

## E=MC<sup>2</sup> – An Innovative Hospital Cleaning Model Local Solutions

### Introduction

Australian and New Zealand hospitals treated 2.3 million patients in 2011-12. Of these, 55,000 experienced a Hospital Acquired Infection (HAI), which extended their stay by two weeks, requiring an additional 775,000 days of care.

The Domestic Services team in Justice Health and Forensic Mental Health Network developed a cleaning system which is effective in terms of labour, chemical usage, equipment reducing HAIs, and Work Health & Safety hazards.

### Aim

The aims of the E=MC<sup>2</sup> project included building a cohesive skilled team, implementation of a Green Cleaning program, improving infection control and reducing costs such as chemical, equipment and employee related costs.

Mop & Bucket	Pre-Soaked Micro fibre
<b>DATA ANALYSIS</b>	<b>DATA ANALYSIS</b>
<b>Bacterial Count</b> ↑ 2% increase	<b>Bacterial Count</b> ↓ 96% decrease
<b>Staff Efficiency</b> 1 staff cleaning 25 rooms/day	<b>Staff Efficiency</b> 1 Staff cleaning 35 rooms/day
<b>Chemical Cost for 25 rooms</b> \$2.64/day	<b>Chemical Cost for 25 rooms</b> \$0.015/day
<b>Saving of Chemical usage</b> Detergent 0 Toilet cleaner 0	<b>Saving of Chemical usage</b> Detergent 75% Toilet cleaner 25%
<b>Water Cost for 25 rooms</b> \$0.125/ day	<b>Water Cost for 25 rooms</b> \$0.005 /day
<b>Laundry Cost for 25 rooms</b> \$6.56/day	<b>Laundry Cost for 25 rooms</b> \$13.75/day
<b>Floor Drying Time</b> 2.5 minutes	<b>Floor Drying Time</b> 1.3 minutes
<b>Labour Cost Saving</b> 0 saving	<b>Labour Cost Saving</b> 8 hour/day

Quantitative & Qualitative data for Conventional and Green Mopping System

### Method

1. Comply with Green Cleaning system developed by the Long Bay Hospital
2. Savings made through this system will be redirected for staff skill development
3. Regular staff training
4. Pictorial manual
5. Validate cleaning by rapid bugs test
6. Employee of the month award
7. Regular meeting with staff to discuss plans and practice improvement opportunities.

### Results

The table and graph below demonstrate the outcome of E=MC<sup>2</sup>. A skilled team and innovative cleaning model has lowered the cost of input, improved staff morale and efficiencies with no HAIs.

Table 1

Cleaning efficiency	2010	2011	2012
Cleaning Material Cost %	5.9	2.7	2.03
No. of Rooms Cleaned /shift (8hrs.)	20	25	30
Ergonomic Risk %	70	30	10
Floor drying Time (min.)	3	2.5	1.3
Cleaning cost / 25 rooms	\$2.64	\$1.5	\$0.02
Water cost / 25 rooms	\$0.20	\$0.13	\$0.01
Mop Laundry cost / 25 rooms	\$6.56	\$7.80	\$13.75

