



**CLINICAL
SERVICES
REPORT 2016**

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This Clinical Services Report is published as part of a set of reports by Mediclinic International plc (“**Mediclinic**”) in respect of the financial year ended 31 March 2016, all of which are available on the Company’s website at www.mediclinic.com.



Annual Report and Financial Statements 2016



Clinical Services Report 2016



Sustainable Development Report 2016



Notice of Annual General Meeting 2016

GLOSSARY

Please refer to the **glossary** of terms included in the Annual Report and Financial Statements of Mediclinic for the financial year ended 31 March 2016.



CONTACT US

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INTRODUCTION

Mediclinic experienced a busy and eventful year, and delivered satisfactory clinical performance over a broad range of services. The Group made good progress on strategic clinical objectives despite facing a number of challenges. This report summarises the most important characteristics of each platform, reports on clinical performance for the calendar year 1 January 2015 to 31 December 2015, and summarises the Group's progress against clinical strategic objectives.

Mediclinic provides a wide range of hospital-related clinical services throughout its operating platforms. This includes outpatient consultation services and pre-hospital emergency services, hospital-based emergency centres, day case surgery, acute care inpatient services, and highly specialised services. Support services include laboratory, radiology, and nuclear medicine.

When reviewing clinical performance please bear in mind that:

- the scope of services and model of delivery of each platform differ significantly between the platforms, and
- all indicators are reported per calendar year to ensure completeness and consistency, as a significant time lag needs to be provided for in the collection of clinical data.

Subsequent to the Combination of Mediclinic International Limited and Al Noor Hospitals Group plc, the Board has established a Clinical Performance and Sustainability Committee, which assists the Board in, as far as it relates to its clinical performance duties:

- monitoring the clinical performance of the Group;
- evaluating patient safety, infection prevention and control ("**IPC**") performance and quality improvement performance;
- evaluating compliance with the Company's patient safety and quality clinical care standards, policies and procedure and regulation and accreditation standards at the operating platforms; and
- evaluating the annual Clinical Services Report and other publicly reported clinical content.

The Committee has reviewed and approved this report on 23 May 2016. The Committee's report is included in the **Annual Report**.



MEDICLINIC SOUTHERN AFRICA

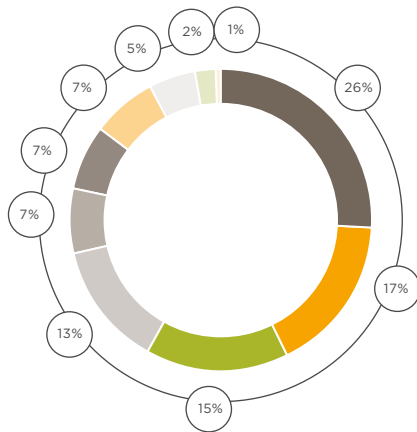
OVERVIEW

Mediclinic Southern Africa offers acute care hospital services in all 52 facilities and emergency services in 46 of its facilities throughout South Africa and Namibia, and acute rehabilitation services in a facility in Pretoria. ER24 offers emergency transportation services from its 43 branches throughout South Africa.

The hospital services range from routine procedures and medical treatment plans provided in 15 smaller secondary care community hospitals, to complex and technologically advanced treatment modalities provided in 34 larger tertiary care city hospitals, as well as highly specialised and transplant medicine provided in three quaternary care hospitals. The majority of cases are elective in nature, but a significant portion is unscheduled, emergency and trauma related. Admitting doctors, excluding emergency care specialists within certain emergency centres, are self-employed and practise independently. Radiology, laboratory and oncology services are also provided by independent practices.

Figure 1 illustrates the contribution per clinical discipline in terms of the number of patients admitted to Mediclinic Southern Africa's hospitals in 2015.

FIGURE 1: SPECTRUM OF SERVICES – MEDICLINIC SOUTHERN AFRICA (2015)



- Internal Medicine
- General Surgery
- Obstetrics and Gynaecology
- Orthopaedics
- Urogenital
- ENT and Ophthalmology
- Cardiac and Vascular
- Neurology
- Oral and Maxillofacial
- Other

The burden of disease of the Southern African population consists mainly of communicable (infectious) diseases of which HIV and pulmonary TB are prominent, followed by chronic diseases and trauma. In the medical scheme population, as a subset of the general population, chronic diseases are more prominent, followed by communicable diseases and trauma.

The proportion of patients who were admitted to the group's hospitals with chronic underlying medical conditions in 2015 remained at 30%, and 61% of adult patients admitted were overweight or obese. Hypertension, diabetes mellitus and hyperlipidaemia were the most common underlying chronic conditions.

The case mix index calculated for the annual report is a relative comparison of the case weight between the three platforms. To do the comparison, the Clinical and Cost Related Groupings ("CCRG") was applied to the data of each platform.

The case mix index of Mediclinic Southern Africa for 2015 was 1.23 compared to 1.51 for Hirslanden and 1.06 for Mediclinic Middle East. The inpatient length of stay measured in calendar days of Mediclinic Southern Africa for 2015 was 4.0 compared to 5.0 days for Hirslanden and 3.1 for Mediclinic Middle East.

Leadership is indispensable in the promotion of quality and safety of patient care. Therefore, Mediclinic Southern Africa reorganised its clinical departments at corporate office into one multidisciplinary team, and appointed clinical specialists in the areas of theatre management, critical care, obstetrics and neonatology. The multi-disciplinary clinical hospital committees drive quality and safety and promote cooperation between doctors, nursing staff and management at hospital level.

Quality and safety of patient care are reliant on a well-trained, skilled and experienced healthcare workforce. Mediclinic Southern Africa is developing its performance surveillance and continuous professional development capabilities, and the company spends approximately 3.6% of payroll on training annually.

CLINICAL PERFORMANCE

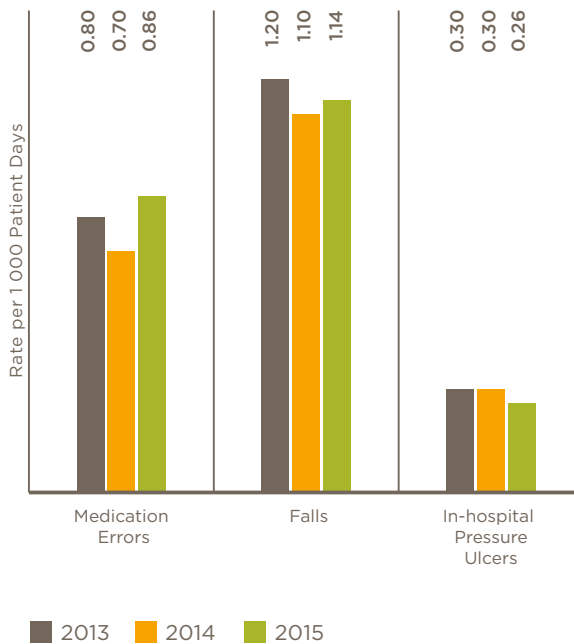
PATIENT SAFETY

The numerous treatment plans that are executed in each hospital every day consist of countless interdependent and interrelated clinical care processes that by their nature are prone to errors. Hospitals face many clinical risks, the most prominent of which are healthcare-associated infections and hospital adverse events. These and other clinical risks are managed through different control measures and continuous process re-engineering.

Adverse events

There were no significant changes in the incidence of medication errors, falls and pressure ulcers (all grades are included and reported on **Figure 2**).

FIGURE 2: ADVERSE EVENTS - MEDICLINIC SOUTHERN AFRICA (2013 - 2015)



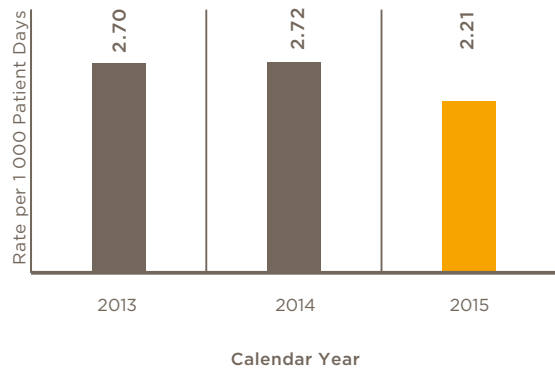
INFECTION PREVENTION AND CONTROL

Healthcare-associated infections

Healthcare-associated infections (“**HAIs**”) remain a major challenge due to the significant worldwide increase in antimicrobial resistance. As a result infection prevention and control is a key performance indicator and hospitals are focused on this aspect of their operations.

Mediclinic Southern Africa experienced a significant decrease of 18% in the overall HAI rate in 2015 as a result of a strong focus on infection prevention and control. **Figure 3** reflects the HAI rate per 1 000 patient days, in line with international reporting trends. Mediclinic Southern Africa replaced the previous infection prevention and control surveillance system in October 2015 with a more sophisticated version that enables improved reporting. The surveillance methodology also changed to make provision for the 14-day surveillance period for resistant organisms as recommended by the US Centres for Disease Control and Prevention instead of the previous seven-day period.

FIGURE 3: HEALTHCARE-ASSOCIATED INFECTIONS - MEDICLINIC SOUTHERN AFRICA (2013 - 2015)



MEDICLINIC SOUTHERN AFRICA (continued)

Mediclinic Southern Africa is focusing on three initiatives to reduce HAIs. The first initiative is an active and ongoing participation in the national *Best Care... Always!* campaign. The campaign focuses on the prevention of surgical site and three types of device-associated infections, and Mediclinic Southern Africa is striving to ensure that best practices are reliably implemented for all patients who are ventilated, have indwelling urine catheters or central line catheters, or who undergo surgery.

The second initiative involves the promotion of the rational use of antimicrobials through a comprehensive antimicrobial stewardship programme. The percentage of Mediclinic Southern Africa hospitals with active antimicrobial stewardship teams increased from 49% in 2012 to 80% in October 2014 and remained stable during 2015. These teams are multi-disciplinary who meet regularly and test ideas to improve the rational use of antimicrobials.

Figure 4 illustrates the sustained reduction in device-associated infection rates and **Figure 5** illustrates the surgical site infections ("SSI") in 2015 compared to 2013 and 2014. There was a significant decrease of 22% in ventilator-associated pneumonia ("VAP") in 2015 due to improved adherence to the VAP bundle.

FIGURE 4: DEVICE-ASSOCIATED INFECTIONS – MEDICLINIC SOUTHERN AFRICA (2013 - 2015)

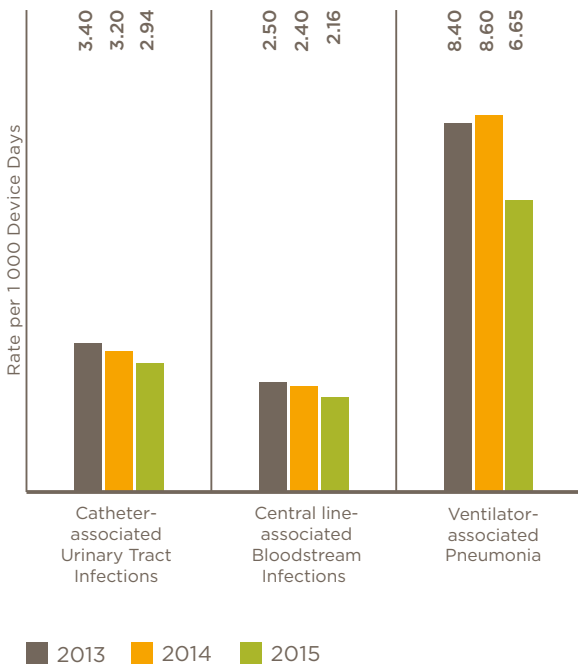
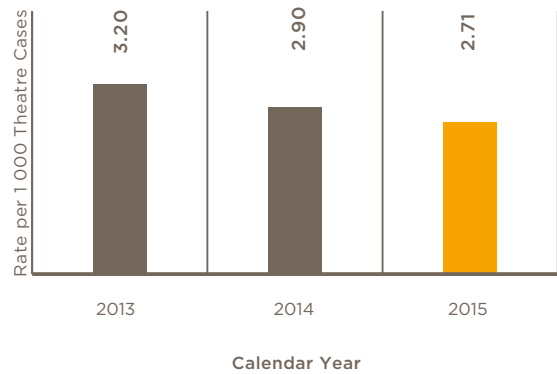


FIGURE 5: SURGICAL SITE INFECTIONS – MEDICLINIC SOUTHERN AFRICA (2013 - 2015)



The significant improvement continued in the declined usage of undesired drug choices for surgical prophylaxis in 2015. There was an 11% reduction to that of 2014. This can be attributed to the availability of more specific international, and national, surgical prophylaxis guidelines as well as the continuous focus on this indicator from the hospital antimicrobial stewardship teams. The number of days on four or more simultaneous antimicrobials decreased by 5% (2.70 per 1 000 patient days to 2.57 per 1 000 patient days) from 2014 to 2015. There was no significant improvement in the number of patient exposures on longer than seven days of therapy. This is a complex measure as duration of therapy is impacted by the clinical complexity of cases and type of infection. Therefore a high prevalence of immune-compromised patients or infections due to multidrug resistant organisms will influence this indicator.

