

ST JOHN OF GOD HEALTH CARE SUBIACO – ORGANISATIONAL CHANGE TO DELIVER SUSTAINED ECO-EFFICIENCY

SUMMARY

St John of God Health Care Subiaco instigated Cleaner Production initiatives through a major organisational change and the introduction of an Environmental Management System in May 2002, which through Caregiver participation has succeeded in reducing energy water and waste costs, and as a result has helped preserve the environment.

BACKGROUND

St John of God Health Care (SJGHC) Subiaco is one of Australia's largest private hospitals and is a recognised market leader in the provision of clinical services and pastoral care. With a 481 bed capacity, SJGHC Subiaco is a comprehensive health care facility providing a wide range of clinical specialities, and easy access to a range of on-site diagnostic services. These include radiology, MRI, pathology, lithotripsy, nuclear medicine, laser and colposcopy, obstetric and gynaecological ultrasound, medical imaging and a cardiac and vascular intervention laboratory.

Facilities in the hospital include a 9-bed intensive care unit, day surgery unit, day of surgery admission, 6 delivery suites, a birthing unit, conference centre and a state of the art medical clinic.

The SJGHC Subiaco is joint winner of the inaugural WA Environment Awards 2002, and finalist in WA Environment Awards 2003, the Banksia Environment Awards 2003, and United Nations Association Australia World Environment Day Awards 2003.

They are the first health care organisation to become a signatory to the WA Cleaner Production Statement, and are participants to the Greenhouse Challenge.

THE PROCESS

Unlike industrial operations that typically have a few large volume waste streams, hospitals generate different volumes of a wide variety of wastes and emissions.

Apart from patient care, the hospital performs a number of other functions including transportation, food services, cleaning, heating/cooling, education, and sterilisation of surgical equipment.

The table below illustrates some of the major hospital functions involved in the administration of hospital care to patients with principal inputs and outputs associated with each one.

PROCESS	INPUTS	OUTPUTS
Air comfort Cleaning Maintenance	Gas, electricity, R22, water, biocides, anticorrosion chemicals, filters, sterilising chemicals, laundry chemicals, cleaning chemicals, fluorescent tubes, petrol, paint, building materials, batteries, mobile phones, pagers etc.	Heat, air emissions, wastewater, general waste, noise, industrial waste to sewer, chemicals to sewer, fluorescent tubes, building waste, batteries, discarded hardware, etc.
Administration	Paper, computers, files	Paper, confidential waste, packaging, computer parts, cardboard waste, general waste
Patient care Operative & drug treatment Rehabilitation	Beds, medical equipment, water, silver, radiochemicals, developing chemicals, liquid gases, medical and anesthetic gases, dressing packs, syringes, sharps, IV fluids, drugs, steam, kim guard, disposable instrumentation, disposable linen, disposable nappies	Discarded beds and medical equipment, wastewater, silver, wet waste, air emissions, heat, clinical waste, mercury, odours, general waste, PVC/IV and other bags, hazardous waste
Goods supplies	Paper, petrol, electricity, packaging, diesel	General waste, paper waste, packaging, oil, air emissions
Catering	Food supplies, electricity, water, packaging	Organic waste, general waste, cooking oils, cardboard, packaging, various containers

CLEANER PRODUCTION INITIATIVES

In 2001 an environmental audit carried out by a third party and an input/output inventory was completed by two staff members attending a Cleaner Production training module, run by the Centre of Excellence in Cleaner Production at Curtin University of Technology. Both these exercises highlighted numerous potential opportunities for improving environmental performance and achieving significant savings.

The Hospital Executive Committee then implemented organisation structural changes to ensure that environmental issues were supported at all levels. These changes featured the expansion of the Occupational, Safety and Health portfolio to include Environment; the formation of a Corporate Risk Committee to identify environmental and workplace risk areas; and the appointment of an Environmental Coordinator to facilitate leadership in the area of environmental responsibility.

All Cleaner Production initiatives were introduced by the implementation of a major organisational change process, resulting in the promotion of the "Environmental Action Strategy". The Strategy had a dynamic launch in May 2002. The green tree frog was chosen as the mascot and Caregivers dressed up in frog and rubbish bag costumes, handing out frog lollies and information brochures, to create awareness of the Strategy to close to 1600 Caregivers.



Environmental training was provided to managers, Caregivers, volunteers and contractors. New Caregivers and contractors undergo an *orientation day* program, which includes an environmental module about workplace responsibilities and

opportunities for contribution. All nurses are involved in a clinical waste training aimed to reduce the volume of waste unnecessarily going to incineration.

Each department in the organisation has an environmental representative who coordinates environmental activities and looks after the Department Environmental Awards submissions designed to promote departmental initiatives on a monthly basis. Three judges are involved in the decision process and the winners are pictured and presented on the hospital's notice board as well as being rewarded with a trophy with lollies as recognition from the management. The introduction of Departmental Environmental Awards was strongly supported by the organisation's CEO, who personally presents the award at the manager's monthly meetings.



Numerous Cleaner Production initiatives have been initiated as outlined below.

Material Efficiency and Waste Reduction

Reusable versus Disposable

- Disposable blankets are no longer used in the operational suite. They have been replaced with reusable cotton blankets.
- Reusable laryngeal masks are used instead of an alternative disposable product. This saves 18,250 masks per year.

