

# ISO14001:2004 Environmental Management System

**Benefits of an Environmental Management System in the  
Management of a Hospital:**

*Experience of the Past 12 years*

*Francois Bester*



**23rd Congress of the International Federation of  
Hospital Engineering (IFHE)**

October 13th-16th, 2014

UCA Puerto Madero - Buenos Aires – Argentina



**What ISO?**



- **205 countries in the world.**
- **162 countries' National Standards Institutes are members.**
- **Based in Geneva, Switzerland**



Instituto Argentino de Normalización y Certificación (IRAM)



Instituto Uruguayo de Normas Técnicas



South African Bureau of Standards





**International Standards give state of the art specifications for products, services and good practice, helping to make industry more efficient and effective.**

**And the organization responsible for many thousands of the standards which benefit the world is**

**ISO.**

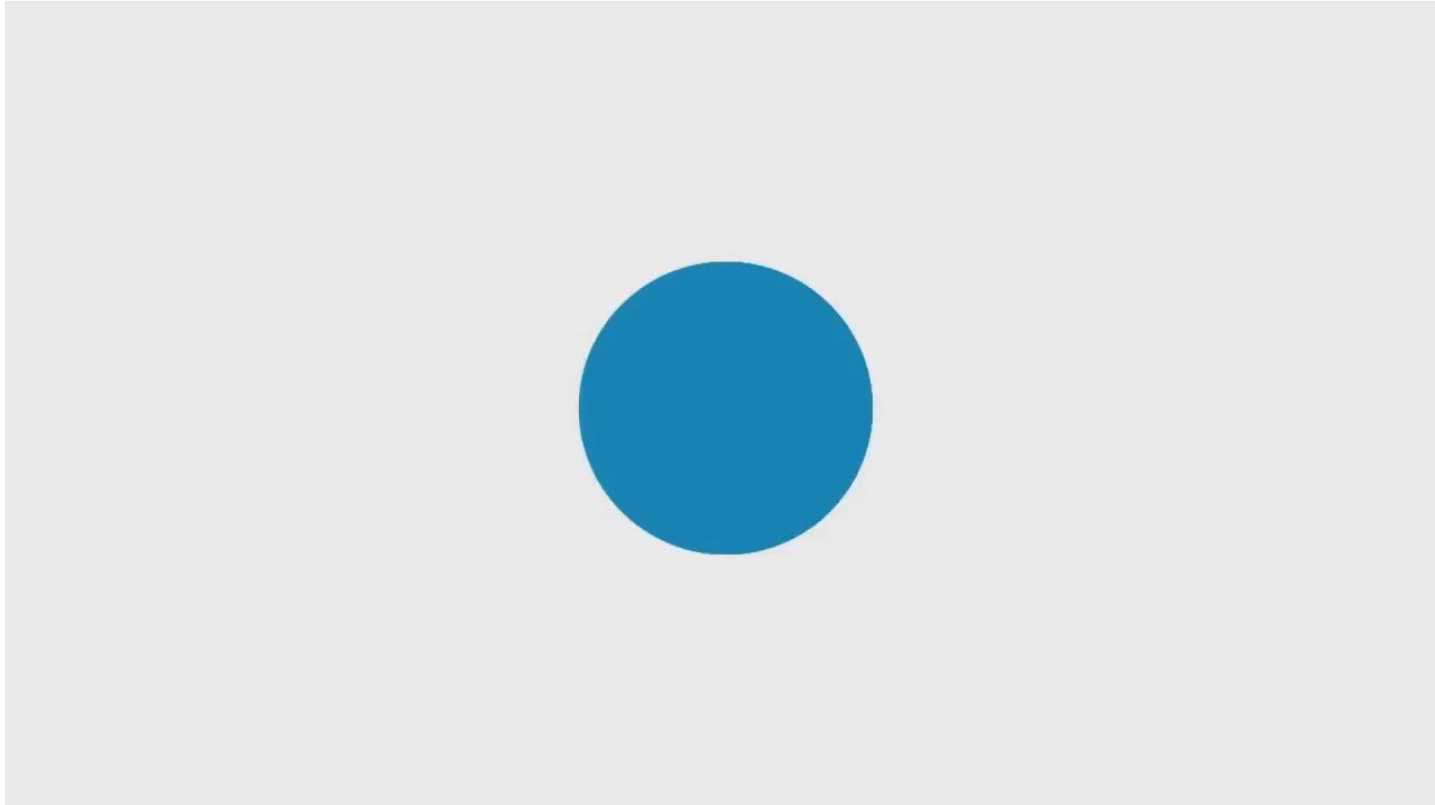
