

# HIMSS Middle East

## Empowering patients through IT and utilising predictive analytics to improve quality of care

**SINGAPORE (November 21, 2018)** - A dedicated patient health portal, predictive analytic models and 3D

printing are some of the technologies that King Faisal Specialist Hospital and Research Centre (KFSH&RC) are using to create better outcomes for both patients and clinicians.

Established in 1975, King Faisal Specialist Hospital and Research Centre (KFSH&RC) is a 1660-bed tertiary/quaternary care and referral hospital with facilities in Jeddah and Riyadh in the Kingdom of Saudi Arabia (KSA). In November 2015, KFSH&RC achieved the HIMSS EMRAM Stage 7 Ambulatory, the first hospital outside of North America to attain this achievement.

HIMSS Asia Pacific spoke to Dr Osama Al Swailem, Chief Information Officer KFSH&RC, to learn about how the use of technology has impacted both patients and clinicians, resulting in patient empowerment in their own healthcare journey and the improvement of performance for clinicians. Mr Alaa Adel, Senior Director and General Manager, Cerner Middle East, shared his thoughts on the outlook of the healthcare sector in Saudi in the coming years, and the combined efforts of both public and private healthcare stakeholders working towards KSA Vision 2030.



Dr Osama Al Swailem,  
Chief Information  
Officer, KFSH&RC



Mr Alaa Adel,  
Senior Director and General Manager,  
Cerner Middle East

**Q: KFSH&RC was recently accredited as HIMSS EMRAM Stage 7 in Jeddah. What has been the greatest impact to patients?**

Dr Osama: The greatest impact was made by constantly engaging the patient. When we say engagement, we mean having the patient as part of the continuum of care and we are ensuring that through multiple steps - the most important one is the patient portal we call *SEHATY*<sup>®</sup> (which means ‘my health’ in Arabic).

The patient can see real-time information regarding their care and they are able to see targeted and prescribed educational material electronically. This shows that patient engagement goes beyond the boundaries of the hospital and into their homes. Their constant involvement with the portal keeps them actively engaged in managing their health – we leverage this through the capability of *SEHATY*<sup>®</sup> and *Cerner Millennium*<sup>®</sup>.

We have a lot of examples where the active involvement of patients have added value to the patient’s quality of care and their safety. The flow of patient data throughout the hospital has become seamless, and the results become immediately available on *SEHATY*<sup>®</sup>, the patient portal. By sharing outcomes and having constant patient engagement, we are creating an environment of active and educated citizens towards improvement of regional health.

**Q: KFSH&RC was recently recognised as the only organisation outside North America to be recognised as HIMSS AMAM S6. How have advanced analytics impacted KFSH&RC clinicians and patients?**

Dr Osama: We are starting to expand into home devices or the Internet of Things (IoT) by linking them to the patients’ health through Cerner, our Electronic Health Record system. With all of the data being generated we rely heavily on our analytic capabilities. We are very proud of this AMAM S6 achievement and it is a reflection of the extensive effort of our organisation to improve insights and knowledge to guide the clinical and operational decision support – to have the right information at the right time, to

the right person to make the right decision.

As part of KFSH&RCs Analytic Strategy, we began utilizing 'live' analytical dashboards – to address the problematic areas of the organization. For example, we have problems in the boarding of patients from the emergency to the inpatient/acute care areas; we created a dashboard directly from *Cerner Millennium* – that shows actual data from each area related to bed availability, resources, statuses, etc. and we distributed this dashboard to front line staff in the emergency area. Front line staff are now able to recommend and make better clinical decisions that ensure patient focused delivery. Physician data and performance is constantly displayed and this has created positive behavioral patterns of staff as they are able to baseline their daily activities to their colleagues.

An initiative that we recently initiated towards major performance improvement is called 'Zero Harm'. We want to have zero incidents for at least 1,000 days and we are capturing/analyzing multiple initiatives across the organisation to reduce infection rates. We gather information from *Cerner* to different departments in regards to infection rates and complications. We're seeing significant reduction of infections once we bring this information for everyone to see.

Predictive and prescriptive medicine is in the horizon of healthcare, so stay tuned!