The third initiative focuses on the improvement of hand hygiene to prevent the transmission of infections. Hand hygiene compliance of all healthcare workers is continuously monitored, and was 76% for 2015.

Figure 6 reflects the most prominent antimicrobial utilisation indicators.

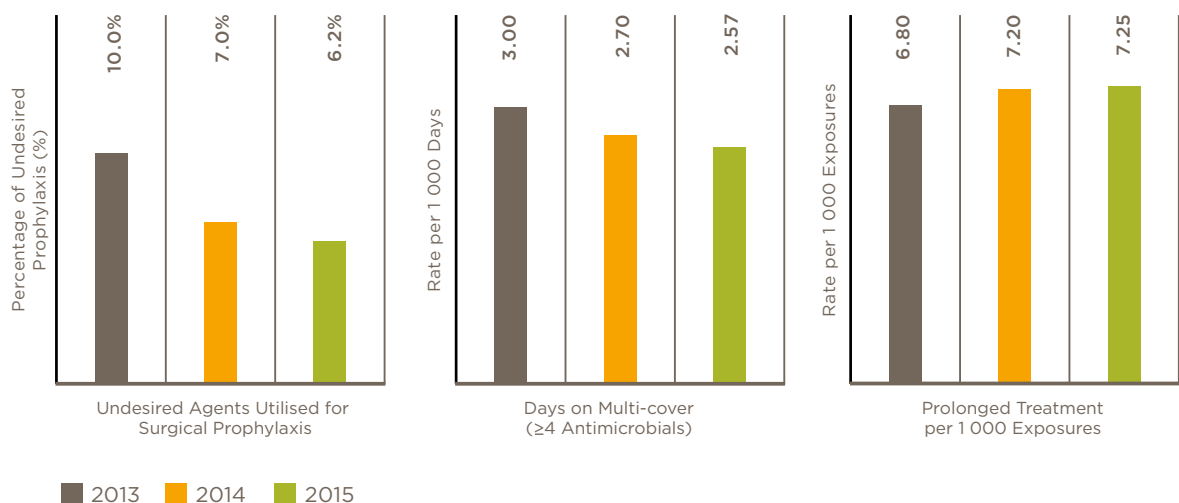
CLINICAL EFFECTIVENESS

Clinical performance is measured and reported on monthly. A number of internal and external measures are used to measure current performance and inform quality improvement projects. Mediclinic Southern Africa strives to look at clinical outcomes that are important to patients and include structure, process and outcome measures.

One of the constraints for the internal development of clinical performance measures is the availability of sufficient volumes of accurate and reliable data. The availability of information and clinical risk guides the selection of indicators and outcome measures. Internally developed indicators can often not be compared with published benchmarks or figures from other organisations due to differences in data structures, definitions and criteria. But, they are valuable for internal benchmarking and trend analyses. Examples include the mortality rates, re-admissions and adverse events indicators reported by all three operating platforms, and the extended stay indicator reported by Mediclinic Southern Africa.

When participating in external initiatives, organisations have to collect data according to strict, agreed-upon criteria. The data from the different organisations are then combined, external benchmarks calculated and comparisons made. Examples include the Vermont Oxford Network ("VON") in neonatal critical care, of which hospitals from Mediclinic Southern Africa and Mediclinic Middle East are members.

FIGURE 6: ANTIMICROBIAL UTILISATION INDICATORS - MEDICLINIC SOUTHERN AFRICA (2013 - 2015)



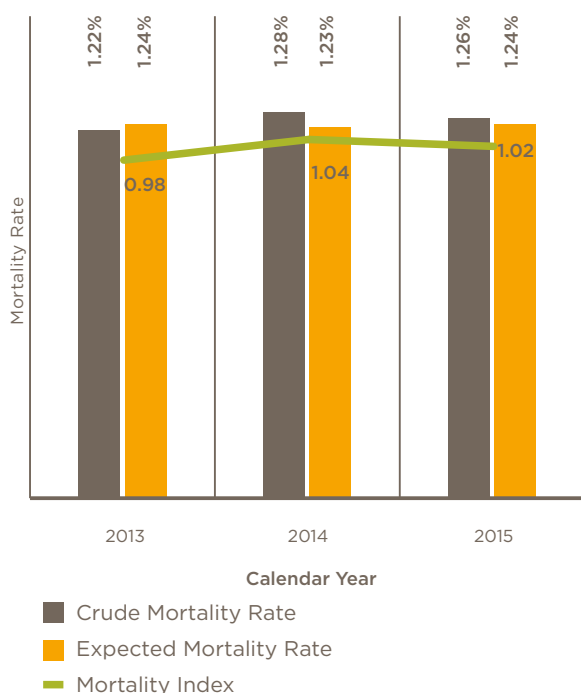
MEDICLINIC SOUTHERN AFRICA (continued)

MORTALITY

Mortality is one of the most important indicators for determining quality care. Mediclinic Southern Africa uses a statistical methodology to adjust hospital mortality rates for a number of risk factors (e.g. age, gender, comorbidities) to make justifiable comparisons between hospitals and reporting periods. The expected mortality is a statistical calculation that takes the above-mentioned patient risk factors into consideration. The mortality index is the actual mortality in relation to the calculated expected mortality. **Figure 7** reflects the inpatient mortality rates.

There has been a decrease in the inpatient mortality index (from 1.04 in 2014 to 1.02 in 2015). The decrease shows an improvement; however, it is desirable for this index to be as low as possible with a target of less than 1. The statistical model underestimates the expected mortality rate in more complex cases with a higher predicted rate and may lead to a higher mortality index in hospitals with more critically ill patients. The refinement of the model remains a priority.

FIGURE 7: INPATIENT MORTALITY - MEDICLINIC SOUTHERN AFRICA (2013 - 2015)



ADULT CRITICAL CARE MORTALITY - APACHE® IV

The APACHE® IV physiological mortality prediction model has been used by Mediclinic Southern Africa since 2013 to improve critical care services. A total of 18 220 cases were scored in 66 critical care units at 40 participating hospitals, and the mortality index decreased from 1.45 in 2014 to 1.35 in 2015 due to an increased focus on critical care unit ("CCU") practices (**Table 1**).

During 2015, the suitability of the APACHE® IV methodology to measure critical care unit outcomes in the Southern African context was evaluated, and a decision was made to change to the more appropriate Simplified Acute Physiology Score (SAPS) 3 in 2016.

TABLE 1: APACHE® IV MORTALITY INDEX - MEDICLINIC SOUTHERN AFRICA (2013 - 2015)

	2014	2015
Cases	18 958	18 220
Average age of patients (years)	60.9	61.1
Number of mortality cases	3 071	3 022
Mortality rate (%)	16.2%	16.6%
APACHE® IV expected mortalities (cases)	2 115	2 235
APACHE® IV expected mortality rate (%)	11.2%	12.3%
APACHE® IV mortality index	1.45	1.35
Average CCU length of stay (days)	4.7	4.6
Average APACHE® IV expected CCU length of stay (days)	4.3	4.4
APACHE® IV CCU length of stay index	1.08	1.04
Average APACHE® IV score	45.3	47.1
Average acute physiology score ("APS") score	34.6	36.2
Number and percentage of ventilated cases	3 308 (17.4%)	3 671 (20.1%)

* APACHE® is a registered trademark of Cerner Corporation, Kansas City, Missouri, USA

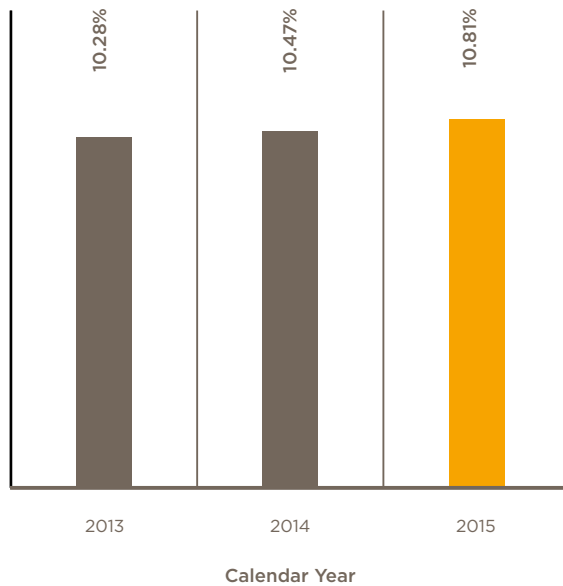
EXTENDED STAY

The extended stay indicator measures the percentage of cases with hospital stays that exceeded a calculated extended stay point, and is regarded as a proxy measure for quality of care. The extended stay point was calculated as the 90th percentile of hospital stays for each admission type over the past three calendar years. As this calculation is performed on a three-year rolling period, the nominal figures may differ from reports of previous years.

The percentages provided are unadjusted, and may reflect patient demographics, comorbidity profiles and complications. This indicator was developed internally, and comparable external benchmarks are therefore not available.

Figure 8 reflects the overall extended stay rate for Mediclinic Southern Africa, which increased slightly in 2015.

FIGURE 8: OVERALL EXTENDED STAY RATE - MEDICLINIC SOUTHERN AFRICA (2013 - 2015)

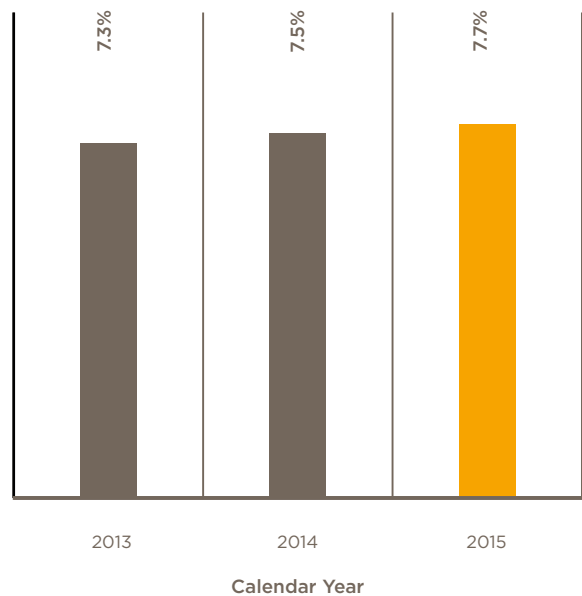


RE-ADMISSION

The re-admission indicator calculation is based on the number of patients re-admitted to hospital within 30 days of discharge. This includes scheduled (planned) as well as unscheduled (unplanned) re-admissions, but it is the latter that are important as they represent late complications of initial admissions. Because of the nature of available Mediclinic Southern Africa information, it is impossible to distinguish accurately between planned and unplanned admissions. However, the methodology used in calculating this indicator does exclude certain admission types with a high percentage of predictable planned re-admissions. For example, cataract surgery (one eye followed by the next), haematology, chemotherapy, antepartum admissions and sleep studies. Although still an incomplete science, re-admission is generally accepted as one of the proxy measures for quality of care if used as a trend indicator.

Figure 9 reflects the 30-day re-admission rate for all hospital admissions. The overall re-admission rate increased during 2015. The indicator was developed internally and comparable external benchmarks are not available.

FIGURE 9: RE-ADMISSION RATES - MEDICLINIC SOUTHERN AFRICA (2013 - 2015)



MEDICLINIC SOUTHERN AFRICA (continued)

ADULT CARDIO-THORACIC SURGERY

The Adult Cardio-thoracic Database (“ACTD”) is modelled on the database of the Society of Thoracic Surgeons in the United States. The primary aim of this initiative is to measure and improve the clinical outcomes of cardio-thoracic surgery. It has been used in some Mediclinic Southern Africa hospitals with cardio-thoracic centres since 2005.

Table 2 reflects the ACTD clinical outcomes. Comparable international figures are not freely available, hence the year-on-year comparisons.

TABLE 2: GENERAL INDICATORS AS PERCENTAGE OF CASES – MEDICLINIC SOUTHERN AFRICA (2013 – 2015)

	2013	2014	2015
Post-operative outcomes			
Infections	2.2%	3.7%	5.2%
Re-operation	4.3%	2.8%	6.5%
Mortality			
Expected mortality (EuroSCORE)	12.8%	11.8%	10.0%
Actual mortality	4.1%	4.6%	3.6%
Mortality index	0.32	0.39	0.36
Re-admission (within 30 days)	9.5%	8.3%	8.0%

The mortality index (actual/expected) for 2015 is slightly lower than the 2014 index. The re-operation rate increased significantly during 2015, mainly because of a 3.8% increase in post-operative bleeding. The 2015 infection rate increased marginally due to a 0.9% increase in leg infections. The re-admission rate decreased marginally during 2015. The database remains a valuable tool in support of quality improvement.