**What ISO 14001?**

## **Environmental Management System that ensures:**

- **Structured approach to identify environmental risks**
- **To put in place a system that ensures legal requirements and standards are met**
- **To nullify or reduce the impact of such risks**

**Globally at the end of 2012;  
284,844 companies had their  
ISO 14001 Environmental Management System  
certified**

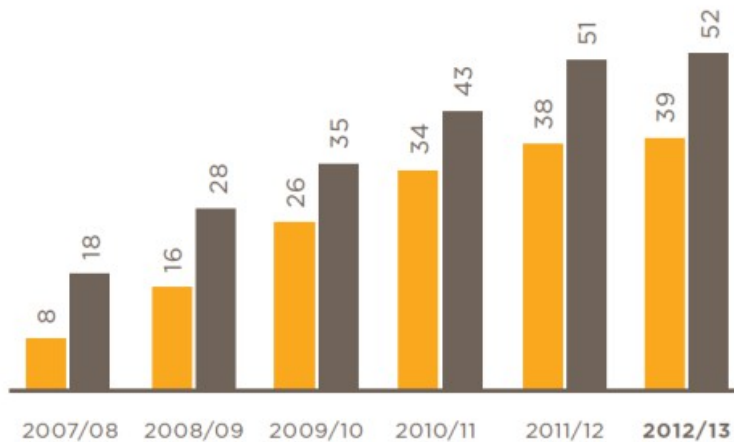
## Who is Mediclinic?



# What was the original purpose?

## LEGAL COMPLIANCE

**FIGURE 29:** ISO 14001:2004 CERTIFIED AND TRAINED HOSPITALS – MEDICLINIC SOUTH AFRICA

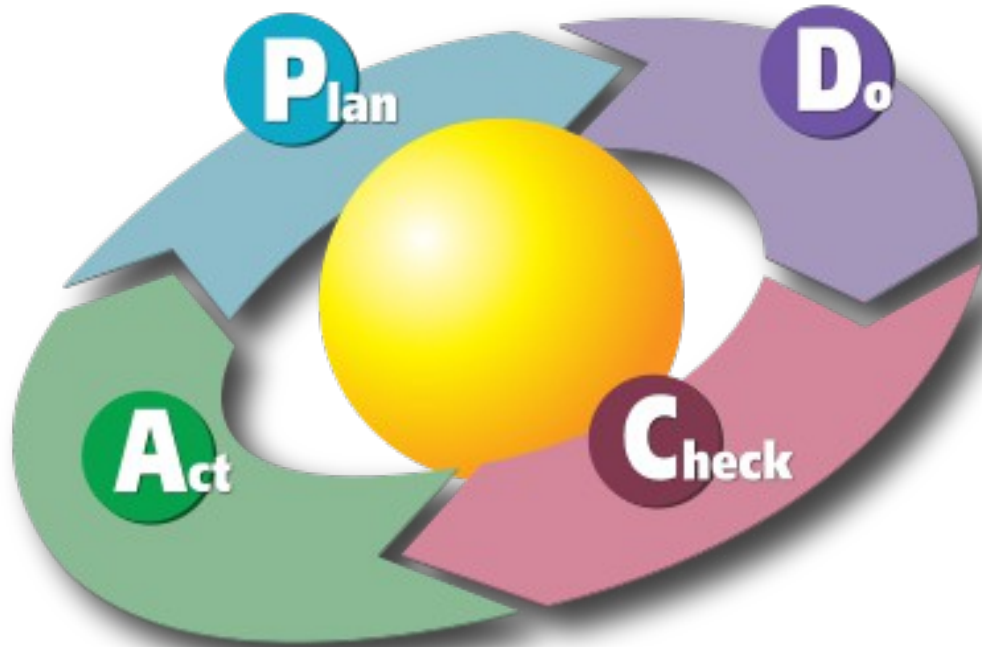


- Started in 2002
- Evaluation period 2002-2006
- Original x8 hospitals certified
- System paid for itself

