



World Hospital Congress Side event: Global Green and Healthy Health Systems

Case studies from members of Global Green and Healthy Hospitals in South Africa

Edendale Regional and District Hospital Pietermaritzburg, KwaZulu Natal

The issue

The hospital was recording a large number of patients defaulting on the anti-retroviral treatment regimes, due to issues of poverty and stigmatization. Additionally, a large number of children from the community which the hospital serves were being admitted as a result of malnutrition. This severely affected lifelong health outcomes as well as disease progression.

Upon the inception of the project in 2014 and with the support of the Global Green and Healthy Hospitals Initiative from July 2016, Edendale Regional and District Hospital has successfully begun to tackle this issue.

The goal

Global Green and Healthy Hospital Goal: Food management

Hospital's Goal: To target the socio-epidemiological drivers of the progression of HIV in hospital patients on anti-retroviral medication, by encouraging the development of sustainable food gardens and the promotion of environmental health practices.

The rewards

Through mainstreaming the Global Green and Healthy Hospital's goal on better food management, Edendale Regional and District Hospital has made huge progress towards achieving its goal. There has been:

- Over 90 food gardens established in patients' homes and at the hospital.
- Over 1739 HIV positive patients that have not defaulted on their anti-retroviral treatment regime.
- An 85% drop in admission rates in patients involved in the programme.
- Noticeable improvements in patients in terms of weight gain and general emotional well-being.
- Opportunities for patients to support themselves financially by selling produce to community members and hospital staff.

For more information

Nerisha Gobind

Head of the Social Services Department, Chairperson of the Women's Forum and Chairperson of the Green Committee – Edendale Regional and District Hospital.

Tel: 072 570 5440

Email: narisha.gobind@kznhealth.gov.za

**Grey's Hospital
Pietermaritzburg, KwaZulu Natal**

The issue

From the inception of Grey's Hospital in 1984, the residents of the Doctor's Quarters were not billed for electricity consumption. The electricity consumption cost was added to the overall municipal bill and therefore, there was no responsibility placed on the residents themselves to conserve electricity. Consequently, the hospital was not only paying more than necessary for electricity but also contributing to climate change, as South Africa's electricity is generated from coal combustion.

Upon the inception of the project in January 2016 and with the support of the Global Green and Healthy Hospitals Initiative from May 2016, Grey's Hospital has successfully begun to tackle this issue.

The goal

Global Green and Healthy Hospital Goal: Energy consumption reduction.

Hospital's Goal: To create awareness among hospital staff and patients of the negative impacts of high electricity usage and to improve the monitoring of energy consumption by the hospital generally and more specifically Doctor's Quarters. This, in order, to reduce energy consumption, cost and ultimately, reduce carbon dioxide emissions that cause climate change.

The rewards

Through mainstreaming the Global Green and Healthy Hospital's goal on energy consumption reduction, Grey's Hospital has made huge progress towards achieving its goal. There has been:

- A reduction of electrical consumption (per kWh) over 220 000 kWh between January and June 2016.
- A reduction of the maximum voltage demand from 4617kVA to 3500kVA needed from the municipality.
- A reduction in the hospital's maximum electricity demand realized a projected saving of over R270 000 per annum.
- A reduction in Eskom's coal-fired generating capacity, thereby emitting less carbon dioxide and other greenhouse gases.

For more information

Shireen Arends

Quality Assurance Manager – Grey's Hospital

Tel: 079 549 6705

Email: shireen.arends@kznhealth.gov.za

**Inkosi Albert Luthuli Central Hospital
Durban, KwaZulu Natal**

The issue

The hospital has a Reverse Osmosis Plant that supplies Reverse Osmosis (RO) water to the Renal Dialysis machines in the wards. By the nature of its operation, the RO plant rejects 90% of the water that enters the machine. This waste water flows down the waste pipes to the sewerage system.

Upon the inception of the project in 2014 and with the support of the Global Green and Healthy Hospitals Initiative from July 2016, Inkosi Albert Luthuli Central Hospital has successfully begun to tackle this issue.

The goal

Global Green and Healthy Hospital Goal: Water consumption reduction.

Hospital's Goal: To quantify the amount of water leaving the RO unit and find a system to reduce water consumption by the hospital in order to reap the relevant financial, environmental and human health benefits.

The rewards

Through mainstreaming the Global Green and Healthy Hospital's goal on water consumption reduction, Inkosi Albert Luthuli Central Hospital has made huge progress towards achieving its goal. There has been:

- Identification of the areas known to use large volumes of water.
- Installation of a water meter to quantify the amount of water leaving the RO unit.
- A pilot phase where the RO waste water has been pumped to the condensate tank from where it has been pumped to the Boiler House Hotwell Tanks.
- A massive reduction in water usage by the hospital.