NEONATAL CRITICAL CARE – VERMONT OXFORD NETWORK

The VON is an international initiative aimed at improving the quality of care of newborn infants. The network was established in 1988, with more than 900 centres currently participating around the world. Mediclinic Southern Africa has been participating in the initiative since 2001, with 24 centres currently involved. Although all infants admitted to participating neonatal CCUs are included in the programme, this report focuses on all infants eligible for the very low birth weight (“VLBW”) database (infants with birth weights between 401 and 1 500 grams or gestational ages between 22 weeks and 29 weeks). The reported performance measures have been changed to bring the measures in line with the “Key Performance” measures reported on by VON. The reported conditions in the “Key Performance” measures contribute to the long-term clinical outcomes of the infants and are used in the calculation of the “Death or Morbidity” measure.

Mediclinic Southern Africa treated 4 364 infants in the 2015 birth year, of whom 608 infants qualified for the VLBW database with an average birth weight of 1 124 grams. At the time of this report a number of these infants were still hospitalised.

TABLE 3: AVERAGE BIRTH AND DISCHARGE WEIGHT OF QUALIFYING VLBW INFANTS – MEDICLINIC SOUTHERN AFRICA (2015)

	MEDICLINIC SOUTHERN AFRICA	VON 2014
Average birth weight	1 124 grams	1 057 grams
Average discharge weight	2 408 grams	2 546 grams

Figure 10 reflects the average birth weight, gestation age and number of admissions for VLBW infants.

The number of admissions for the VLBW infants based on gestation age assumes a normal distribution with a peak between 28 and 29 weeks. The statistics for 2015 are compared with the official VON annual report figures for 2014. The VON annual reports are only available six months after the year end, and the 2015 report was therefore not available to be included in this report.

Figure 11 reflects the key performance measures over the past three calendar years for Mediclinic Southern Africa as a percentage of cases.

The “Death or Morbidity” measure measures the number of infants that died or suffered one or more complications that have an influence on the long-term prognosis of the patient. For example, a number of conditions such as necrotising enterocolitis, retinopathy of prematurity, chronic lung disease, pneumothorax, infections and intraventricular haemorrhage (“**IVH**”) are included in the measure. The rate of any late infections and severe IVH have increased year on year.

FIGURE 10: AVERAGE BIRTH WEIGHT, GESTATION AGE AND ADMISSIONS FOR VLBW INFANTS - MEDICLINIC SOUTHERN AFRICA (2015)

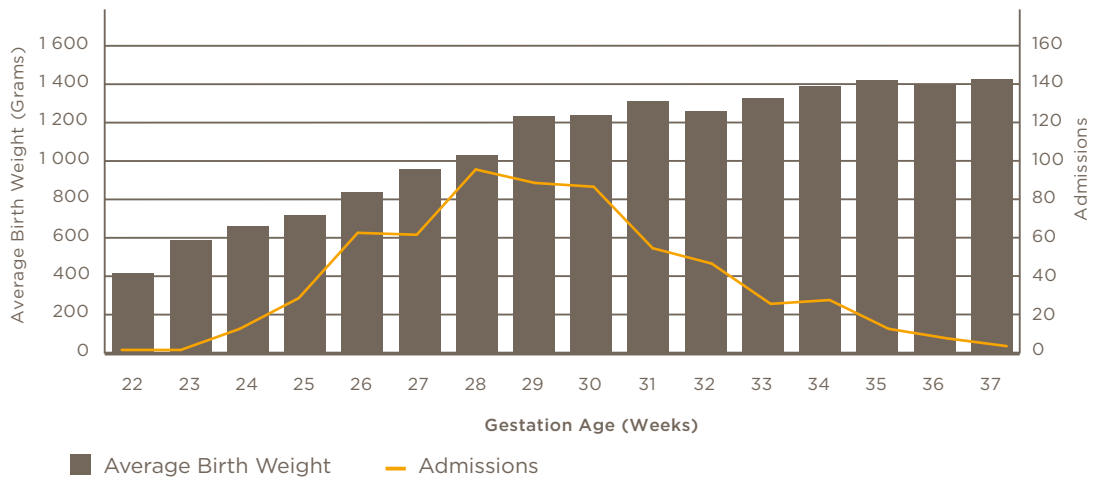
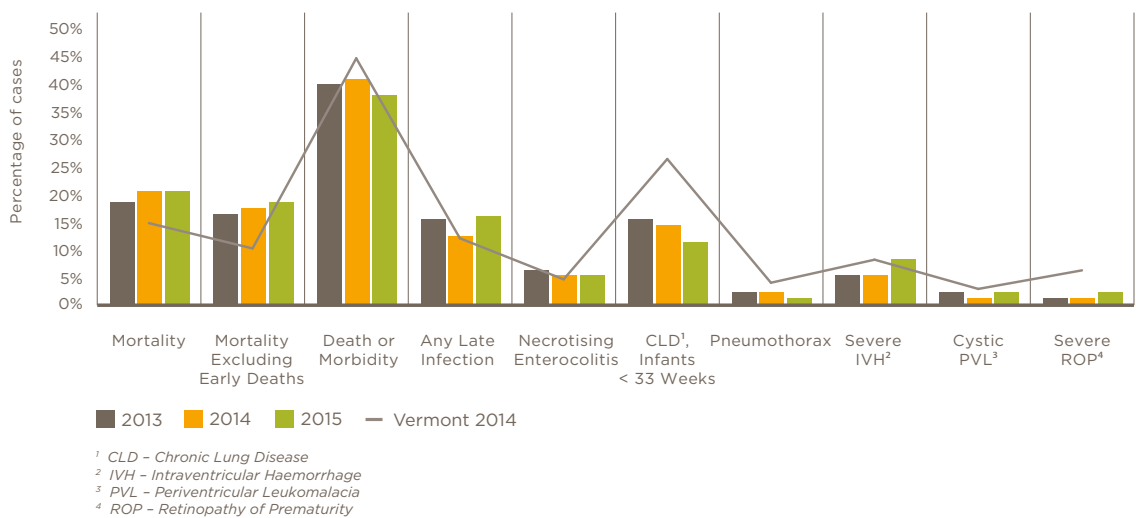


FIGURE 11: KEY PERFORMANCE MEASURES - MEDICLINIC SOUTHERN AFRICA (2013 - 2015)



MEDICLINIC SOUTHERN AFRICA (continued)

STANDARDS

Hospitals are high-risk environments in which complex treatment processes are executed using sophisticated equipment and techniques. Mediclinic Southern Africa makes use of the process of accreditation to ensure that international standards are adhered to in all aspects of hospital operations. The Council for Health Services Accreditation of

Southern Africa ("COHSASA"), an organisation whose standards have been accredited by the International Society for Quality in Healthcare, has been accrediting Mediclinic Southern Africa's hospitals since 1996. **Table 4** indicates that as at December 2015, 30 of the 36 participating hospitals held COHSASA accreditation. The other six hospitals are undergoing the renewal process.

TABLE 4: ACCREDITATION STATUS - MEDICLINIC SOUTHERN AFRICA (2015)

	ACCREDITED	RENEWAL DUE IN 2016	DEFERRED TO 2017 DUE TO BUILDING PROJECT
Mediclinic Cape Gate		✓	
Mediclinic Cape Town		✓	
Mediclinic Constantiaberg			✓
Mediclinic Bloemfontein	✓		
Mediclinic Brits	✓		
Mediclinic Durbanville		✓	
Mediclinic Emfuleni	✓		
Mediclinic George	✓		
Mediclinic Heart Hospital	✓		
Mediclinic Hermanus	✓		
Mediclinic Highveld	✓		
Mediclinic Hoogland	✓		
Mediclinic Kimberley	✓		
Mediclinic Kloof	✓		
Mediclinic Legae	✓		
Mediclinic Limpopo	✓		
Mediclinic Louis Leipoldt	✓		
Mediclinic Medforum		✓	
Mediclinic Milnerton	✓		
Mediclinic Morningside	✓		
Mediclinic Muelmed		✓	
Mediclinic Nelspruit	✓		
Mediclinic Newcastle	✓		
Mediclinic Paarl	✓		
Mediclinic Panorama	✓		
Mediclinic Pietermaritzburg	✓		
Mediclinic Potchefstroom	✓		
Mediclinic Sandton	✓		
Mediclinic Stellenbosch	✓		
Mediclinic Tzaneen	✓		
Mediclinic Vereeniging	✓		
Mediclinic Vergelegen	✓		
Mediclinic Victoria	✓		
Mediclinic Welkom	✓		
Mediclinic Windhoek	✓		
Mediclinic Worcester	✓		

INTEGRATED CARE

Mediclinic Southern Africa promotes the development of coordinated care models to improve patient care. These models follow a multi-disciplinary approach to patient care, with the patient at the centre. It is based on integrated teamwork and requires a specific and unique organisational structure and set of processes to be effective. Several of these coordinated care centres are being developed, the most prominent of which are reported below.

WITS DONALD GORDON MEDICAL CENTRE

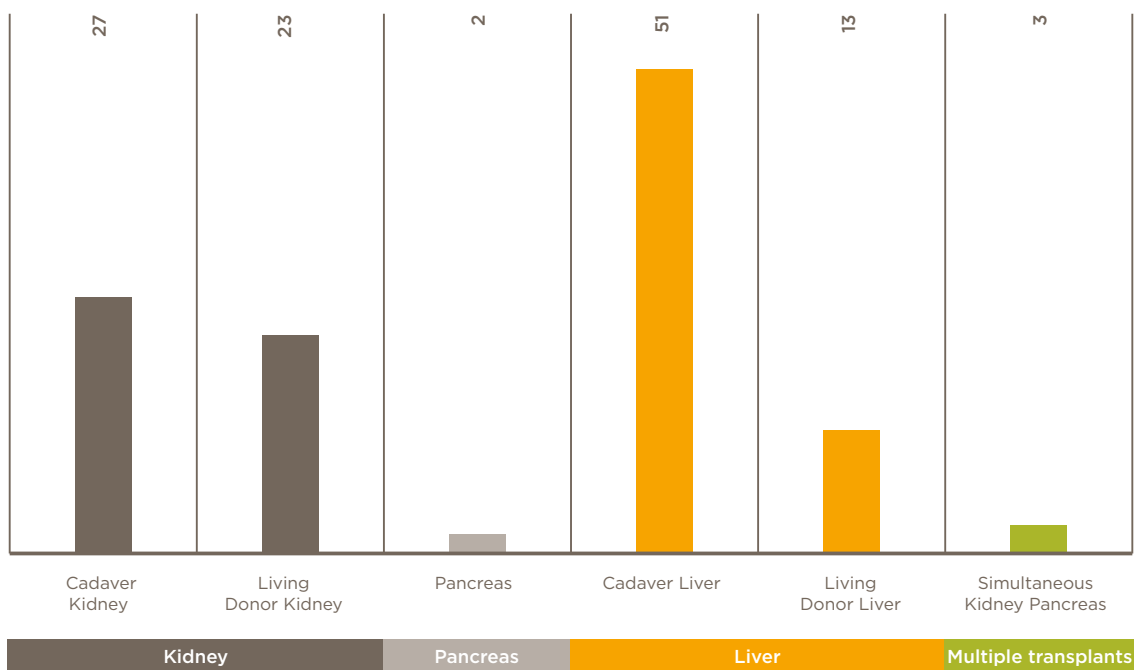
The most prominent coordinated care centre within Mediclinic Southern Africa is located in the Wits Donald Gordon Medical Centre (“**WDGMC**”). The WDGMC is a private academic hospital for the training of specialists and sub-specialists, and is a public private partnership between Wits University and Mediclinic Southern Africa.

WDGMC operates South Africa’s largest solid organ transplant centre, established in 2004, and performs liver, kidney, simultaneous kidney-pancreas, and pancreas-after-kidney transplants. The centre performed a total of 119 transplants in 2015. All cases are peer reviewed pre- and post-operatively by the multi-disciplinary team. All morbidity and mortality outcomes are measured and benchmarked against international standards, to which they compare favourably. The Paediatric Living Donor Liver Transplant Programme is now established, with a total of 13 living donor liver transplants performed in 2015 compared with eight in 2014.

WDGMC is also academically known for its colorectal, hepatobiliary, geriatric oncology and multidisciplinary CCUs. The WDGMC plans to further expand in the future to maximise the benefit of private sector funding and expertise for the benefit of patients in all sectors of the healthcare landscape.

Figure 12 reflects the total number of kidney, liver and pancreas transplants performed in the centre in 2015.