- ISO 14001 2004 certified and trained hospitals (including the certified hospitals)
- ISO 14001 2004 certified and trained hospitals



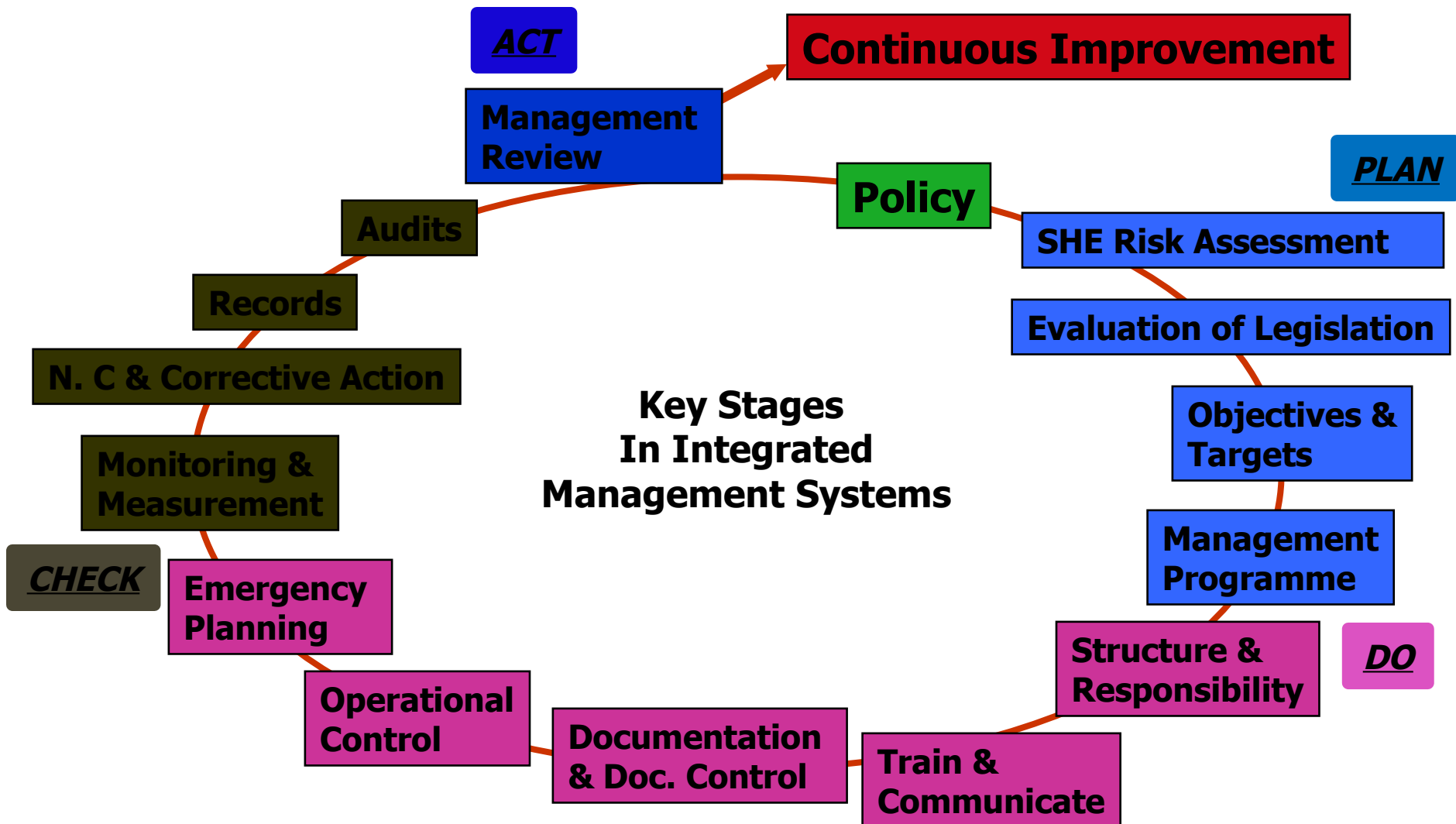
**How does ISO 14001 works?**



## Deming cycle

- Continuous improvement
- Closed loop system
- Never ending story

# How does the ISO 14001 system works?



## Environmental impacts in a hospital

<b>Electricity</b>	<i>Technical Manager</i>
<b>Water</b>	<i>Technical Manager</i>
<b>Medical Waste</b>	<i>Clinical Risk Manager / Nursing Manager</i>
<b>Paper</b>	<i>Patient Administration Manager</i>
<b>Gases</b>	<i>Technical Manager</i>
<b>Hazardous Waste</b>	<i>Pharmacy Manager</i>
<b>Equipment</b>	<i>Financial Administration Manager</i>
<b>Chemicals/Cleaning materials</b>	<i>Pharmacy Manager / Housekeeping Manager</i>
<b>Emissions</b>	<i>Technical Manager</i>
<b>Normal Waste</b>	<i>Clinical Risk Manager / Nursing Manager</i>
<b>Fuels</b>	<i>Technical Manager</i>
<b>Building Projects</b>	<i>Technical Manager</i>
<b>Climate Change</b>	<i>Hospital Manager</i>
<b>Biodiversity</b>	<i>Hospital Manager</i>

- Responsibilities are located according to original work profiles or applicable legislation.

## **Type of audits done under ISO 14001?**

Type of audits	By whom	Time to do audit
External Certification	- NQA London	- 1 day/hospital in 3 years
Legal Compliance	- IPS Remgro	- 1 day/hospital in 3 years
System GAP	- Corporate Office - SHEQ	- 1 day/hospital/year (excluding external audit year)
