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Integrated
Cardiovascular Solutions

Designing a full-service interventional center at King Fahd University Hospital

Challenge
When the King Fahd University Hospital decided to incorporate a new angio suite in 2019, it gave them a great opportunity to reimagine their interventional radiology service line. Their goal was to create one central hub for the entire process – from arrival and preparation to diagnostics, treatment and recovery. The challenge was fitting their grand vision into the space available. They turned to Philips for help.

Solution
The Philips cross-functional team spent considerable time understanding the department's way of working and the needs of stakeholders. Based on this research, they worked together with the project team to improve the initial design and select the right technology solutions to fit their space. The final result was a detailed floor plan, new clinical workflows, an exceptionally flexible angio suite for vascular and non-vascular procedures and ongoing educational support.

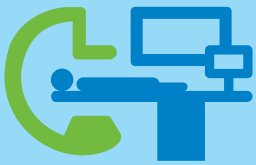
The King Fahd University Hospital in Dammam, Saudi Arabia, is a leading healthcare and research institution in its region, providing the ultimate in patient care combined with advanced diagnostic technologies. The hospital's experienced medical professionals are highly trained experts who care for patients and act as teachers for numerous medical and graduate students, as well as researchers focused on conquering disease.

Results


Concept design with detailed floor plan


Efficient clinical workflows


Ongoing educational support


Flexible angio room

"We see a very positive psychological effect on patients because the team is working around them, from the moment they arrive and are prepared through to recovery."

Dr. Bander Aldhafery

From an empty corridor to an interventional radiology hub

One of the greatest challenges for this project was reconfiguring what was previously a corridor into a full-service interventional radiology center. "We brainstormed with the Philips team about each aspect, including offices for the interventionalists, staff lounges, storage, the waiting and recovery areas, and of course, the angio suite itself," says Dr. Aldhafery, Assistant Professor and Chairman of Radiology Department, Consultant Interventional Radiologist, King Fahd University Hospital.

After collecting information about the department's current workflows and performance, and their goals for the new center, the Philips team identified potential bottlenecks and opportunities within the new space. They also interviewed different stakeholders to better understand their requirements for the new clinical processes.

The Philips team then worked with the hospital project team to refine and improve the initial design. Close attention was paid to laying out the optimal floorplan and patient flows, and creating a positive staff experience. Given the dimensions of the angio suite, the Philips consultants also advised the project team to think about a ceiling-mounted monoplane, instead of a biplane image-guided therapy system.

As part of the Managed Technology Services, Philips handled the integration of all Philips and third party components and services. This included assessment and planning, selection and procurement, integration services and maintenance management. The new facility was operational in 2020 and has been in intensive use since.

Multipurpose room with a singular focus

About 90% of the work done in the angio suite is arterial procedures for critical ischemia, aortic valve (EVAR/TEVAR), venous interventions and non-vascular procedures, such as tumor embolizations, so the team might need to work from the right groin, or right or left radius.

"FlexArm with its robotic arm gives us the positioning freedom we need with great access to the patient," says Dr. Aldhafery. "In addition, we can control most of the things we need at the table side from one integrated touch screen module, including IVUS, so we rarely need to go outside the room. This helps us focus on the procedure and we are not distracted by people coming and going from the room."

"We are very happy with the image quality of this system because it helps us to use less contrast medium," says Dr. Aldhafery. "Many of our peripheral patients have renal issues, and we can now decrease the amount of contrast we use. The CO_2 option also provides really great CO_2 angiography without using any contrast for patients with CINs (contrast-induced nephropathy)."

Dr. Aldhafery adds, "We are using the SmartPerfusion software for critical ischemia. It is really great, because it gives us feedback on the outcome before the patient leaves the room, so we know that the procedure has been successful."

"After looking at the Azurion with FlexArm image-guided therapy system, we decided it would take up less space than a biplane system and give us more flexibility to perform a wide range of procedures without limiting access to the patient. We are very happy with our choice."

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Dr. Aldhafery
Assistant Professor and Consultant Interventional Radiologist, King Fahd University Hospital

More efficient service and better patient experience

The ultimate goal was to create an area where all of the vascular and non-vascular services could be run without interruption. Dr. Aldhafery says, "With the new angio suite, and the waiting and recovery areas together, all of the patients can easily be moved through the process without leaving the department. This makes our workflow much more efficient and has allowed us to increase the number of procedures we perform in a shift."

"We see a very positive psychological effect on patients because the team is working around them, from the moment they arrive and are prepared through to recovery."

Ongoing educational support

Philips has provided ongoing educational support to help the clinical staff learn the new technologies. This included access to an online learning center for technologists so they can get quick guidance via their phone whenever needed.

"We are really happy with the partnership with Philips and have found them very eager about training and educating our people," says Dr. Aldhafery. "We were concerned that when we shifted to Philips it would be difficult for our staff to learn to use the new system, but it was easier than we thought. Besides the initial training, Philips has trained our technologists two or three times, and we have frequent visits from the applications specialists. They are very helpful and proactive, and gradually teach us new things when they are here."

IVUS clinical case

Dr. Aldhafery has extensive experience using IVUS for vascular interventions. When he came to the King Fahd University Hospital, it became one of the first in the region to use IVUS for vascular interventions. On the previous system, the IVUS was a separate unit that had to be brought in and out of the angio suite. Now the IVUS software is integrated in the Azurion system and can be controlled from table side.

"The combination of the table side control, using the catheter at the side of the table and displaying the IVUS images on the big screen makes it much easier to use IVUS in more complex procedures, like deep venous embolizations, below the knee interventions, arterial interventions and aortic dissection treatment," says Dr. Aldhafery.

Sharing expertise in IVUS-guided vascular interventions
Looking ahead, the two partners see an opportunity to create a center of excellence for IVUS-guided vascular interventions at the King Fahd University Hospital. "I believe that the IVUS technique is under-utilized for vascular interventions," says Dr. Aldhafery. "That's because many interventional physicians think it is difficult to use. But I think it is quite easy. There are some clinical scenarios where you need IVUS to improve your outcomes, and I believe everyone who is doing interventional radiology should be using it. You do not need a lot of imaging interpretation skills and the learning curve is actually quite short."

"The set-up we have here is quite unique and is ideal for demonstrating and teaching the IVUS technique to visitors. We are happy to host training trips to see our system and attend live cases."

Our partnering approach

To help realize your goals, Philips offers a broad range of expertise relevant for cath lab management. Through a collaborative and people-focused process, Philips uncovers deep insights and define actionable and sustainable solutions, to help you achieve clinical excellence, operational efficiency and improved care delivery for your patients.

Learn more
www.philips.com/integrated-cardiovascular-solutions

"We made the right decision to choose Philips. We are very satisfied with the partnership and look forward to further cooperation in the future."

Dr. Aldhafery

Results of customer testimonies or case studies are not predictive of results in other cases. Results in other cases may vary.

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