
Resus trolley
2 areas marked on top of trolley
1 MARKED ON THE LEFT
2 MARKED ON THE RIGHT



Bladder scanner
2 areas marked
1 ULTRASOUND SCANNER
2 PUSH HANDLE



Blood glucose machine
1 area marked
1 FRONT PANEL



ECG machine
4 areas marked
1 LEAD HOLDER
2 ON BUTTON
3 SCANNER
4 PUSH HANDLE