Aspect Legal Survey	- Corporate Office – CURA	1 day/hospital/year
ISO Internal	- Hospital – ISO team	- 2 mornings/hospital/year

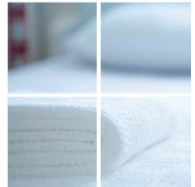
**Total time spend on audits = 3 - 4 days/year**

**System time management of 4 hours every three months**



**What did Mediclinic Southern Africa learned  
from using ISO 14001?**

1. **Emergency Preparedness**
2. **Legal Compliance**
3. **CURA Risk Management**
4. **Health Care Risk Waste Handling**
5. **Companies Act** (social, financial, environmental)
6. **King Report III – Sustainability**
  - a) **Social Responsibility Investment Index (SRI)**
  - b) **Global Reporting Initiative (GRI G3)**
  - c) **Carbon Disclosure Project (CDP)**
  - d) **Water Disclosure Project (WDP)**
7. **Cost Saving**





# Functional emergency preparedness

## Nature of Emergency

Fire Mockdrill:

Fire break out in Surgical ward room 23

## Observations and remarks

1. When received the message of fire, the staff reaction was slow due to shock.
2. Staff didn't know where to start first
3. Night staff not responding to emergency as they are ready to go home after 07h00

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2 Hours



# Sustainability



*"Town days without water"*

## ISO 14001:2004

### Benchmarking

Aspect	Unit	Excellent	Average	High
Electricity	kWh/bed day	56	88	145
Water	litres/bed day	431	638	1024
Paper	pages/bed day	16	21	28
Gases	kilogram/bed day	1.30	1.90	2.70
Medical Waste	kilogram/bed day	1.02	1.20	1.61