FIGURE 12: TRANSPLANT CENTRE - WITS DONALD GORDON MEDICAL CENTRE (2015)



MEDICLINIC SOUTHERN AFRICA (continued)

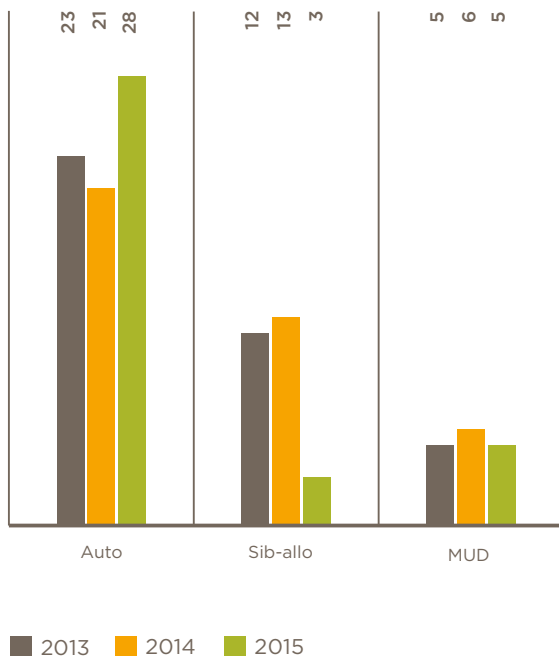
CONSTANTIABERG HAEMATOLOGY AND BONE MARROW TRANSPLANT CENTRE

The Constantiaberg Haematology and Bone Marrow Transplant Centre at Mediclinic Constantiaberg is a comprehensive haematology referral centre for the diagnosis and treatment of haematology disorders and malignancies such as leukaemia, lymphomas, multiple myeloma, aplastic anaemia and various other types of anaemias, and bone marrow disorders, offering state-of-the-art treatment based on international research protocols. This includes the opportunity to undergo bone marrow transplants, where indicated, as part of a comprehensive treatment programme. Working with the South African bone marrow registry the centre is able to offer autografts and allografts (sibling donors and matched unrelated donors ("MUD"). Cell separation procedures are performed on-site and bone marrow grafts are collected for patients elsewhere in South Africa and overseas when requested.

The centre is involved in international research and is a referral centre for Southern Africa as well as neighbouring countries.

Figure 13 indicates the total number and type of transplants done.

FIGURE 13: BONE MARROW TRANSPLANTS - MEDICLINIC CONSTANTIABERG (2013 - 2015)



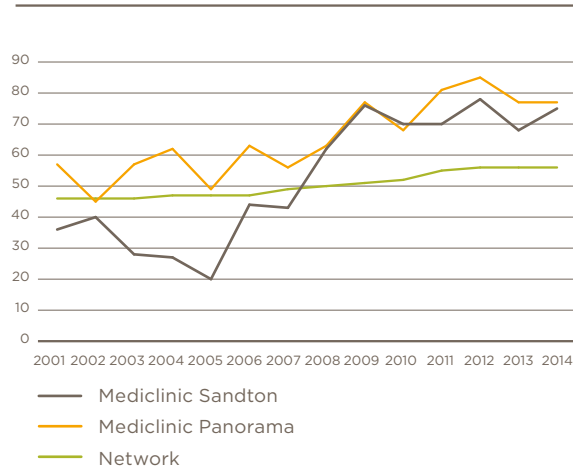
NEONATAL CRITICAL CARE - MEDICLINIC PANORAMA AND MEDICLINIC SANDTON

The Neonatal Critical Care units ("NCCUs") at Mediclinic Panorama and Mediclinic Sandton were established in the 1980s and have since then delivered excellent care to neonates. The NCCUs have 22 beds and 41 beds respectively, and function as closely coordinated CCUs run by teams of neonatologists.

Both care teams embrace evidence-based medicine in non-invasive ventilation, human milk feeding, brain cooling and the use of antenatal steroid therapy. Both NCCUs have established paediatric surgical services and act as referral units for other NCCUs. Major abdominal surgery and surgery to correct persistent patent ductus arteriosus is also performed in the Mediclinic Panorama NCCU as these patients may be too unstable to be moved to theatre. Mediclinic Sandton has had zero cases of retinopathy of prematurity requiring laser therapy since 2008. An integrated developmental care programme is followed in keeping with both teams' goal of ensuring the survival of the infant and the best possible long-term clinical outcome. Both units have participated in the VON database since 2001 and their clinical outcomes compare favourably with the network.

Figure 14 reflects that the percentage of infants that died or suffered a serious complication compares favourably with the VON and the high quality of care delivered in both the units.

FIGURE 14: < 1 500 GRAMS SURVIVAL WITHOUT MORBIDITIES



PROGRESS AGAINST OBJECTIVES

“PATIENTS FIRST” AT MEDICLINIC

- Mediclinic Southern Africa adopted a centrally integrated clinical management structure which resulted in breaking down historical silos and improving team work.
- A clinical Key Performance Indicator (“KPI”) dashboard, that visually displays statistical information to hospitals to enable management of performance and quality improvement initiatives, was developed and implemented.
- Nursing specialists have been appointed in critical care, theatre management and obstetrics and neonatology to centrally coordinate a number of projects aimed at improving clinical care in these areas.

TRANSFORM FROM AN INFRASTRUCTURE PROVIDER TO A HEALTHCARE SYSTEMS PROVIDER

- Mediclinic Southern Africa focused on closer collaboration with doctors, transparent sharing of information with funders and doctors, and patient centred care.
- Clinical managers were appointed at four larger hospitals, and early indications are that these positions contribute to improved patient safety and quality of care.
- Collaborative ventures with small groups of orthopaedic surgeons and obstetricians have been launched as pilot projects to improve clinical care and efficiency.

CLINICAL INFORMATION SYSTEMS

Mediclinic Southern Africa embarked on a multi-year programme to transform from a paper-based system of clinical documentation to a clinical information system. The strategic objective is to add functionality incrementally, add business value continuously and limit expenses and risk to the business while allowing an agile approach. The first phase, which aims to collate information currently in internal systems and ultimately deliver an electronic medical record (“EMR”) at point of care, has been initiated.

FUTURE OBJECTIVES

PATIENTS FIRST

Mediclinic Southern Africa will:

- update its patient safety strategy,
- upscale nursing skills training in the areas of theatre, obstetrics and infection control,
- revise the current nursing management model,
- improve the measurement of clinical performance through various initiatives,
- share clinical information with doctors, and
- further reduce infection rates through various initiatives.

FACILITY TO SYSTEMS PROVIDER

Mediclinic Southern Africa will:

- appoint clinical managers at 10 additional hospitals,
- implement selective clinical pathways led by doctors, and
- implement a new emergency medicine services model.

CLINICAL INFORMATION SYSTEMS

Mediclinic Southern Africa will conclude Phase 1 of its clinical information system project.

HIRSLANDEN

OVERVIEW

Hirslanden offers acute care hospital services in 16 facilities across 11 cantons in Switzerland. The hospital services range from routine procedures and medical treatment plans in seven smaller secondary care community hospitals to highly specialised, complex and technologically advanced treatment modalities in seven larger tertiary care city hospitals.

The majority of cases are elective in nature, and services like advanced neonatal critical care and major trauma are provided by the cantonal and university teaching facilities. Most admitting doctors are self-employed. However, doctors working in the fields of hospital-based specialities like anaesthetics and internal medicine are employed at certain hospitals. Radiology, laboratory, nuclear medicine and radiation oncology services are in most instances owned and operated by the hospitals themselves.

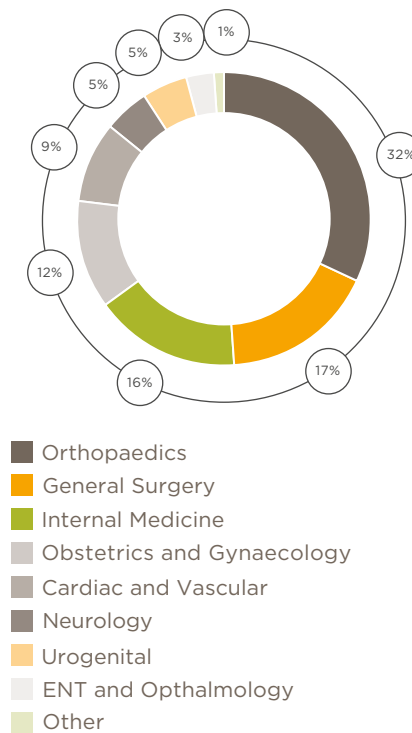
The burden of disease of the Swiss population consists mainly of chronic diseases commonly associated with lifestyle and old age. The burden of communicable (infectious) diseases and trauma is small. The chronic underlying medical conditions that might be present in a patient on admission to a hospital may have a significant impact on the level of care the patient receives and/or length of stay such a patient experiences during hospitalisation. During 2015 the proportion of patients admitted to hospital with chronic underlying diseases was approximately 20%, and hypertension, diabetes mellitus and obesity were the most common diseases present.

Figure 15 illustrates the contribution per discipline in terms of the number of patients admitted to Hirslanden's hospitals in 2015. Orthopaedics was the most prominent contributor (32%), followed by general surgery (17%), internal medicine (16%), obstetrics and gynaecology (12%) and cardiac and vascular surgery (9%). Hirslanden enjoys a strong market position with a market share of 25% in cardiology and cardiac surgery overall and nearly 30% in bypass surgery and valve replacements in particular.

Hirslanden is the operating platform with the highest case mix index of 1.51 in 2015. This is mainly due to its high load of complex and technologically advanced cases in an older population. In keeping with a high case mix index its inpatient length of stay measured in calendar days for 2015 was also the highest in the Group at 5.02 days.

Hirslanden has a well-developed organisational structure in clinical management. Every Hirslanden hospital has a quality manager, an infection control specialist, a critical incident manager and several sub-committees for quality, infection prevention and control and critical incident reporting. The Clinical Services department at the Hirslanden Corporate Office coordinates the activities of the sub-committees, and clinical key performance indicators monitor their activities. The affiliated doctors are integrated into this structure by established boards in several specialities.

FIGURE 15: SPECTRUM OF SERVICES - HIRSLANDEN (2015)



There are strict entry criteria for doctors to become affiliated to Hirslanden hospitals. A comprehensive credentialing process, assisted by a clinical committee, is followed. The recruitment and credentialing of nursing staff is a rigorous process that includes a trial period of three months during which three formal assessments take place. The continuous training of nurses is coordinated by training managers in every hospital, and resuscitation training takes place on an ongoing basis.

CLINICAL PERFORMANCE

PATIENT SAFETY

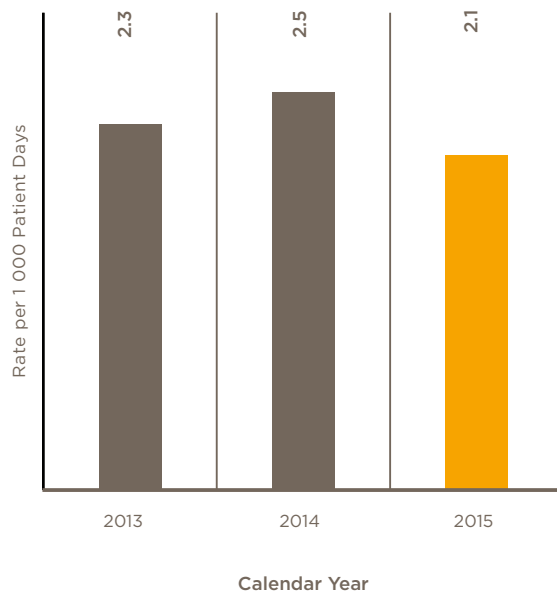
Theatre management is one of the main focus areas of patient safety. The World Health Organisation (“WHO”) introduced the concept of a safe surgery checklist in 2007. The promising results of the evaluation period motivated Hirslanden to launch a project in 2010, and every hospital of the group now uses the safe surgery checklist. Adherence is checked by unheralded biennial inspections on hospital level, and after a second round of inspections took place the commitment to the adoption of the checklist is high and is accepted throughout the platform.

Adverse events

An important aspect of improving the quality and safety of patient care is the prevention of adverse events that could cause harm to patients. However, the low occurrence of some events prevents a systematic analysis of underlying factors. In this case the gathering of information on near misses is an effective method to improve the processes of care. Hirslanden diligently records all near misses.

Figure 16 reflects the weighted average fall rate for the group since 2013.