**Q: What is KFSH&RC's vision in regard to how advanced technology can improve clinical care?**

DO: The future of healthcare is in advanced analytics, whether it is genome sequencing, in administration, managing the organisation or patient care delivery. We are able to take data and create personalised medicine through the genome project which is another part of advanced analytics. We are able to create an analytics strategy that is internationally aligned to other healthcare organisations and improve the management of healthcare and direct patient care. We want to improve the efficiency of healthcare providers, whether they are seeing enough patients – not just the number but the quality of care, more of value-based care.

In addition to the advanced analytics, we are also focusing on virtual care, where you extend care outside the workflows of the hospital or any other healthcare organisation, in reaching patients at their location, whether they are at home or travelling, and advise them accordingly.

We have an advanced ICU infrastructure, where we have linked 28 centres around Saudi Arabia to KFSH&RC. Another technological driven initiative that we started three years ago is 3D printing; we are using it for cardiology, orthopedic and dental related uses. The other thing we are embarking on along with a local university here is to explore the possibility of utilising blockchain in healthcare. We are still in the concept phase – and hope to have a proof of concept completed by the end of the year.

**Q. What are the main drivers of new demand for quality healthcare in Saudi Arabia in the medium to long term? What is the outlook for the sector in the medium to long-term?**

Alaa Adel: I would say similar to what Dr Osama has mentioned – we are working in the same region and engaging in the same issues and the same problems day in and day out. Healthcare has been advancing just like any other region over the last couple of years and we're seeing that the most advancement in healthcare IT come to fruition over the last 10-15 years. Along with healthcare advancement, we see the

advancement in sharing information – whether it is through social media or online. There is a lot of information shared across the globe, a success story in healthcare in any part of the world can be easily accessed by our patients.

The biggest driver for quality healthcare is the patients themselves. They do not just have access to information out there, they also have access to their health records, whether it is through their Fitbit, diabetes device or Apple watch. We see the patients getting educated on what is possible and we see them getting into a more active role in their own healthcare, which will demand excellence from the healthcare provider immediately.

They will demand the quality of care they have seen in another place, they will demand a higher level of engagement from the data they have from their personal devices. In the medium-term, I see patients demanding more and more information, I see them getting engaged more and more. In the long-term, I see a big wave of highly motivated, highly educated patients who will move into quality healthcare and demand the population health management of their health file to stop them from requiring admission to the hospital, to help them manage their health better and have a preventive healthcare all-in-all.

In the long-term I see all of us - government entities, hospitals, EMR vendors, partners and patients all move towards preventive healthcare that will try to reduce the patients going to the hospitals.

**Q: How do governments in the region help take healthcare to another level?**

Alaa Adel: If we look at Saudi in particular, I think having that goal, having that vision makes a huge difference. If we analyse [Vision 2030](#), you will see a lot of goals that aim towards the health of the population. Having those targets in mind, having that timeline in mind has been a big motivator for a lot of organisations and healthcare investment in Saudi.

The work KFSH&RC is doing - leading the way with their patient portal, leading the way with the predictive analytics tools, what the Ministry of Health is doing, they are all leading to the same direction towards Vision 2030.

From a Cerner point of view, leveraging healthcare IT and leveraging the data to get to a proactive approach is definitely something I think governments are doing more and more of. Dr Osama spoke about the patient portal, their engagement with the patient without them being or needing to come to the hospital, the Zero Harm initiative that KFSH&RC is doing is also another example of healthcare organisation initiative that will lead to better quality of healthcare.

I also see the government relying more and more on the PPP (Public Private Partnership) to move things faster and to ensure that all the initiatives, all the deadlines, all the timeline that we are trying to achieve are going at a faster pace and also with a team spirit. Everybody is doing something in a faster or a better way, so why not leverage all private and public organisations in one force to move this ship forward to Vision 2030?

**Q: Cerner is a leader in healthcare technologies and your systems are widely used, but what sets you apart from your competition?**

Alaa Adel: For Cerner, we are committed to the region, we have been in the region for the last 28 years and I would say our strength comes from our commitment to our clients' success. We're very passionate about helping our clients succeed, but most of the time we see ourselves as enablers to help clients achieve their goals.

We are lucky to have partners like KFSH&RC and the Ministry of Health and we are extremely lucky to have good employees and associates, and our pool of resources that we can leverage. We actually live and work in the healthcare facilities we partner with – my family gets treated at organisations that use Cerner.