# 7 Days without water!

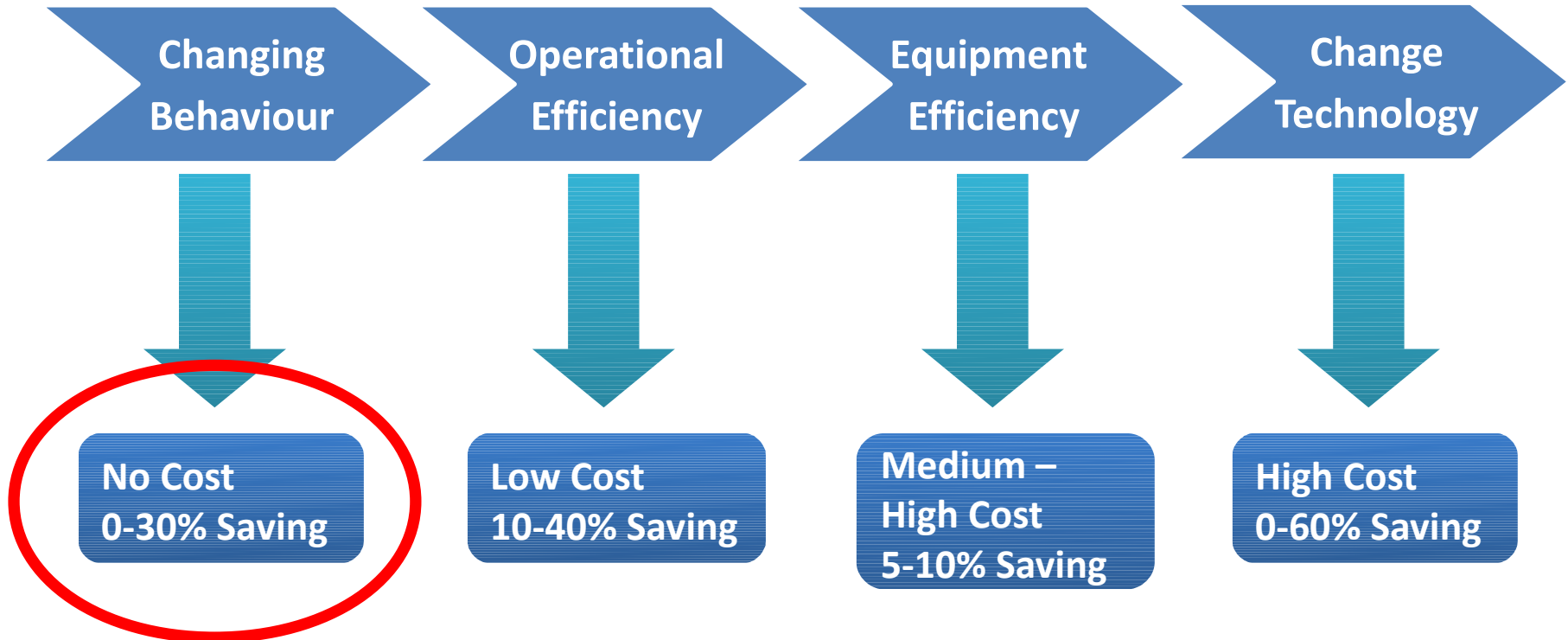
Can your hospital survive for 7 days?

Water contingency plans?

## HOSPITAL POLICY

**Emergency Water Procedures**

# Human behaviour and cost saving



Through the effective implementation and management of an EMS that meets the criteria of ISO 14001:2004, the organisation **improves on cost management and operation efficiency.**

Cost saving of 15% on electricity is achievable, 30% questionable  
Behavioural change is possible and sustainable