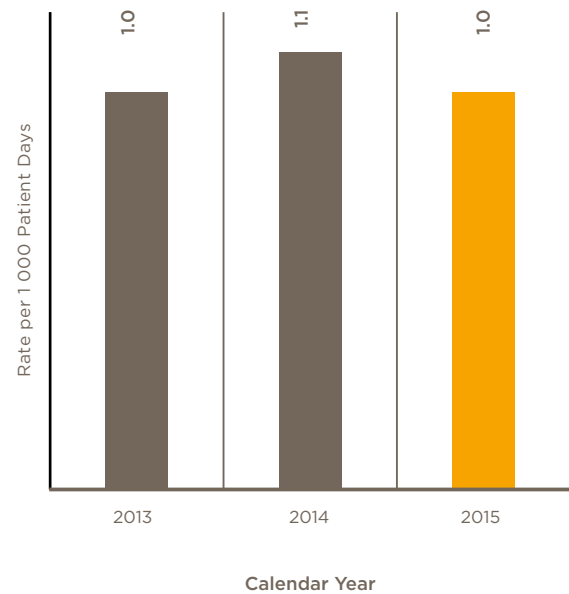
FIGURE 16: WEIGHTED AVERAGE FALL RATE - HIRSLANDEN (2013 - 2015)



The weighted average fall rate decreased slightly in 2015. An analysis showed that a change in patient population was experienced in 2014 as two hospitals were added to the group in 2014 with their full impact becoming visible in 2015.

Figure 17 reflects the Hirslanden weighted average in-hospital pressure ulcer rate, which decreased slightly in 2015.

FIGURE 17: WEIGHTED AVERAGE IN-HOSPITAL PRESSURE ULCER RATE - HIRSLANDEN (2013 - 2015)



HIRSLANDEN (continued)

INFECTION PREVENTION AND CONTROL

Healthcare-associated infections

HAIs remain a significant risk to patients and the management thereof remains a focus. Infection prevention and control is a key performance indicator and hospitals are focused on this aspect of their operations.

Figure 18 shows the device-associated infection rates in Hirslanden CCUs.

The catheter-associated urinary tract infections ("CAUTI") and VAP decreased in 2015 when compared to 2014. However, the central line-associated bloodstream infections increased in 2015. The trend became visible in the first half of the year, and after action plans were set up the rate decreased in the second half of the year. Further improvement is expected. The rate is based on 15 infections out of 13 202 central line days.

Figure 19 reflects the post-operative wound infection rates of selected procedures.

The infection rates for coronary artery bypass graft, hip replacement, and colon surgery decreased in 2015 when compared to 2014. The knee replacement infection rate increased compared to the previous year, based on the rate of a single hospital and is still in line with the benchmark. Every case with an infection is taken seriously and is investigated at hospital level by an infection specialist who executes action plans based on their findings.

FIGURE 18: DEVICE-ASSOCIATED AND SURGICAL SITE INFECTIONS - HIRSLANDEN (2013 - 2015)

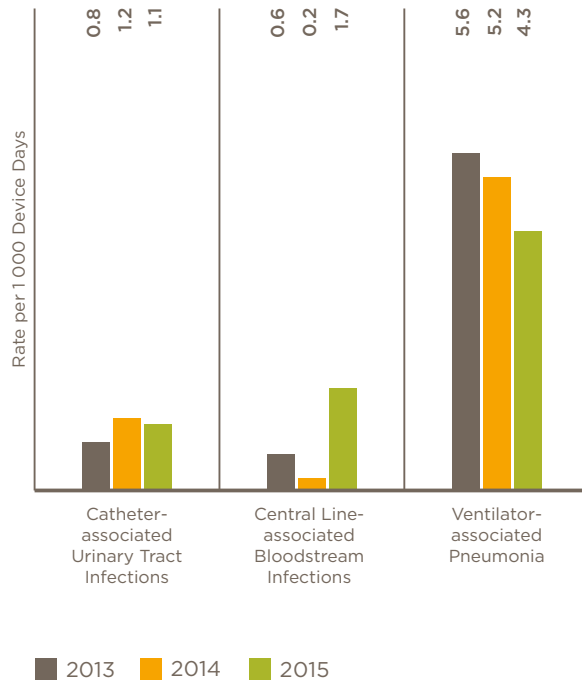
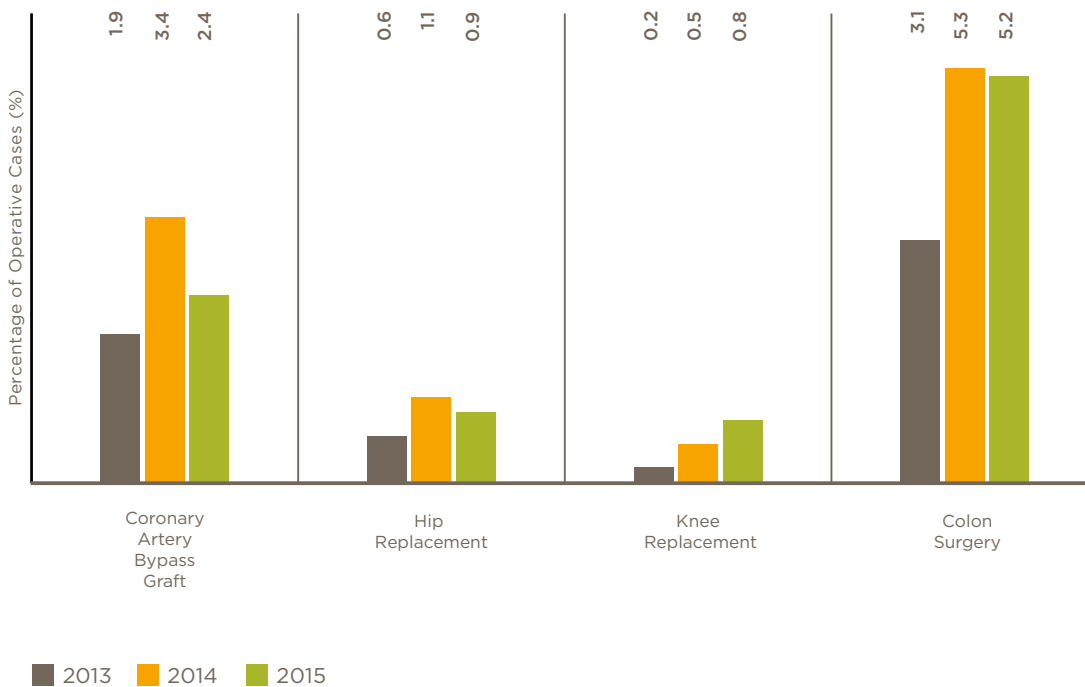


FIGURE 19: POST-OPERATIVE WOUND INFECTIONS FOR SPECIFIC TYPES OF PROCEDURES - HIRSLANDEN (2013 - 2015)



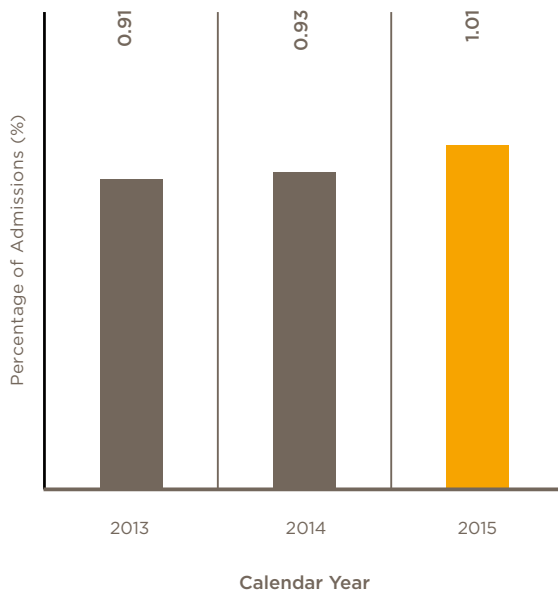
CLINICAL EFFECTIVENESS

Hirslanden has been participating in the International Quality Indicator Project ("IQIP"®) since 2006. The initiative was developed over 16 years ago in the United States and by 2013 more than 400 organisations in 18 countries participated in the initiative. Although the IQIP initiative was officially discontinued by Press Ganey in 2014, and the IQIP benchmarks are no longer available for comparison, Hirslanden continues to use the indicators for internal purposes because it is convinced of the benefit of the programme.

MORTALITY

Figure 20 reflects the Hirslanden weighted average mortality rates for the last three calendar years. The increase in mortality rate can be attributed to the increase in case mix. Hirslanden Klinik Aarau experienced a significant increase in heart surgery volumes due to collaboration with the University Hospital in Berne.

FIGURE 20: WEIGHTED AVERAGE MORTALITY - HIRSLANDEN (2013 - 2015)



ADULT CRITICAL CARE MORTALITY - SIMPLIFIED ACUTE PHYSIOLOGY SCORE ("SAPS") II

The SAPS II adult critical care mortality prediction methodology for patients in the adult critical care setting is used in the CCUs of many Hirslanden hospitals.

Table 5 reflects some important statistics, the most important being the mortality index, which is the relationship between the actual and predicted mortalities. The mortality index of 0.20 in 2015 remained unchanged, and implies that the overall mortality of the scored cases was 80% better than expected.

TABLE 5: SAPS II MORTALITY INDEX - HIRSLANDEN (2013 - 2015)

	HIRSLANDEN			SAPS II BENCHMARK
	2013	2014	2015	2014
Cases	6 907	7 948	7 861	8 811
Expected	13.5%	11.6%	12.3%	9.0%
Actual	2.8%	2.5%	2.4%	4.0%
Mortality Index	0.21	0.20	0.20	0.44
Average age of patients	67.4	67.1	70.0	65.0
Average length of stay in CCU (days)	1.9	1.5	2.1	2.3
Percentage of ventilated patients	38.24%	39.13%	33.30%	32.00%

HIRSLANDEN (continued)

RE-ADMISSION

Figure 21 reflects re-admissions within 15 days. The re-admission rate decreased from 1.44% in 2014 to 1.28% in 2015.

FIGURE 21: RE-ADMISSION RATES – HIRSLANDEN (2013 – 2015)

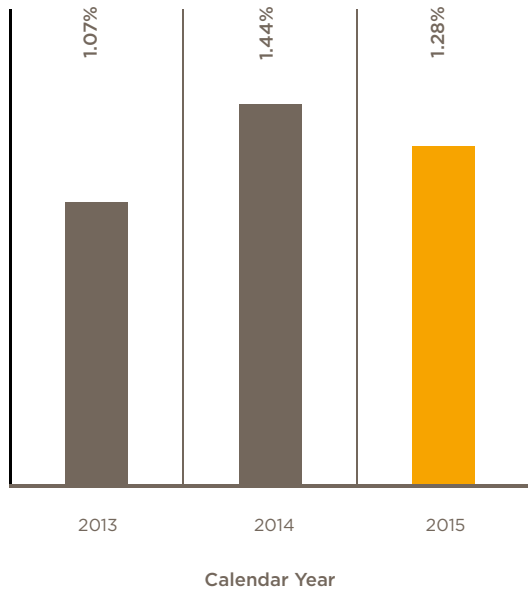
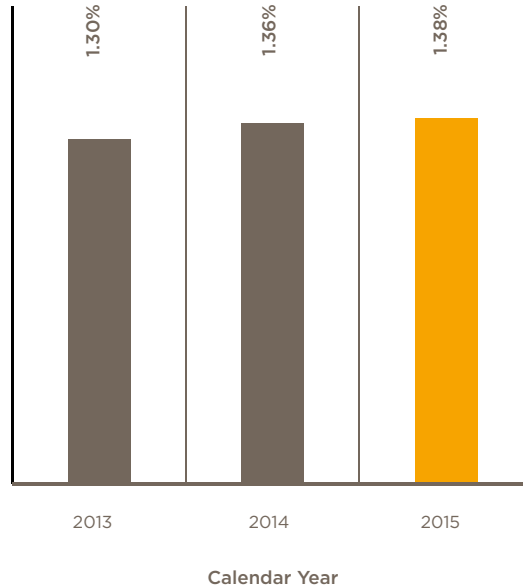


FIGURE 22: IQIP WEIGHTED AVERAGE UNSCHEDULED RETURN TO OPERATING THEATRE RATE – HIRSLANDEN (2013 – 2015)








UNSCHEDULED RETURNS TO THE OPERATING THEATRE

The weighted average rates for unscheduled returns to the operating theatre for the last three calendar years are reflected in **Figure 22**. Unscheduled returns to the operating theatre are not planned and are believed to be the result of early complications. The return rate increased marginally from 1.36% in 2014 to 1.38% in 2015 due to a higher case load in heart surgery, but the change is not statistically significant.

STANDARDS

Hirslanden hospitals participate in ISO 9001:2008 certification in cooperation with the Swiss Association for Quality and Management Systems. **Table 6** reflects the accreditation status of the group in 2015. The initiative focuses on processes and is embraced by the objectives of the European Foundation for Quality Management (“**EFQM**”) initiative through which quality and safety in patient care is promoted.