Recycle and Reuse

- Glass, office paper, cardboard, newspaper, scrap metal, plastic, aluminium cans, steel cans, cartons and plastic film are collected in designated recycling bins located in all departments throughout the hospital.
- Toner cartridges, aluminium can ring tabs, corks and batteries are recycled.
- Approximately 35 tonnes of grease, fat, and oils are collected and reused as stock feed each year.
- Office bin plastic liners are changed only if soiled, instead of previous daily change practice.
- Garden waste is mulched on site and used on the hospital grounds.
- Some of the food scraps (recycling is limited due to infection control issues) from food preparation are composted on site or fed to worm farms and used to fertilise garden beds.



- The purchase of a cardboard compactor has resulted in increasing the volume of cardboard being recycled by 380%.
- Items such as equipment, computers, trolleys, and beds are collected for reuse in hospitals in developing countries.
- The material used for wrapping sterilised theatre packs is being reused in veterinary clinics.

Paper

- Personnel have been educated on the methods for duplex printing and collecting paper for recycling.
- In order to reduce the use of copy paper a new photocopier machine with a duplex printing option have been introduced as a main photocopier for the hospital.



A number of departments have succeeded in reducing paper use by up to 50%.

- Old printers are being replaced with new ones featuring double sided printing.
- Committee meeting minutes and agendas are e-mailed instead of being printed and distributed as hard copies.
- The organisation is using 50% recycled paper for copy, fax and printing.

Other initiatives

- Clinical waste is a biomedical material, and includes sharps and infectious material, cytotoxic and pharmaceutical waste. This waste must be destroyed by incineration to prevent risk of infection. A major educational program has been implemented to raise the awareness of the need to reduce the amount of unnecessary waste placed in clinical waste containers. Since the introduction of the educational program clinical waste volumes have decreased by approximately 8-18%.
- Non- recyclable general waste is compacted to reduce its volume before being disposed of to landfill.



Cardboard compactor

Energy Efficiency

- In 1998 the hospital built a 1.2MW electrical capacity co-generation plant. It has 86% operating efficiency and reduces the demand on the local grid by 1 MW or 50% of the total electrical demand. Generated heat and steam are used in a variety of processes throughout the hospital, such as heating and sterilising.



- 2.5 % of the electricity supplied by Western Power from its "Green Power" renewable energy sources



- "Energy-wise" stickers have been placed on light switches throughout the hospital, reminding employees to turn off lights. As a result of this initiative the total energy consumption has remained at the same level as year 2002, despite an increase in utilised floor space (which increased energy demand by 3%). However, gas consumption has dropped by 18% between 2001-2003 and electricity consumption has dropped by 2% over the same period.
- Lighting circuits have been re-wired to enable the division of rooms into sections, controlled by separate light switches. Corridor lights now only have every second light in operation.
- Newly installed parking ticket machines are solar powered.

Water Conservation

- The gardens around the hospital have been planted with many native plants to reduce need for sprinklers. The lawns are planted with a variety of couch that requires less watering and fertiliser in comparison with other varieties.
- A Getinge steriliser was installed in June 2003 – the first of five to be installed. This steriliser has three times the capacity of the Atherton sterilisers currently in use. It is six times more water and energy efficient, and each unit will save over 3 million litres of water per year.
- An educational program has been delivered to Caregivers to promote using less water during hand washing.
- Dual flush toilet systems have been installed throughout the hospital.

BENEFITS

- Increase in Caregiver morale and participation in the Environmental Action Strategy (EAS). Since the EAS was launched:
 - 96% of survey respondents reported being more environmentally friendly at work.
 - 53% are more environmentally friendly at home.
 - 30% have encouraged others to be more environmentally friendly.

- 95% recycle their waste.
- Blankets – saved \$285,000 per year and has diverted tonnes of waste from landfill.
- Recycling program has diverted over 125 tonnes pa of waste from landfill (20% of total waste). The income from cardboard recycling offsets the cost of recycling.
- Clinical waste - reduced by 8-18% pa resulting in savings of \$2,700-6,000 per year.
- Getinge Sterilising Unit – saving 3 million litres of water and approximately \$2,500 per year.
- Energy savings – avoided an additional \$35,000 of energy costs, which were anticipated with the increase in utilised floor space within the hospital.

INCENTIVES

St John of God Health Care Subiaco strives for excellence in all aspects of its business. Cleaner Production initiatives were introduced to achieve financial savings as well as to fulfil their mission of bringing healing to the community through sound environmental management.

CHALLENGES

The first challenge was to gain support from the Hospital Management Committee for the environmental initiative. Two Caregivers completed the Cleaner Production course, where significant potential savings were identified. These savings were included in a proposal for the implementation of an Environmental Management System, which was presented and accepted by the Committee. The Cleaner Production training participants made the innovative proposal to reinvest the expected savings in a new Environmental Coordinator position to drive the realisation of initiatives.

The next challenge was to begin the culture change amongst hospital Caregivers. Various means of promotion were used to encourage Caregivers to give consideration for the environmental impact of every day work, including:

- The establishment of the Environmental Action Team (with Environmental Representatives from every department around the hospital)
- Setting up an environmental noticeboard
- Sending out Environmental Tips of the Week via e-mail
- Establishment of Departmental Environment Awards & prizes
- Training provided to managers, new Caregivers, nurses, contractors & volunteers
- Celebrating national environmental events

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