# Cost Savings

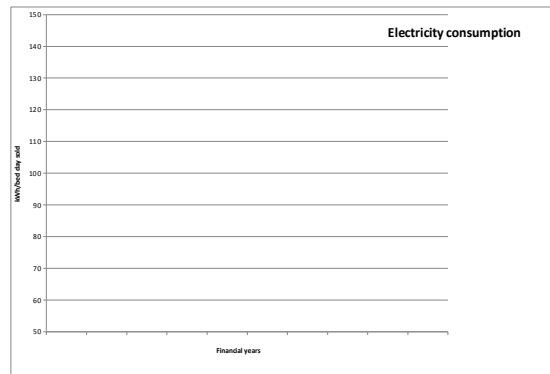
*(For the financial year 2007/2008)*

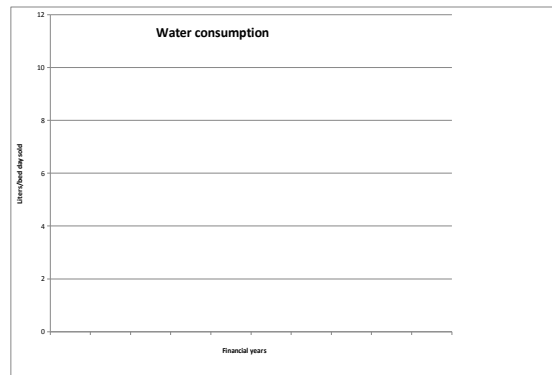
- *Baseline year was the financial year 2006/2007*
- *No new technology was implemented*
- *No energy efficiency program was in place*

Environmental Aspect	% Saving
Electricity	13.45
Water	19.20
Paper	43.88
Health Care Risk Waste (HCRW)	32.00
Normal Waste	50.00
(HCRW) Pharmaceutical Waste	68.00

- Behaviour savings only

- **Integrated impact of:**
  - Behaviour change
  - New technology





# Carbon Disclosure Project 2014

## Interesting facts?

	Total Mediclinic Southern Africa bed days sold covered by report	Total beds in operation at Mediclinic Southern Africa	Total Mediclinic Southern Africa full-time employees (FTE's)	Total square metreage (m2) of hospitals reported
<b>FY 2009/10</b>	1 602 061	6 556	13 352	570 106
<b>Difference increase</b>	48 568	143	69	21 130
<b>FY 2010/11</b>	1 650 629	6 699	13 421	591 236
<b>Difference increase</b>	50 851	173	431	6 897
<b>FY 2011/12</b>	1 701 480	6 872	13 852	598 133
<b>Difference increase</b>	61 460	32	495	10 678
<b>FY 2012/13</b>	1 762 940	6 904	14 347	608 811
<b>Difference increase</b>	105 536	259	607	34 244
<b>FY 2013/14</b>	1 868 475	7 163	14 954	643 055

# Carbon Disclosure Project 2013

## Interesting facts?

Our overall electricity consumption in terms of kWh used **decrease** despite growth in our business in terms of increased bed days sold, full-time employees, square meterage and operational beds.

This was achieved through initiatives with regards to improved **operational efficiency of technical installations** and **behaviour change of staff** within the group

Electricity consumption decrease by 3 million kWh, this is **a reduction of 2% in total electricity consumption** although there was an **increase of 3.6% in bed days sold**.

The electricity consumption per bed day sold **decrease by 5.4%** to 85 kWh.

The total electricity consumption for the financial year 2012/2013 was 149 146 MWh.



## Carbon Disclosure Project 2014

### Interesting facts?

The total electricity consumption at Mediclinic Southern Africa hospitals **increased** with **0.222%** during the financial year, however the intensity figure of electricity consumption per bed day sold **decreased** by **5.76%**.

During the financial year there was an increase in bed days sold, beds in operation, number of full-time employees and square metre coverage during the reporting period.

The hospitals in Mediclinic Southern Africa is **maintaining an intensity reduction** for each financial year.

The electricity consumption intensity **decreased** from 85 kiloWatt hours to **80 kiloWatt hours** per bed day sold.

The total electricity consumption for the financial year 2013/2014 was 149 478 MWh.



## *Our Quality*

Our commitment to the environment

With this in mind, Life Healthcare has compiled an **environmental policy** and is embarking on the implementation of an Environmental Management System, commencing 2013 over the next three years.



**You're in safe hands**

**CORPORATE GOVERNANCE  
ENVIRONMENTAL POLICY  
POLICY NUMBER SUST1**

APPROVED BY	CORPORATE GOVERNANCE
PREPARATION DATE	AUGUST 2012
ISSUE DATE	JULY 2013

## **6.1 PLANNING**

Netcare shall ensure the availability of resources to establish, implement, maintain and improved the environmental management system and that these resources are sufficient to achieve the objectives of the environmental plan. The environmental management system will comply with the requirements of the ISO 14001 code of practice for environmental management systems.