TABLE 6: ACCREDITATION STATUS – HIRSLANDEN (2015)

					
Hirslanden Klinik Aarau	2010	2006			
Klinik Beau-Site, Bern	2009				
Klinik Permanence, Bern	2009				
Salem-Spital, Bern	2009				
Andreasklinik Cham Zug	2002		2002	2013	
Klinik Am Rosenberg, Heiden	2008				
Clinique Bois-Cerf, Lausanne	2007	2004	2010		
Clinique Cecil, Lausanne	2007	2004	2010		
Klinik St. Anna, Luzern	2000		2008	2013	
Klinik Birshof, Münchenstein	2009		2012	2015	
Klinik Belair, Schaffhausen	2005		2012	2014	
Klinik Stephanshorn, St. Gallen	2012		2014		2015
Klinik Hirslanden, Zürich	2006	2009			2009
Klinik Im Park, Zürich	2009		2006	2016	
Corporate Office, Zürich	2010				
Hirslanden Klinik Meggen	2012				

INTEGRATED CARE

The concept of coordinated care (competence) centres is an important part of Hirslanden's strategy, and more than 100 centres have been established over time. Based on the criteria of different sources such as EFQM, Joint Commission International ("JCI") and ISO 9001, and evaluation model has been developed to grade and refine the functions of these centres. The model will be adapted for use throughout the Mediclinic Group.

HEART SURGERY CENTRE, AARAU

Hirslanden Klinik Aarau was able to set up a fruitful collaboration with the department of heart surgery of the university hospital Berne and the Cantonal Hospital Aarau. The heart surgery centre Aarau combines the expertise of academic professionals with the professional care of a private hospital. It is the first Swiss collaboration between a university and a private hospital in this highly specialised area of medicine. The centre is embraced by additional centres and institutes of the hospital to provide interdisciplinary diagnosis and treatment.

SWISS TUMOUR INSTITUTE

One of the most well-known coordinated care initiatives at Hirslanden is the Swiss Tumour Institute. The concept of the institute was established in 2005 and involves several hospitals within the group. The objective of the concept is to combine the competencies of different specialities working on the diagnosis and treatment of tumours and cancer. Organ centred tumour boards form an important part of the centre. Examples include gastrointestinal, neurological, haematological, breast cancer and thoracic tumour boards. A typical board consists of interdisciplinary teams focusing on a subgroup of cancer diseases, and includes oncologists, specialised internists (e.g. gastroenterologist), surgeons, radio-oncologists, pathologists and radiologists. The physicians participate in the discussion of cases in person or by video conference. Each case discussion is documented electronically and includes a therapeutic plan for the patient which has to be followed.

INDICATION BOARDS

Conceptual work for the processes and principles of the Swiss Tumour Institute is also being used for other specialities. The complexity of modern approaches in the treatment of heart diseases led to the establishment of an interdisciplinary board of heart surgeons and cardiologists that discusses every case of endovascular heart valve replacement before the treatment occurs. A similar activity evolved in the field of complex visceral surgery such as pancreas resection, oesophageal resection, rectum resection and bariatric surgery. The consent of an interdisciplinary team on the treatment plan of these cases is now the basis for the successful procedure and post-operative recovery.

PROGRESS AGAINST OBJECTIVES

"PATIENTS FIRST" AT MEDICLINIC

- Hirslanden reaffirmed the utilisation of its critical incident reporting system and adherence to policies.
- Audits on a number of indicators showed that data was accurate and appropriate action taken when areas in need of improvement were identified.
- A change in approach from functional nursing to patient centred nursing has been making good progress, which resulted in a new nursing skill-grade mix pilot project.

TRANSFORM FROM AN INFRASTRUCTURE PROVIDER TO A HEALTHCARE SYSTEMS PROVIDER

Hirslanden published its conceptual model of a system provider in "Schweizerische Ärztezeitung", the national journal of doctors and received positive feedback. Based on this model the existing structures of anaesthesia, general internal medicine and accident and emergency are going to be improved and aligned.

CLINICAL INFORMATION SYSTEMS

Hirslanden has been making good progress with its clinical information system project called Lighthouse, and maintains an emphasis on the importance of standardised processes in ensuring successful implementation.

FUTURE OBJECTIVES

PATIENTS FIRST

Hirslanden will:

- review compliance with its patient safety strategy,
- audit patient safety at all hospitals,
- implement additional clinical indicators, and
- develop positive outcome indicators.

FACILITY TO SYSTEMS PROVIDER

Hirslanden will:

- start to define and evaluate indication quality of treatment plans,
- develop a process to enable enhanced recovery after orthopaedic surgery, and
- develop a common structure for all highly specialised medicine services.

CLINICAL INFORMATION SYSTEMS

Hirslanden will define electronic documentation in its catheter laboratories and accident and emergency departments, re-evaluate its radiology information system, and introduce medication source data in its clinical information system.

MEDICLINIC MIDDLE EAST

OVERVIEW

Mediclinic Middle East offers acute care hospital services in two hospitals and primary care in ten clinics in Dubai and Abu Dhabi. The relationship between the hospitals and clinics is that of a hub-and-spoke model. The clinics deliver specialist-orientated consultations and follow-up services, and refer to the hospitals. The hospital services range from providing secondary care procedures and medical treatment plans to tertiary care technologically advanced treatment modalities. Although the majority of cases are elective in nature, a significant portion is unscheduled and emergency related. Major trauma services are provided by the state facilities. The majority of admitting doctors are employed by Mediclinic Middle East, but there is also a significant complement of independent doctors who admit and treat patients in the hospitals. The radiology, laboratory and nuclear medicine services are owned and operated by Mediclinic Middle East.

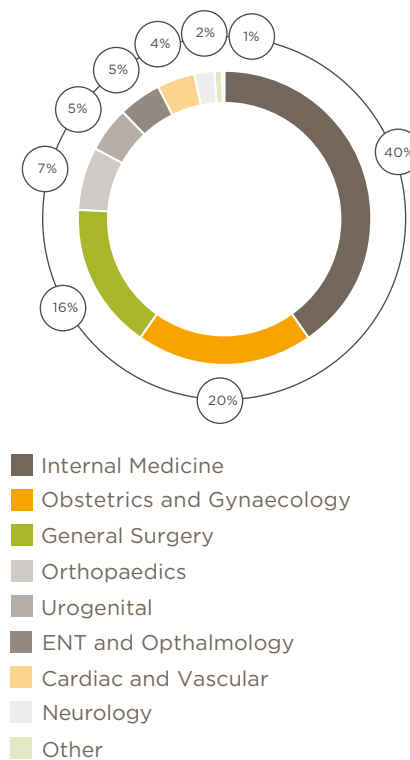
The newly acquired Al Noor Group operates three acute care hospitals (and a soon to be opened fourth hospital) in the Abu Dhabi Emirate. It also operates 25 clinics that range from general practice to multispeciality clinics (nine are operated as a joint venture under the Al Madar name). The hospital services range from providing secondary care procedures and medical treatment plans to tertiary care technologically advanced treatment modalities. Although the majority of cases are elective in nature, a significant portion is unscheduled and emergency related. Similar to Dubai major trauma services are provided by the state facilities. The majority of admitting doctors are employed by Al Noor but there is also a complement of independent doctors who admit and treat patients in the hospitals. The radiology, laboratory and nuclear medicine services are owned and operated by Al Noor.

The burden of disease of the UAE population mainly consists of chronic diseases of lifestyle and communicable diseases. The chronic underlying medical conditions that might be present in a patient on admission to a hospital may have a significant impact on the level of care the patient receives and/or length of stay such a patient experiences during hospitalisation. The clinical performance indicators reported on refer to the Dubai operations and excludes Al Noor. In the future the indicators will include information from both Dubai and Al Noor.

Figure 23 illustrates the contribution per discipline in terms of the number of patients admitted to Mediclinic Middle East's hospitals in 2015. Internal medicine (40%), obstetrics and gynaecology (20%) and general surgery (16%) were the most prominent contributors in 2015.

The 2015 case mix index of Mediclinic Middle East was the lowest of the three platforms at 1.06 due to its young patient population. Inpatient length of stay measured in calendar days was a relatively short 3.10 days, which is in keeping with its low case mix index.

FIGURE 23: SPECTRUM OF SERVICES - MEDICLINIC MIDDLE EAST (2015)



Clinical services at Mediclinic Middle East are coordinated by the central Clinical Forum and both hospitals have a full-time medical director coordinating the activities of all the doctors in the facility. A full-time medical director has been appointed to oversee clinical governance at the ten clinics, and a dedicated group patient safety officer has been appointed to drive patient safety activities and implement the quality and patient safety strategy on the platform.

A quality committee will be established on the UAE platform level to discuss quality, safety and service indicators, identify areas of improvement and approve corrective action plans. There are also quality committees at each of the hospitals to monitor compliance with JCI standards and to take appropriate actions to make sure that the group is compliant to the accreditation standards. The committees' structure at the clinics is currently under review.

Regular patient satisfaction surveys are conducted and Press Ganey will be rolled out to Al Noor, allowing for comparison of patient satisfaction results. Clinical indicator dashboards and clinical outcome reports are currently under review for standardisation purposes.

All new physicians or doctors who are due for re-credentialing are evaluated by a centralised credentialing committee that uses the same criteria

throughout the system. The committee, formed in November 2015, has representation from all medical directors and from nursing and administration. The purpose is to allow physicians to work throughout the combined system thus creating a better integrated delivery system.

A group quality function was established to oversee quality initiatives system-wide. A unified corporate quality, safety and service plan was put in place to ensure the strategy for quality was set and the priorities identified, which was done in collaboration with all facilities.

The indicator dashboard was unified and benchmarks were updated to reflect current international evidence-based benchmarks.

MOHAMED BIN RASHID UNIVERSITY OF MEDICINE AND HEALTH SCIENCES ("MBRUHMS")

The Memorandum of Understanding was signed on 22 April 2015 between the Dubai Health Care City and Mediclinic Middle East. Work on an affiliation agreement commenced in May 2015. The final affiliation agreement will be completed and signed-off by May 2016. The Mediclinic City Hospital was selected and approved as a training site for medical students by the Commission for Academic Affiliation's external review team.

The first students will enrol in September 2016 and Mediclinic Middle East is assisting with the selection process by participating in the student interviews. A clear roadmap for 2016 will require the establishment of Clinical Academic Committee at Mediclinic Middle East and finalise the compensation mechanism for Mediclinic Middle East physician teaching time as adjunct faculty.

CLINICAL PERFORMANCE

PATIENT SAFETY

Mediclinic Middle East makes extensive use of audits to promote patients' safety and quality of care. Medical record, anaesthetic, epidural, prescription and surgical audits continue to be performed regularly. A full-time clinical auditor will be appointed to do structured clinical audits in all the facilities.

Surgical safety checklists were implemented in 2009 at both Mediclinic Middle East hospitals, with excellent compliance. This initiative, which contributes significantly to patient safety, is also aligned with one of the six patient safety goals of the JCI.

Similar to Mediclinic Middle East, the Al Noor Group focuses on:

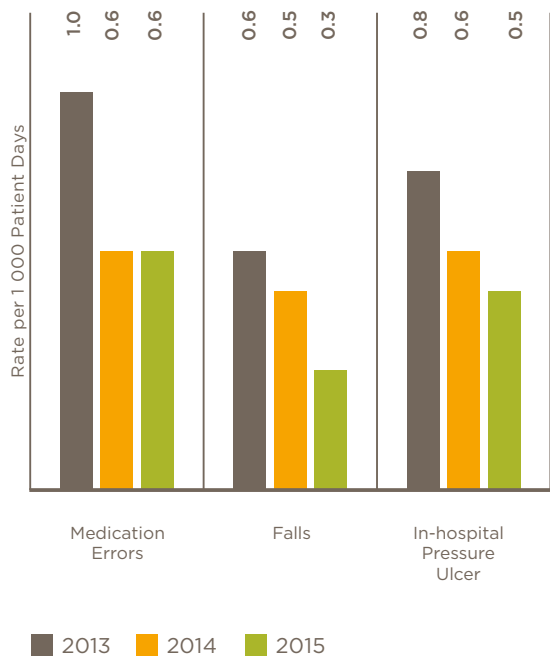
1. Patient safety and further implementation of the patient safety strategy for the group
2. Accreditation preparation and clinical audit strategy for the group

3. Standardisation of policies and documents
4. All Al Noor hospitals are in compliance with Environmental, Health and Safety Management System standards

Adverse events

Figure 24 reflects the most pertinent adverse events. While no change is reflected in the medication error rate, decreases were experienced in patient falls and pressure ulcers during 2015.

FIGURE 24: ADVERSE EVENTS - MEDICLINIC MIDDLE EAST (2013- 2015)



INFECTION PREVENTION AND CONTROL

Healthcare-associated infections

Prevention of HAIs remains a key patient safety strategy for Mediclinic Middle East. This includes standardisation of processes around infection control (based on international best practices), implementation of care bundles (SSI, VAP, central line-associated bloodstream infections ("CLABSI") and CAUTI) and a surveillance programme with a multilayer methodology. This methodology includes surveillance that is active and passive, patient and laboratory-based, prospective and retrospective, priority-directed and comprehensive. The infection control practitioners of Mediclinic Welcare Hospital, Mediclinic City Hospital and Mediclinic Dubai Mall are all certified in infection control by the Association for Professionals in Infection Control and Epidemiology.

