

E= MC² – An Innovative Hospital Cleaning Model

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Challenges of Hospital Cleaning Services

- Approximately 2.3 million patients treated in Hospitals across Australia & NZ and out of this 55,000 patients acquired HAI's. This extended their stay by 2 weeks, requiring an additional 775,000 days of care.
- HAI's rate in NSW Health is highest in Australia compared to national average and Private Health Sector.
- No standardised approach in hospitals on cleaning systems including use of equipment, chemical, monitoring and validations of effective cleaning services



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Challenges of Hospital Cleaning Services

- WorkCover claims related to the Cleaning Industry are second only to the constructions industry.
- Conventional mop & bucket have manual handling and environmental risks such as changing the water after cleaning 3-4 rooms and wasting litres of water & discarding effective chemicals in drains.
- Hospitals are a closed environment, which are full of air born pathogens, thus effective cleaning is essential to reduce HAI risks.



Aim of the project

1. To find a local and collaborative solution to improve cleaning services by standardising inputs, consultation with all stakeholders with improved environmental outcome.
2. Develop a monitoring and rapid validation system for effective cleanliness.
3. Develop a cohesive team of staff to focus on reducing HAI's by implementing agreed cleaning standards, recognition of high quality work and minimizing WHS related risks.



Scope of the project

- Build a multidisciplinary team consisting of cleaning staff, cleaning equipment & chemical suppliers, Work Health and Safety Coordinator and Infection Prevention and clinical staff.
- Divide hospital into different infection risk categories (high, medium and low risk).
- Implement a variation on Einstein's formula $E=MC^2$ to build a cohesive cleaning team to meet these challenges.
- Develop a cleaning system which meets highest cleaning, WHS and environmental standards within a limited budget.



Mopping Techniques

2010



2011



2012



Staff views on Workload

“With the old mop & bucket, my job was harder by wringing mops, lifting heavy buckets of water, pulling and pushing forces during mopping. Now my job is very easy, there are no repetitive or awkward postures or wastage of water. It enables me to clean more rooms thoroughly and external perimeters of the ward within a given time frame.”



Quoc Tran (Kenny)
Patient Services Assistant



Data of three different cleaning models

Table 1

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 2


Cleaning Cost	2010	2011	2012
Cleaning Material Cost %	5.9	2.7	2.03
No. of Room 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 3




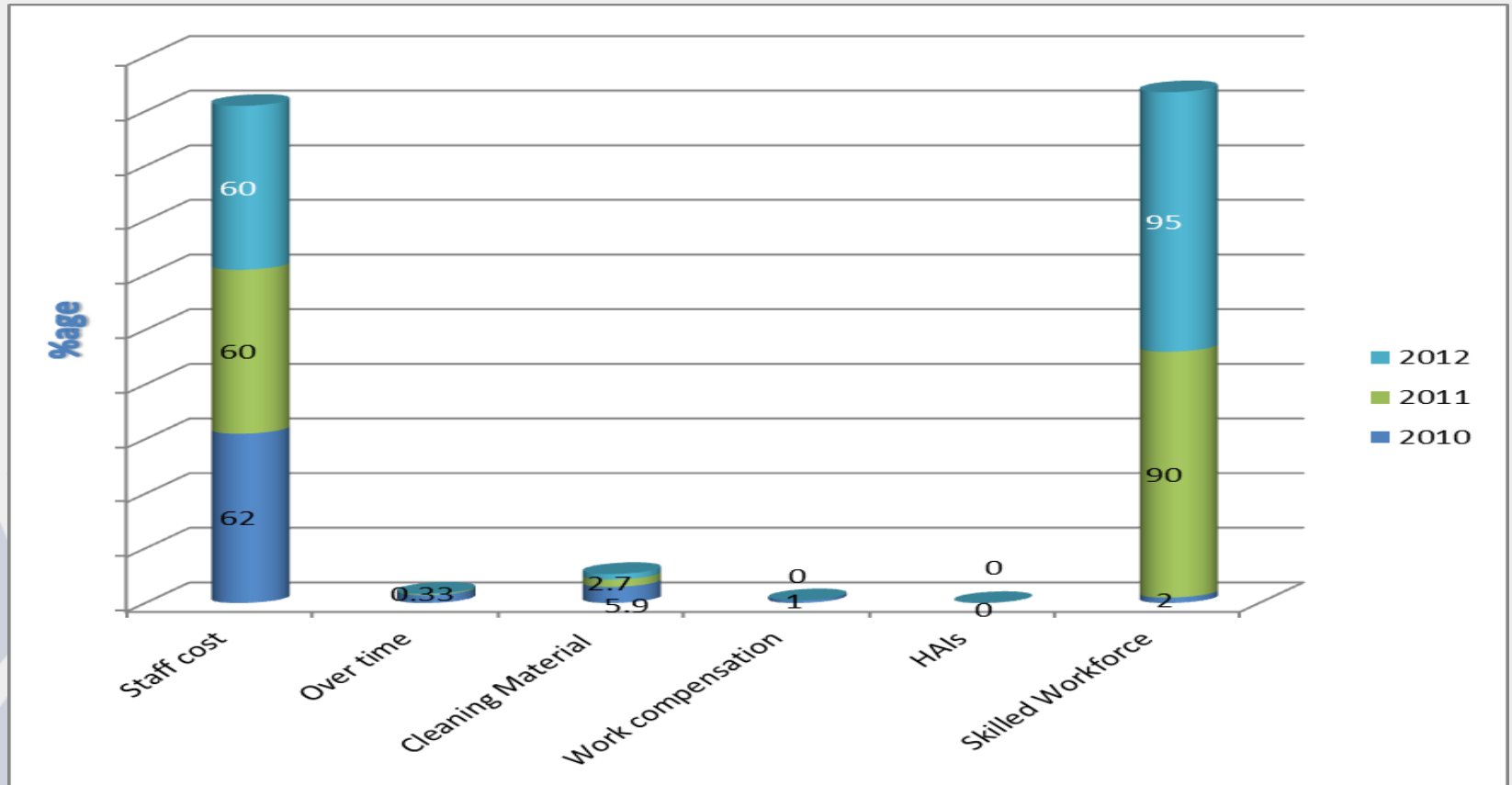
Infection Prevention	2010	2011	2012
Bacterial Count	2 % 	45% 	96% 
HAIs – reported / recorded	0	0	0

