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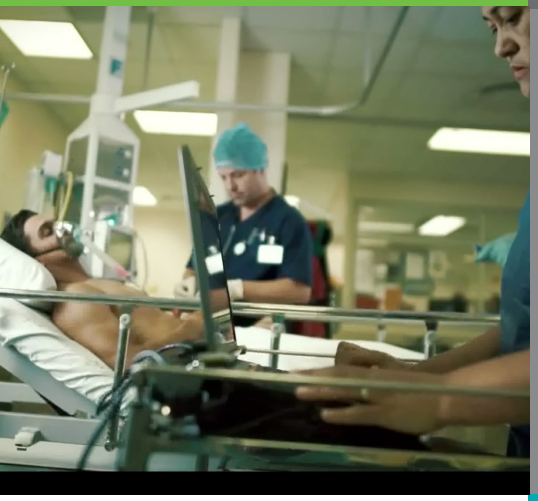

Middle East & Africa | South Africa | Healthcare

# Towards a digital hospital – **AME revolutionises patient care** by creating a paperless, filmless environment

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'Dimension Data has helped AME Africa to become a **centre of excellence for the Group by helping us to create a state-of-the-art paperless and filmless healthcare environment.**'

Bryn Woombell, Director: AME Africa Healthcare.

## Challenge

- creating a paperless, filmless environment that offers healthcare workers universal, immediate access to patient records at the Inkosi Albert Luthuli Central Hospital in Durban, South Africa
- improving patient care by delivering more accurate patient information faster
- outdated server and storage technologies that offered no longevity required for patient information
- keeping costs low and employing and training the right resources to support a sophisticated IT environment
- IT interfering with the clinical care of healthcare workers by adding cumbersome administration and lack of mobility

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## Solution

- a long-term partnership approach offering strong vendor relationships, an outcomes-based focus, and a clear future vision
- consulting and professional services, involving research, implementation, and integration of appropriate technologies
- a new data centre server platform, based on Cisco technology
- a storage and disaster recovery system based on EMC technology
- a virtualised desktop environment based on VMware technology
- wired and wireless networking infrastructure that enables mobility

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## Result

- transformation of patient care through complete digitalisation of all processes and documentation
- seamless integration with medical equipment, ensuring complete, accurate, centralised patient records
- mobility of healthcare workers in the hospital – ability to access patient records using any device, from anywhere in the facility
- improved, immediate, accurate emergency care thanks to automatic merging of anonymous and known patient records
- sound disaster recovery and backup plan in the form of data centre failover to ensure all patient information remains accessible 24/7, regardless of internal or external events
- new possibilities in the form of long-distance and remote patient care thanks to digitalisation of patient information and better end-user connectivity

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Challenge

## Making patient data pervasive

Information saves lives. Nowhere is this truer than in the healthcare industry. The future of medical care lies in the universal, immediate accessibility of patient records for all authorised healthcare workers. The faster and easier a clinician can view a patient's full history and related information, the more accurately and quicker decisions can be made about appropriate care, and the better and more immediate the help will be that the patient receives. These are the principles on which AME Africa has built its long-term vision and 20-year legacy as global healthcare technology solution provider.

AME is the crucial link between the medical fraternity and its patients, offering extensive know-how in developing, implementing, operating, and financing international healthcare projects. By taking a comprehensive and integrated approach to client needs and offering tailored solutions, AME creates sustainable benefits for its clients and thereby improves healthcare delivery to patients.

'We aim to create paperless, filmless environments,' says Bryn Woombell, Director: AME Africa Healthcare. 'When you transform a hospital that used paper-based patient records and film-based scanning systems into one in which all information is digital and immediately accessible, patient care improves dramatically. In the end, more lives are saved, and both patients and doctors are happier. That's what drives us.'

## Outdated systems offer no longevity

When AME Africa was established in South Africa in the late 1990s, part of its remit was managing the day-to-day operations of the Inkosi Albert Luthuli Central Hospital in Durban. This public hospital is exclusively referral-based and, at the time, faced several challenges relating to the storage and management of its patient records.

'First of all,' says Woombell, 'the hospital had an ageing server, storage, and back-up environment. It was clear to us that the systems we had in place wouldn't see us through the next five years, particularly not in light of our vision of maintaining a paperless, filmless hospital. We needed to find long-term technology solutions that will last the lifetime of a patient. You can't migrate healthcare systems as easily as in other industries owing to the sensitivity of the information. You need a solid, reliable environment that you can upgrade gradually over time without the need to rip and replace. In fact, the longevity of information systems is a key challenge in the medical industry as a whole.'

## Lack of funds and skills in medical IT

Cost constraints were also a concern for AME. 'As everyone knows, there's little money in public healthcare,' says Woombell. 'That's one of the reasons why you don't see large deployments of healthcare IT infrastructures in South Africa. There's not only the cost of the actual hardware and infrastructure to consider, but also the cost of managing and maintaining a sophisticated environment. You need to employ the right people with the right level of skills.

'And you also need to think of end-user training, enablement, and support – in this case, our clinicians. If they encounter a problem, you need to have the resources to address that issue immediately. You can't expect a doctor to log a call and only receive support two hours later. Time is absolutely critical in healthcare because lives are at stake.'

## IT's reputation among doctors and nurses

'So it's not only about the technology itself, but also about the people who use it,' adds Woombell. 'Unfortunately, it's true that IT doesn't have a strong reputation among healthcare workers in general. Often, their perception is that IT hasn't matured enough to make the doctor-system relationship stronger than it is today. That is, to be an enabler of better patient care, rather than an added layer of administration and an irritant.