MEDICLINIC MIDDLE EAST (continued)

Figure 25 reflects the overall HAI rate for Mediclinic Middle East. The HAI rate is low, with a marginal increase from 1.5 to 1.6 per 1 000 patient days in 2015.

FIGURE 25: HEALTHCARE-ASSOCIATED INFECTIONS – MEDICLINIC MIDDLE EAST (2013 – 2015)

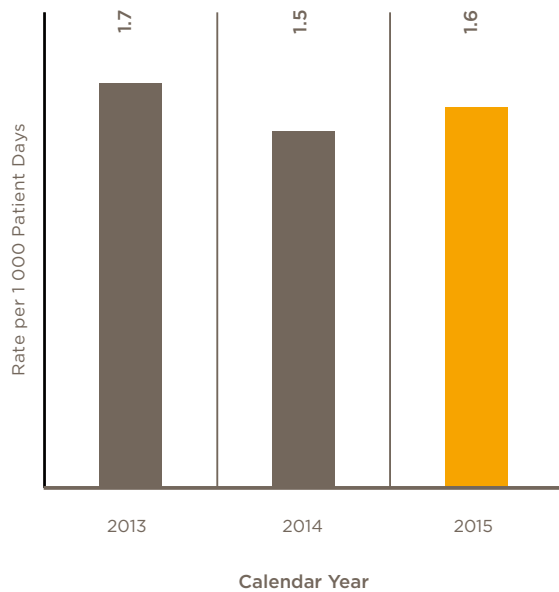
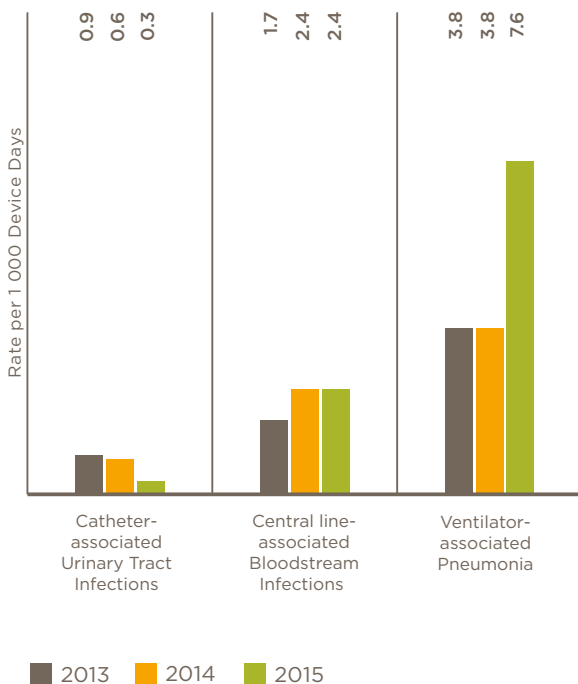


Figure 26 shows a continued decrease in CAUTI rates in 2015 when compared to 2014, which was mainly due to the implementation of reliable evidence-based practices such as strict antimicrobial guidelines.

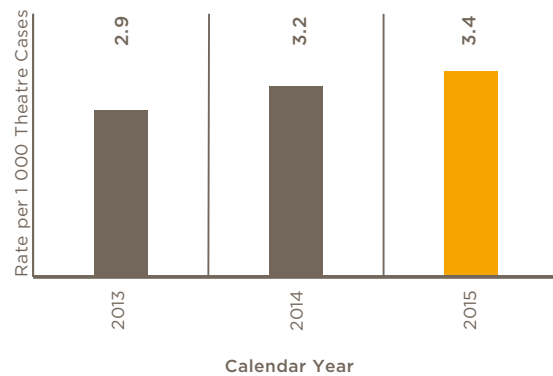
FIGURE 26: DEVICE-ASSOCIATED INFECTIONS – MEDICLINIC MIDDLE EAST (2013 – 2015)



The rate of CLABSI remained unchanged in 2015 when compared to 2014 and can be ascribed to continued awareness, training, surveillance and the implementation of care bundles in the CCU.

The rate of VAP increased significantly in 2015 and was mainly due to an increased incidence at one hospital. This was as a result of increased acuity levels of the patients referred and transferred from other facilities to this hospital that serves as a referral centre in the region. On further investigation it was also found that a number of patients affected were at higher risk of contracting the illness due to the underlying status of their health. Action plans to address the risk and reduce the rate have been implemented.

FIGURE 27: SURGICAL SITE INFECTIONS – MEDICLINIC MIDDLE EAST (2013 – 2015)

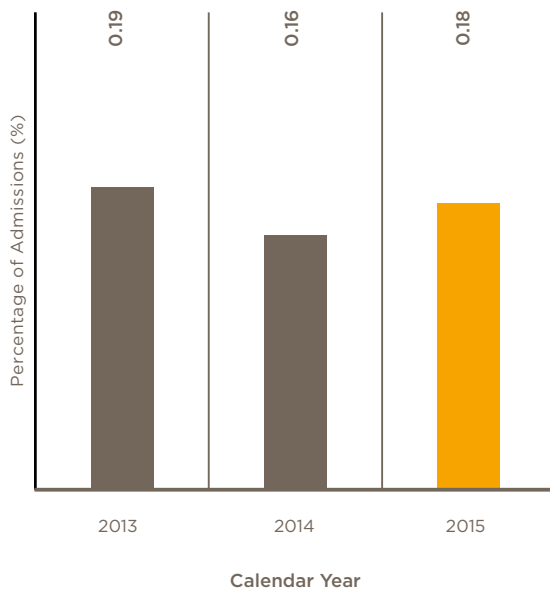


The rate of SSIs (see **Figure 27**) increased by 6% from 3.2 per 1 000 theatre cases to 3.4 per 1 000 theatre cases in Mediclinic Middle East in 2015. Root cause analyses were done, action plans were implemented and the rate improved towards the end of the year. Ongoing compliance with IPC standards is being monitored.

CLINICAL EFFECTIVENESS MORTALITY

Figure 28 reflects the actual combined mortality rates for both Mediclinic Middle East hospitals. These figures have not as yet been adjusted for severity of disease, types of surgery or other patient factors. For the same reasons expected mortality figures cannot be calculated.

FIGURE 28: INPATIENT MORTALITY - MEDICLINIC MIDDLE EAST (2013 - 2015)



Actual mortality increased from 0.16% to 0.18% in 2015 and remained significantly lower than the actual mortality for both Mediclinic Southern Africa and Hirslanden. This is due to the fact that Dubai has a young population (average age of 32 years), and the types of surgery performed are in general not as invasive and complex as in the other two operating platforms.

ADULT CRITICAL CARE MORTALITY - APACHE® IV

Mediclinic Middle East moved from the APACHE® III-j physiological prediction model to APACHE® IV at both of its hospitals during 2014. A total of 1 398 cases were scored in the CCUs of the two hospitals in 2015. The mortality index of 0.42 indicates that the actual mortality rate was significantly less than expected.

Table 7 reflects a summary of the important statistics.

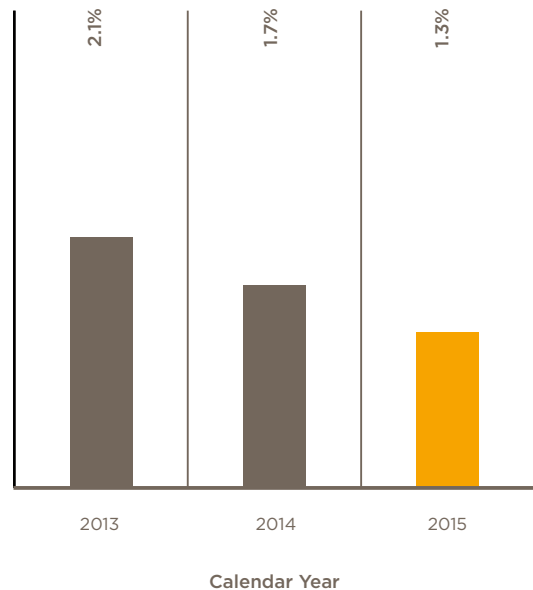
TABLE 7: APACHE® IV MORTALITY INDEX - MEDICLINIC MIDDLE EAST (2014 - 2015)

	2014	2015
Cases	1 482	1 398
Average age of patients (years)	53.3	54.2
Number of mortality cases	23	22
Mortality rate (%)	1.6%	1.6%
APACHE® IV expected mortalities (cases)	53	52.1
APACHE® IV expected mortality rate (%)	3.6%	3.7%
APACHE® IV mortality index	0.43	0.42
Average CCU length of stay (days)	2.0	1.9
Average APACHE® IV expected CCU length of stay (days)	3.3	3.3
APACHE® IV CCU length of stay index	0.60	0.59
Average APACHE® IV score	25.6	25.4
Average APS score	18.6	17.8
Number and percentage of ventilated cases	78 (5.3%)	72 (5.2%)

RE-ADMISSION

Figure 29 reflects the 30-day re-admission rate for both hospitals. All admission types, except oncology, are included in the calculation. Comparable external benchmarks are unfortunately not available and an internal benchmark is used to compare this indicator. The re-admission rate has decreased significantly from 2.1% to 1.3% since 2013.

FIGURE 29: RE-ADMISSION RATE - MEDICLINIC MIDDLE EAST (2013 - 2015)



MEDICLINIC MIDDLE EAST (continued)

ADULT CARDIO-THORACIC SURGERY

Although the cardio-thoracic surgery team has been collecting clinical outcomes data as part of their own initiative since 2002, they have implemented the ACTD at Mediclinic City Hospital in 2009. Although the primary aim of the ACTD initiative is to measure and improve the clinical outcomes of cardio-thoracic surgery, it also enables the comparison of results between the Group's operating platforms.

Table 8 reflects general indicators and clinical outcomes. Comparable international benchmarks are not freely available, hence the year-on-year comparisons.

TABLE 8: GENERAL INDICATORS AS A PERCENTAGE OF CASES (2013 - 2015)

	2013	2014	2015
Post-operative outcomes			
Infections	0.0%	0.0%	1.4%
Re-operation	3.1%	0.0%	4.2%
Mortality			
Expected mortality (EuroSCORE)	5.4%	7.7%	7.7%
Actual mortality	3.1%	3.0%	1.4%
Mortality index	0.56	0.40	0.18
Re-admit (30 days)	4.6%	1.5%	2.8%

The expected mortality remained the same during the past year. However, the actual mortality rate decreased significantly in 2015, leading to a significant drop in the mortality index. The re-operation and infection rates both increased during the past year, mainly caused by an increase in the re-operation for post-operative bleeding and leg infections. Therefore the re-admission rate also increased from 1.5% to 2.8% during 2015.

NEONATAL CRITICAL CARE - VERMONT OXFORD NETWORK

Both Mediclinic Middle East hospitals have been participating in the initiative for some time, with good results. Although all infants admitted to the neonatal CCUs are included in the programme, this report focuses on all infants eligible for the VLBW database (infants with birth weights between 401 and 1 500 grams or gestational ages between 22 weeks and 29 weeks). The reported performance measures have been changed to bring the measures in line with the "Key Performance" measures reported on by VON. The conditions reported in the "Key Performance" measures contribute to the long-term clinical outcomes of the infants and are used in the calculation of the "Death or Morbidity" measure.

Mediclinic Middle East treated an overall total of 382 infants in the birth year 2015, of whom 46 qualified for the VLBW database with an average birth weight of 1 113 grams (see **Table 9**).

TABLE 9: AVERAGE BIRTH AND DISCHARGE WEIGHT OF QUALIFYING VLBW INFANTS (2015)

	MEDICLINIC MIDDLE EAST	VON 2014
Average birth weight	1 113 grams	1 057 grams
Average discharge weight	2 125 grams	2 546 grams

Figure 30 reflects the average birth weight, gestation age and number of admissions for VLBW infants.

Figure 31 reflects the key performance indicators over the past three calendar years for Mediclinic Middle East as a percentage of cases. At the time of reporting, the VON annual report for 2015 was not yet published. For comparison purposes the 2014 VON results are shown as benchmarks. During 2015 there were only 46 infants in the VLBW category for Mediclinic Middle East. There was an increase in the percentage of death or morbidity cases, late infections and CLD (infants below 33 weeks) within the 2015 results for Mediclinic Middle East due to the increased acuity levels of the babies admitted into the NCCU. Cases with early onset of retinopathy of prematurity however decreased in 2015, but the incidence is still higher than the reported figure for the VON database in 2014.

The Al Noor Group tracks a number of standardised KPIs with internationally and nationally recognised benchmarks and thresholds, which will be included in future reports. Most Mediclinic Middle East indicators are part of the Al Noor KPIs. Al Noor does not use Apache and VON to compare to international outcomes and thus the data does not show predicted rates for CCU and NCCU KPIs.