Table 4

Other	2010	2011	2012
Overall complaints from wards	5 %	3%	0.1%
Staff morale (through survey)	-10%	0	+60%

Data of three different cleaning models



Staff views on Work Health & Safety

“Green Cleaning has eliminated the risk of workplace accidents and incidents. As a result there have been no accidents in the workplace for the last 5 years. We are all trained on work health and safety related risk and management plans. For us ‘safety’ isn’t just a slogan, it’s a way of doing business.”



Paulina Tuilawa
Patient Services Assistant



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How to build a cohesive team $E=MC^2$

Effectiveness of staff = **M**ethods, **C**ompetencies and **C**redit

- This reworked equation takes into account:

E = Empowerment, education and engagement.

M = Materials (chemicals and equipment), methods, manuals (pictorial), meetings, managing risks, multi-skilling staff.

C = Communication, consultation, capabilities, cleaning check sheets.

C = Credit for hard work, creativity, competency and care.

This equation is underpinned by the Justice Health & Forensic Mental Network values and vision



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Methods

- Educated staff on cleaning services and Infection Prevention techniques.
- All cleaning tasks were standardised, balanced workload and implemented rapid microbe testing system to validate cleaning services.
- Developed a pictorial cleaning manual for staff who finds difficult to read, which included detailed instructions with pictorial cues and colour coding. This manual will assist in identifying the appropriate use of equipment, chemicals and safety procedures.
- Implemented daily cleaning audit, mandatory staff annual training on cleaning, chemical use and WHS

Staff views on Infection Prevention

“The spread of infection has been minimised through the concept of Green Cleaning’s colour coded mops and cleaning cloths for the wards and kitchen areas. These mops and cleaning cloths are visibly marked with ward names and laundered separately. Our Cleaning Check sheet further assists us to clean critical areas of ward on daily basis.”



Barbara Balemans
Patient Services Assistant



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Future Scope

Factors of Hospital Cleaning



*Presented at the Health Roundtable
Achieving Best Practice in Health Service Cleaning
18 & 19 April 2013*

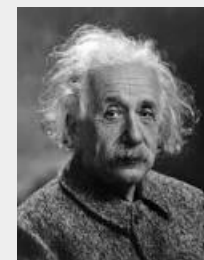
- The Green Cleaning system will continue to reduce the risk of HAIs in an environmentally safe way. It will also assist in releasing more bed days for patient care
- The Green Cleaning model, staff training and support through $E=MC^2$ is transferrable within the healthcare environment.
- The staff engagement in decision making or improvement projects related to cleaning services will improve efficiencies and lower the infection rates.
- Cleaning Services need to be continually measured by an effective monitoring procedure.



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Memorable Quotes

- *“To act intelligently in human affairs is only possible if an attempt is made to understand the thoughts, motive, and apprehensions of the people you meet so fully that one can see the world through their eyes.” - Albert Einstein*
- *“Nothing in life is to be feared, it is only to be understood.” - Marie Curie*



Green Cleaning

www.archi.net.au/resources/safety/infection/green-cleaning



www.justicehealth.nsw.gov.au



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