No. 36849

GOVERNMENT GAZETTE, 20 SEPTEMBER 2013

**GENERAL NOTICES**

**NOTICE 943 OF 2013**

**DEPARTMENT OF HEALTH**

**NATIONAL NORMS AND STANDARDS RELATING TO ENVIRONMENTAL HEALTH IN TERMS OF  
NATIONAL HEALTH ACT, 2003 (ACT NO 61 OF 2003)**

The Director-General of the National Department of Health intends to set norms and standards for environmental health, in terms of Chapter 3, Section 2(a)(ii) of the National Health Act, 2003 (Act 61 of 2003).

Interested and affected parties are invited to submit any substantiated comments or representations on the proposed Norms and Standards to the Director-General: Health, Private Bag X 828, Pretoria, 0001 (for the attention of the Director: Environmental Health), within one (1) month from the date of publication of this notice.

The norms and standards document is accessible from the Department of Health's website [www.doh.gov.za](http://www.doh.gov.za) (link: resource centre-legislation-documents for comments), or by Email: [mutavr@health.gov.za](mailto:mutavr@health.gov.za), Tel: 012 395 8524/21.



**DR A MOTSOALEDI, MP**  
**MINISTER OF HEALTH**  
**DATE: 19/08/2013**

## Awards received

2011

2010



2008



2010



2012





# Awards received

2013



# Johannesburg Stock Exchange

Social Responsibility Index Rating



2013

Result	ENVIRONMENTAL			
	Impact	Policy	Systems	Reporting
Best practice	Low	Met	Met	Met

Result	SOCIAL	
	No. of core indicators (total possible = 39)	No. of desirable indicators (total possible = 49)
Met	37	39

Result	GOVERNANCE & RELATED SUSTAINABILITY CONCERNS	
	No. of core indicators (total possible = 32)	No. of desirable indicators (total possible = 33)
Met	32	33

Result	CLIMATE CHANGE
Best performer level	

# What can you do?

You need to move!



**Environmental Issues?**  
**Climate Change?**



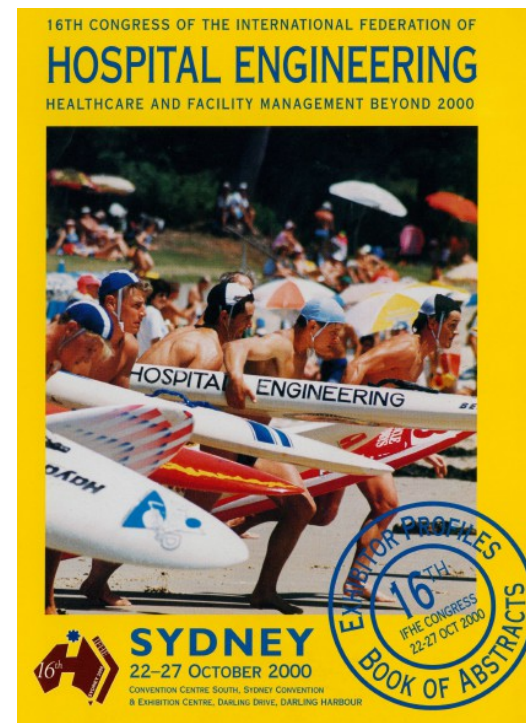
# Reputation of the Healthcare Industry

The nature, scale and complexity of healthcare facilities are such that their potential and actual impacts on the environment are by no means insignificant. Healthcare facilities are generally perceived as a place of healing, a service industry that most communities traditionally have welcomed as clean and desirable, not a source of pollutants that are directly or indirectly potential causes of illness. However, their environmental impact is becoming increasingly significant and destructive. The clean image is now becoming tarnished.

*Bruce Clark, New Zealand*

*16th Congress of the International Federation of Hospital Engineering  
26 October 2000*

- Healthcare facilities impact no means insignificant
- Healthcare facilities perceived place of healing
- Healthcare facilities clean image now becoming tarnished





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Technical Specialist: SHEQ

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# THANK YOU



**23rd Congress of the International  
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**(IFHE)** 13th-16th, 2014  
UCA Puerto Madero - Buenos Aires – Argentina

*Compiled by:*

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