FIGURE 30: AVERAGE BIRTH WEIGHT, GESTATION AGE AND ADMISSIONS FOR VLBW INFANTS - MEDICLINIC MIDDLE EAST (2015)

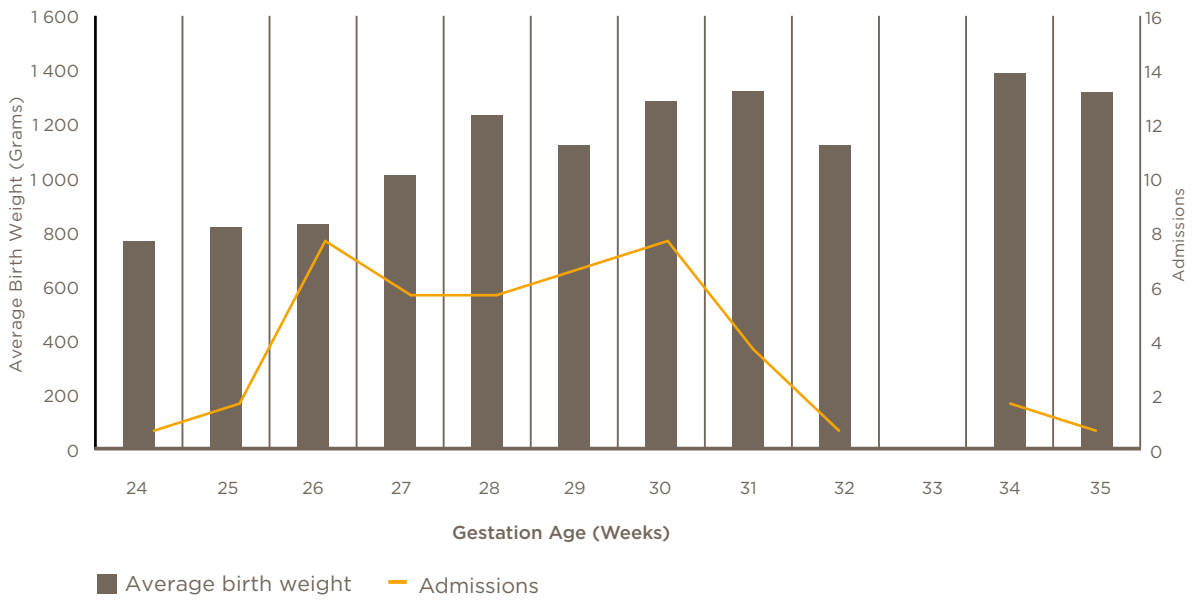
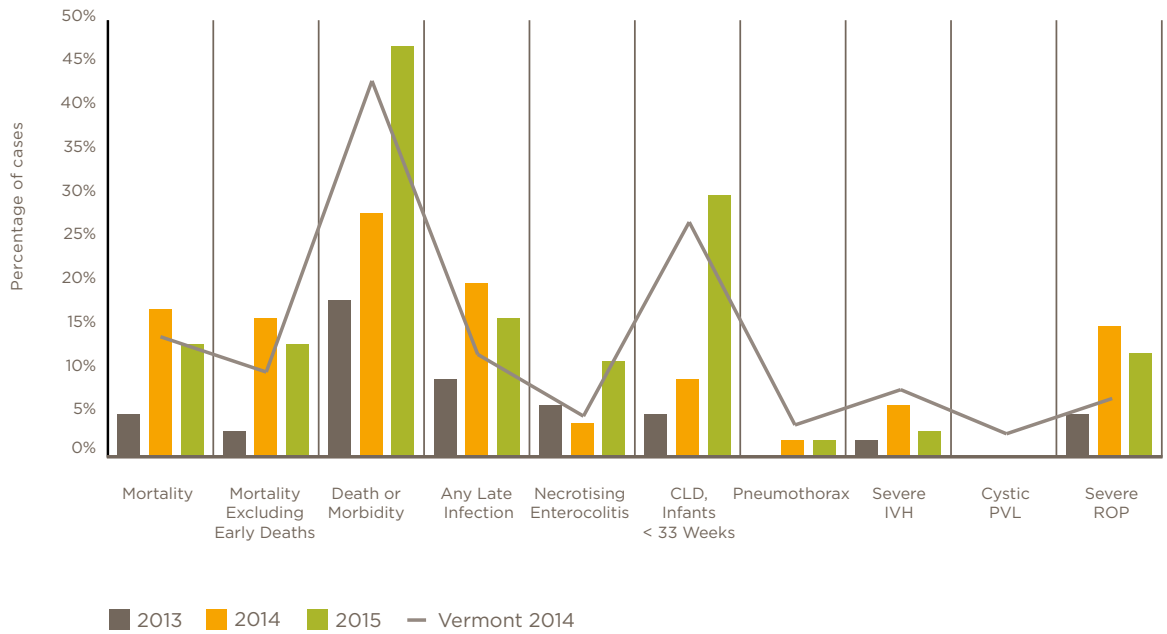


FIGURE 31: KEY PERFORMANCE MEASURES - MEDICLINIC MIDDLE EAST (2013 - 2015)



MEDICLINIC MIDDLE EAST (continued)

STANDARDS

Hospital accreditation is a mandatory requirement of the Dubai Healthcare City Authority ("DHCA"), the Dubai Healthcare Authority ("DHA") and the Healthcare Authority Abu Dhabi ("HAAD"). The DHCA appointed the JCI as the sole accreditation body in 2013 in Dubai Healthcare City. The seven ambulatory care clinics in Dubai will be re-accredited as a network in 2016.

Mediclinic Corniche in Abu Dhabi and Mediclinic Al Hili in Ai Ain will be accredited as a small network for the first time in 2016. The strategy is being put in place to prepare all the other clinics in the enlarged group for JCI accreditation according to the ambulatory care standards as part of the network in the next accreditation cycle.

In addition to the JCI accreditation, the laboratory of Mediclinic City Hospital also achieved the prestigious College of American Pathologists accreditation in 2009, 2011, 2013 and in 2015.

Mediclinic City Hospital laboratory also obtained ISO 15189:2009 certification in 2010, 2013 and early 2016.

All Al Noor facilities are ISO 9001:2008 certified. The central laboratory is currently under ISO 15189:2009 preparations.

TABLE 10: ACCREDITATION STATUS - MEDICLINIC MIDDLE EAST (2015)

	JCI ACCREDITED
MEDICLINIC MIDDLE EAST	
Mediclinic City Hospital	✓
Mediclinic Welcare Hospital	✓
Mediclinic Dubai Mall	✓
Mediclinic Middle East Clinics - Dubai	✓
Mediclinic Middle East Clinics - Abu Dhabi	2016
AL NOOR HOSPITAL GROUP	
Al Noor Hospital Airport Road	✓
Al Noor Hospital Al Ain	✓
Al Noor Khalifa Street	✓
Al Noor clinics	2019

INTEGRATED CARE

MEDICLINIC CITY HOSPITAL BREAST CENTRE

The Mediclinic City Hospital Breast Centre was established to offer patients an internationally recognised multi-disciplinary approach to breast disease management. The team offers a range of integrated breast care services for benign and

malignant diseases, including "Well Woman" reviews, tumour removal and breast reconstruction surgery, as well as aftercare. Radiotherapy will be available on-site from mid-2016. Aftercare includes the services of breast nurses and patient care coordinators, a lactation service offered to expectant and delivered mothers as well as lymphatic drainage procedures for post-operative patients. The programmes applied are individually tailored to each patient's needs, and team members work together to ensure the best treatment for the patient concerned. A protocol for the referral and management of patients with breast disease has been adopted for Mediclinic Middle East.

Mediclinic City Hospital is a regional pioneer in the field of breast imaging, with full-field digital mammography and breast MRI. It remains the only centre in Dubai to offer a full range of interventional breast radiology services, specifically stereotactic vacuum assisted biopsy, for which its services are sought from across the UAE and beyond.

MEDICLINIC CITY HOSPITAL METABOLIC CENTRE

Mediclinic City hospital established a metabolic centre with a full multi-disciplinary team involved in the management of patients with obesity. The unit was established with the guidance and input from the team from Hirslanden Klinik Stephanshorn in St Gallen.

Strict guidelines and protocols have been defined for patients to enter the programme and currently two full-time bariatric surgeons are employed by Mediclinic City Hospital. During 2015 a total of 81 patients enrolled in the programme, compared to 36 patients in 2014.

COMPREHENSIVE CANCER CENTRE

The north wing project is well underway and is located adjacent to the Mediclinic City Hospital in Dubai Healthcare City. This building will also host a comprehensive cancer centre that will be commissioned in the third quarter of 2016. The centre will include world class facilities for the diagnosis and management of cancer in the United Arab Emirates, Gulf Cooperation Council countries and beyond, and is being established in conjunction with Hirslanden in Switzerland. A set of quality criteria that has to be complied with to be associated with Hirslanden has been agreed upon. The layout of the facility, recruitment of key staff and equipment selection was done in conjunction with the team in Switzerland.

The concept of organ centred tumour boards was established for breast and gastrointestinal cancers with the intention to expand the concept to other cancer sites by the end of 2016. A clinical research coordinator was appointed at Mediclinic City Hospital to coordinate the clinical research process and develop policies and procedures for clinical research.

PROGRESS AGAINST OBJECTIVES

“PATIENTS FIRST” AT MEDICLINIC

- Mediclinic Middle East appointed a group patient safety officer, established a quality department and updated its patient safety strategy.
- New clinical indicators were implemented, and a central repository created.
- Standardisation and improvement of clinical information and documentation made good progress.
- The development of clinical KPIs for doctors is well underway.
- The clinical services departments of Mediclinic Middle East and Al Noor have been combined and initial steps were taken to integrate all activities.

TRANSFORM FROM AN INFRASTRUCTURE PROVIDER TO A HEALTHCARE SYSTEMS PROVIDER

- An academic collaboration agreement with Mohamed Bin Rashid University of Health Sciences had been signed with Mediclinic Middle East as an accredited external training facility for medical students.
- The current Breast and Metabolic centres at Mediclinic City Hospital underwent further development to streamline clinical processes.
- Clinical services planning for the new comprehensive cancer centre has been concluded.

CLINICAL INFORMATION SYSTEMS

Mediclinic Middle East has postponed its selection and implementation process of a new clinical health information system, as Al Noor has a similar need. A new combined process will be followed to select and implement a single solution for both businesses.

FUTURE OBJECTIVES

PATIENTS FIRST

Mediclinic Middle East will:

- focus on the full integration of clinical services of the combined group,
- formulate a clinical strategy for the combined group,

- implement clinical KPIs for doctors,
- implement new clinical indicators, and
- implement a clinical indicator dashboard.

FACILITY TO SYSTEMS PROVIDER

Mediclinic Middle East will:

- implement the new comprehensive cancer centre services and processes in the Mediclinic City Hospital North Wing, and
- develop clinical pathways as part of preparing for the implementation of DRGs.

CLINICAL INFORMATION SYSTEMS

Mediclinic Middle East will follow a combined selection process in identifying an appropriate clinical information system for the combined group.

CONCLUSION

Clinical services that provide efficient, effective and safe patient care of the highest standard are what Mediclinic is all about. With effective clinical leadership structures, a strong focus on patient safety and an integrated approach to delivering care, Mediclinic is well positioned to provide excellent value to its patients well into the future.

COMPANY INFORMATION

COMPANY NAME AND NUMBER

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SEDOL Number: B8HX8Z8
EPIC Number: MCI
Primary listing: London Stock Exchange
(share code: MDC)
Secondary listing: JSE Limited (share code: MEI)
Secondary listing: Namibian Stock Exchange
(share code: MEP)

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Dr E de la H Hertzog (ne) (Chairman) (South African),
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Cl Tingle* (Chief Financial Officer) (South African),
JJ Durand (ne) (South African), JA Grieve (ind ne)
(British), S Keating (ind ne) (Irish), Prof Dr RE Leu
(ind ne) (Swiss), N Mandela (ind ne) (South African),
TD Petersen (ind ne) (South African), DK Smith
(ind ne) (South African), I Tyler (snr ind) (British),
PJ Uys (alternate to JJ Durand) (South African)

* *JP Myburgh will be appointed as an executive director
and the Chief Financial Officer of the Company with
effect from 1 August 2016, in the place of Craig Tingle
who retires on 15 June 2016.*

COMPANY SECRETARY

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at the standard rate. You can also use their website
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found at www.capitaassetservices.com.

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(a division of FirstRand Bank Limited)
NSX (Namibia) sponsor: Simonis Storm Securities
(Pty) Ltd

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South African legal advisors: Cliffe Dekker Hofmeyr Inc.

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COMMUNICATION AGENCY

Bell Pottinger