For more information

Dr Thandeka Khanyile

CEO – Inkosi Albert Luthuli Hospital

Tel: 082 463 3653

Email: Thandeka.Khanyile@kznhealth.gov.za

Port Shepstone Regional Hospital

Port Shepstone, KwaZulu Natal

The issue

The hospital was experiencing a shortage in space for the general waste material. Additionally, it did not have a proper plan for waste management in place. Research conducted by the Waste Management Officer at the hospital indicated that hospital staff were not aware of the importance of recycling.

Upon joining the Global Green and Healthy Hospitals Initiative in July 2016, Port Shepstone Regional Hospital was supported to tackle this issue.

The goal

Global Green and Healthy Hospital Goal: Waste management

Hospital's Goal: To promote the development of recycling projects among hospital staff and patients in order to reduce the waste that goes to landfill and the hospital's environmental footprint.

The rewards

Through mainstreaming the Global Green and Healthy Hospital's goal on better waste management, Port Shepstone Regional Hospital has made huge progress towards achieving its goal. There has been:

- Significant reduction in the waste generated and transported to landfill sites.
- Hospital staff reporting extending the practice of recycling to their homes.
- Potential for future cost savings and revenue generated from waste recycling.

For more information**Gounden Deenadayalan**

Systems Manager – Port Shepstone Regional Hospital

Tel: 084 582 9428

Email: Deenadayalan.Gounden@kznhealth.gov.za

Groote Schuur Hospital

Cape Town, Western Cape

The issue

The functioning of the boiler house and the steam reticulation was inefficient and in need of a complete overhaul and modernization. In order to keep up with the hospital “steam demand,” the boiler house was running two 8 ton boilers at 6 tons of coal per hour in winter and 4.5 tons per hour in summer. This was deemed to be excessive as the history of steam production showed that it was possible to provide all of the hospital steam requirements with only one boiler “on-range” at a time. Heavier steam loading on the boilers equaled more coal consumed producing more smoke and soot which polluted the surrounding areas with visible and invisible particulate matter.

Upon joining the Global Green and Healthy Hospitals Initiative in 2014, Groote Schuur Hospital was supported to tackle this issue.

The goal

Global Green and Healthy Hospital Goal: Energy consumption reduction.

Hospital’s Goal: To improve the hospital’s infrastructure, in order to reduce wastage of energy. This, in order to, reduce energy costs to the hospital and ultimately, reduce carbon dioxide emissions produced during the combustion of coal for electricity.

The reward

Through mainstreaming the Global Green and Healthy Hospital’s goal on energy consumption reduction, Groote Schuur Hospital has made huge progress towards achieving its goal. There has been:

- A saving of 48% to the hospital as the consumption of coal has decreased between 2009 and 2015, as a result of changes being initiated to the infrastructure of the boiler house and the steam lines.
- A significant environmental benefit as less coal is used for the amount of steam required to ensure that the hospital operates efficiently and effectively. This means less carbon emissions and also as a result of the increased reticulation efficiency, less water is used to produce steam and as a result, less water treatment chemicals.
- An increased health benefit, as there is a reduced physical load on the staff in the boiler house as well as the possible reduction of respiratory ailments of the people living and working in the surrounding neighbourhoods, who stood to be affected by coal-based pollution.
- A reduction of steam leakages, water consumption, water treatment, less spent on maintenance, fewer shutdowns and lower electrical consumption of the boiler house.

For more information**Denton Smith**

Head of Engineering – Groote Schuur Hospital

Tel: 072 869 7238

Email: Denton.Smith@westerncape.gov.za

Netcare Limited

National

The issue

Lighting typically accounts for on average 18% of hospital electrical energy usage, which implies that across the Netcare Limited portfolio, the energy cost of lighting could be as much as R40m per year. The lighting retrofit solution aims to address inefficient luminaires, with the design selected to solve for the lowest possible life cycle cost, while optimising maintenance and safety considerations.

Upon joining the Global Green and Healthy Hospitals Initiative in May 2014, Netcare Limited – which comprises of 53 sites – was supported to tackle this issue.

The goal

Global Green and Healthy Hospital Goal: Energy consumption reduction.

Hospital's Goal: The national lighting project was aimed at reducing the electricity used by the hospital, in order to decrease the cost and also reduce the carbon dioxide emissions produced.

The rewards

Through mainstreaming the Global Green and Healthy Hospital's goal on energy consumption reduction, Netcare Limited has made huge progress towards achieving its goal. There has been:

- An estimated saving of 13 458 378 kWh per annum or 48.4% of current usage. This is equivalent to a saving of R 12 112 540 at the assumed current national average tariff of R0.90/kWh.
- A decrease in the cost of energy by replacing existing technology – which is also translated into the inefficiency of the light output produced for the amount of energy required –with newer lighting technology. This will typically deliver a payback of less than five years.
- An improvement to the appearance and aesthetic appeal of the lighting in the hospitals, by using newer lights since many of the current fittings are in poor condition.
- The elimination of a fire hazard posed by fitting types which employ magnetic ballasts.

For more information

Johan Durand

Environmental Sustainability Manager – Netcare Limited

Tel: 082 693 1338

Email: Johan.Durand@netcare.co.za