Table 2

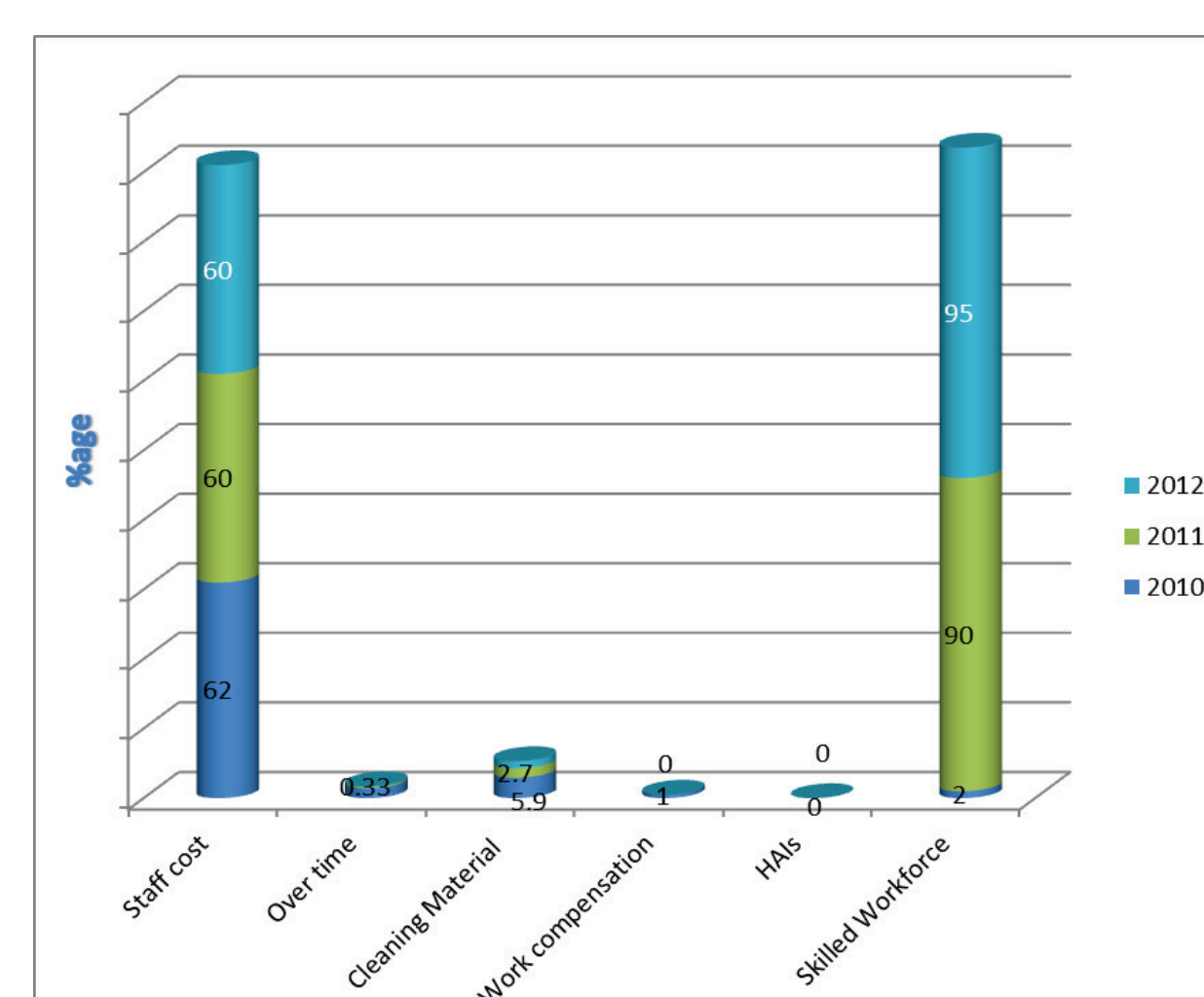
Employee related cost	2010	2011	2012
Salary cost %	62	60	60
Overtime cost %	29	0.33	0.19
Work Comp FTE	1	0	0
Skilled Staff %	2	90	95
Saving as FTE	0	0.5	1

Table 3

Infection Prevention	2010	2011	2012
Bacterial Count	2% ↑	45% ↓	96% ↓
HAIs – reported / recorded	0	0	0

The Green Cleaning system has eliminated disposing of approximately 70,000 litres of chemicals and water in the drains.

Graph: Total benefit of Cohesive Team



### Conclusion

The Long Bay Hospital has been able to demonstrate significant improvements in cleaning through standardised cleaning practices and products. The Green Cleaning model and staff training and support by EMC<sup>2</sup> is transferrable within the healthcare environment. It has proven benefits by reducing employee and equipment related costs. It also lowers infection risks, chemical and water usage, and WHS related costs.

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My cohesive & happy team - Domestic Services Staff