'Clinicians want to pay as little attention to IT as they would to a pen when they're writing a prescription. Calling up patient records needs to be that simple and easy. They want the system to be immediately responsive, 24/7, and easy to use, so that they can carry on with their principal task of restoring the patient to health. This places a great demand on the IT system to deliver.'

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Solution

## A partner that takes time to understand

Finding the right technology partner was a crucial step for AME and, again, longevity was a central requirement. 'We needed to select technology that would give us the long-term solution we wanted,' says Woombell. 'But we're not technology experts ourselves. Our focus is enabling the clinician to provide better patient care. That's our end goal. This meant that we wanted to partner with an expert that could offer not only in-depth technology expertise and strong vendor relationships, but also a sound focus on outcomes and a clear future vision.

'In addition, AME needed a partner that could look at our environment completely, from the end-user device – whether it's a clinician's smartphone laptop, desktop, or tablet – all the way to the server and storage environment. Every technical aspect needed to interoperate smoothly, seamlessly, and consistently to live up to the high standards we require in a hospital.

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'Dimension Data has always followed a long-term strategy in its partnership with us, says Woombell. 'Having been involved with the business for a considerable time already, we understood its core values, which aligned well with ours. Dimension Data also spent time with us at the hospital in order to observe our current environment with its existing infrastructure and complex processes already in place, as well as to understand our unique requirements end to end. They proposed a solution that fitted within all of our constraints and met our challenges, and only then began to gradually move us off outdated and failing infrastructure to what we have today.'

## An always-on information platform

Woombell explains that the solution Dimension Data provided involved two important areas of delivery. 'The first was creating an information platform that's available 24 hours a day, 365 days of the year. This required the right server and storage equipment and a sound support, maintenance, and disaster recovery strategy.

'Dimension Data helped us divide our data centre into two separate facilities. If one room loses power or air conditioning or some other crisis occurs, there's automatic and seamless failover of the entire workload to the second data centre. The server platform spans across both rooms and meets the requirements of the applications that our clinicians need to use on a daily basis. It also solves the complexity of keeping both data centres in sync at all times. Our backup facility runs every four hours.

'These measures are absolutely essential particularly in trauma care, where time is of the essence. Patient information simply can't be unavailable owing to downtime, maintenance, or an external event such as a power outage. There's also a lot of complexity involved as the information system interfaces with medical equipment, and all that data is centralised.'

## Greater mobility, instant access

The second part of the solution was focused on creating greater mobility within the hospital. 'Clinicians move around a lot in the hospital,' says Woombell. 'So the traditional way of logging in and logging out of IT systems simply wouldn't do. It wastes time and is too cumbersome. That's why creating a virtual desktop environment was critical. Dimension Data did substantial research to find a solution that could be implemented and configured in such a way that it provides clinicians with immediate access to patient records from wherever they are in the hospital, using any device. But there were also legal limitations. Medical information must meet compliance regulations to avoid legal repercussions if data isn't handled securely and confidentially enough.'

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Result

## Patient care transformed

Helping AME to retain Inkosi Albert Luthuli Central Hospital as a paperless, filmless environment has transformed patient care at this facility for good. 'As all processes and documentation are now digitalised,' says Woombell, 'from registration, placing test orders, writing prescriptions, to receiving results. From the moment when a patient comes through the door, clinicians can make immediate, detailed notes directly onto the patient's record - not scribbles or partial notes on various pieces of paper. That record is then visible and accessible as a complete document to all other healthcare workers on the premises. We can review and control it centrally. Even records such as recent radiology reports, or laboratory tests are visible, which reduces the need for new tests or scans. This saves the patient or the medical scheme money, because there's no unnecessary duplication.

## Information at the doctor's fingertips

There are massive benefits for the users of the technology, too, says Woombell, 'particularly doctors. Our hospital treats only referral cases. Treating a new patient each time can be daunting, particularly as patients don't often have the clinical knowledge and/or language to explain their medical history and conditions accurately. With a full medical record immediately accessible even before the doctor's consultation, the doctor has a full view of the patient and needn't waste time asking the patient to repeat information he/she has had to explain many times before. Information such as known allergies, diagnosis, and treatment history, medicine and prescription records – everything is literally at the doctor's fingertips.'

## Emergency care in real-time

'In a hospital that's fully electronic, real-time takes on a whole different meaning – for emergency care, it's a matter of life and death. When you arrive at the hospital, there can't be any focus on IT at all. But for a doctor to treat you, the hospital must record you on the system immediately, even through an anonymous record to start with if you're unable to communicate. The moment the hospital has identified you – whether by surname, or mobile number, or address – the anonymous record can be automatically and immediately merged with your named record, and will provide all the information that the trauma personnel would need to treat you safely and accurately.

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## The future of healthcare: remote care

'The system even makes trauma care at a distance possible,' says Woombell. 'A patient who's been in a motor vehicle accident hundreds of kilometres away can be taken to the nearest facility for whichever scans are deemed necessary. Those can then be electronically shared with a specialist at the hospital, who can do an immediate diagnosis and recommend not only effective emergency care, but also the appropriate mode of transport to get the patient safely to the hospital.

'In fact, the future of healthcare is remote patient care,' adds Woombell. 'Patients in far-flung areas wouldn't need to be in the same room as a specialist in order to get the best possible attention. Think of the implications for elderly care, too, where patients are too weak to be transported long distances. A healthcare worker present at the patient's bedside, wherever it may be, can electronically connect to a specialist at the hospital, and can perform any number of treatments under direct supervision by the doctor. Technology opens up a whole new future for long-distance patient care, but it's a future that starts with a paperless, digitalised hospital environment.'

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## Solutions Delivered

Consulting and professional services to research, implement, and integrate:

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