



Compromise-free ECG at just 20% of the usual cost may enable nationwide testing for CVD

Cardiovascular disease is a major health problem throughout the Middle East. In nations such as Saudi Arabia, age-standardized mortality rates for CVD exceed 400-per-100,000. And those rates can be even higher in neighbouring nations.

Fortunately, there are scores of healthcare professionals battling the disease these days – including those at the Riyadh-based King Faisal Specialist Hospital & Research Centre (KFSH&RC).

This pioneering institution is an acknowledged leader in many disciplines – including cardiovascular care.

“We pride ourselves on being one of the world’s premier centres in the cardiovascular arena,” said Majed Fayyadh M.D., Consultant Paediatric Cardiologist. “We offer the full spectrum of advanced cardiac diagnostics, assistive devices and interventions, routinely performing procedures ranging from congenital cardiac surgeries to heart transplants.”

The facility

King Faisal
Specialist Hospital
& Research Centre,
Riyadh, Saudi Arabia

The equipment

MAC 800 ECG system



Early detection is key

“Detected in time, many of the causes of sudden cardiac death can be treated successfully,” Dr. Fayyadh said. “But ordinarily, by the time underlying problems such as atherosclerosis are detected, the disease is often quite advanced.”

The best way to determine who is at risk is to conduct ECGs on individuals before they become symptomatic, he noted. But to have a major impact on mortality rates, a comprehensive, nationwide screening program would be required.

Could such a program save many lives?

Dr. Fayyadh and his colleagues are determined to find out. Working in collaboration with the Ministry of Health, they have launched a study designed to quantify such a program’s potential impact.

“Our initial goal is to go into schools to screen 36,000 students for occult cardiovascular disease, and maybe later to take this screening into malls, mosques and public gatherings. We have every reason to believe that this study could lead us to recommend a national screening program for early detection of cardiac disease.”

Reduced costs enable widespread use

There are a number of obstacles to completing such an ambitious study, Dr. Fayyadh admitted – not the least of which is equipping healthcare workers with all the ECG equipment needed to test so many people, and getting that equipment out into the field.

But they have found an excellent solution in the MAC* 800 from GE Healthcare – an ECG system that combines uncompromised performance with affordability, portability and ease of use. While this system is not, in and of itself, a cardiac screening device, cardiologists can use the ECG data it generates, along with other

information, to screen patients.

“I fell in love with this system in early 2011,” he said. “It’s compact, lightweight and very affordable – yet it doesn’t compromise on quality. It allows us to do more for less.”

These tests must be cheap if they’re going to be used widely, he pointed out.

“Having a less expensive machine – one available at roughly one-fifth the price of our most advanced equipment – reduces our costs dramatically.”

Increased access is easily achieved

Dr. Fayyadh said that he and his colleagues are focusing the first leg of their study in the Al-Qassim region – scientifically, because the population’s homogenous ethnicity and large family sizes promise to streamline data acquisition and analysis, and logistically, because the area is served by one primary provider, the Ministry of Health.

But he emphasized that it’s the portability and ease of use of their ECG equipment that will be most critical to the study’s success.

“If we couldn’t easily transport these systems, set them up and perform the tests, it would be much more difficult to accomplish our study goals. We’re thankful that the MAC 800 meets these criteria.”

In the past, acquiring ECGs in the field has meant wrestling with a much larger system – or taking just its keyboard and cables to patients, sacrificing the ability to verify an

adequate test on site. That’s no longer the case, according to ECG Technician Naser Al-Yami.

“Transporting this machine is like carrying a backpack,” he said. “It weighs just a few kilograms. And you don’t need to disassemble or assemble anything to move it, which means you don’t need help from other services. That translates into reduced work hours, which should in turn decrease overall costs.”

What’s more, the system’s user interface employs a T9 SMS mobile phone keypad design and quick-access function keys. And it connects seamlessly to the MUSE* cardiology information system.

“It makes data transmission fast and easy,” said Al-Yami. “And that enables immediate remote review or over-reading of acquired ECGs, to streamline both workflow and patient care.”

Excellent quality eliminates compromises

Affordability isn't the only criterion for an ECG system to be used for such an application, Dr. Fayyadh said. "It also has to be accurate, reproducible, and sensitive."

There are many good products available for ECG acquisition today, he said – products with good clean acquisition, good programming, adequate storage and up-to-date technology.

"But our aim was to achieve all of these things as well as easier access, all at lower cost. And that's the best news about the MAC 800 – we were able to find all of these things without compromising on anything."

He said that the system's ECG quality is as good as what KFSH&RC achieves with far more sophisticated and expensive equipment.

"We see everything we want to see, without mishaps. It's very robust. And referrers think we're using the Cadillac of ECG machines. It's everything we could ask for."

He conceded that this system does not arm users with all the bells and whistles they may have come to expect.

"But you don't need a Mercedes to run out for a loaf of bread. For this application, you just want to get an accurate ECG. This machine lets us accomplish that without adding all the extra features that make ECG more expensive, more cumbersome, and less accessible to patients outside of the hospital."

Dr. Fayyadh and his team have already acquired ECGs from hundreds of subjects, he said.

"I was nervous at first that we'd be compromising on trace quality, or have to settle for fewer leads, or run into problems with transmission. But none of these things happened. We have seen no change in quality compared to our high-end equipment."

It's a perfect fit

"Our mission is to provide the best care possible to our patients today," said Dr. Fayyadh, "and to lead the way in research and development to help ensure a healthier future for everyone."

The MAC 800 promises to play an important role in achieving these goals, he added. "It's a perfect fit, allowing us to reach more people, more cost-effectively than ever before. And that means we will ultimately be able to make a lasting contribution to healthcare throughout the region."

The experience

Affordability for widespread application

- 20% of the cost of state-of-the-art GE counterpart

Uncompromising quality

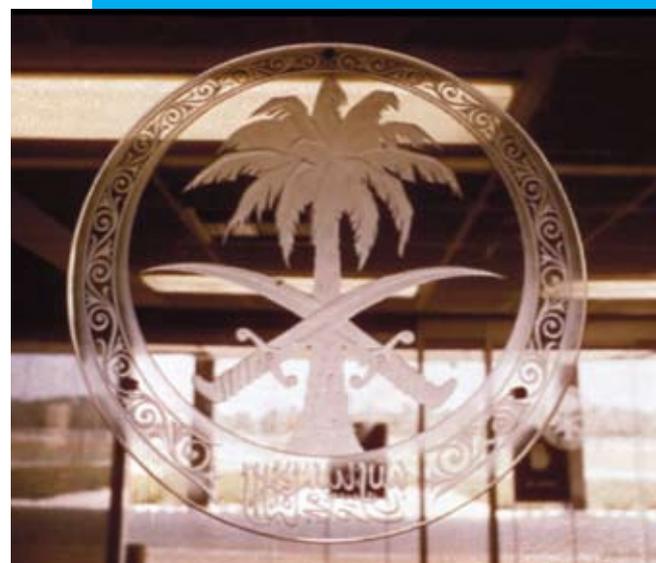
- Consistently outstanding results

Extraordinary portability

- Backpack-sized and weighing in at just 3 kg

Enhanced workflow

- Fast, seamless data transmission supports remote ECG review



About GE Healthcare

GE Healthcare provides transformational medical technologies and services that are shaping a new age of patient care. Our broad expertise in medical imaging and information technologies, medical diagnostics, patient monitoring systems, drug discovery, biopharmaceutical manufacturing technologies, performance improvement and performance solutions services help our customers to deliver better care to more people around the world at a lower cost. In addition, we partner with healthcare leaders, striving to leverage the global policy change necessary to implement a successful shift to sustainable healthcare systems.

Our “healthymagination” vision for the future invites the world to join us on our journey as we continuously develop innovations focused on reducing costs, increasing access, and improving quality around the world. Headquartered in the United Kingdom, GE Healthcare is a unit of General Electric Company (NYSE: GE). Worldwide, GE Healthcare employees are committed to serving healthcare professionals and their patients in more than 100 countries. For more information about GE Healthcare, visit our website at www.gehealthcare.com

GE Healthcare
3000 N. Grandview Blvd.
Waukesha, WI 53188
U.S.A.
www.gehealthcare.com

© 2012 General Electric Company doing business as GE Healthcare

*MAC and MUSE are registered trademarks of General Electric Company.

This document was produced for healthcare professionals. Please do not use it for other audiences.

This article is only for distribution in Saudi Arabia, GCC (UAE, Bahrain, Qatar, Kuwait, Oman) and Levant (Lebanon, Syria, Jordan, Palestine).



GE imagination at work