

【Press Release】

**Hong Kong Adventist Hospital Launches Hong Kong's First O-Arm O2:
An Advanced Imaging System Designed to Improve the Accuracy, Safety, and Efficacy of
Minimally Invasive Spine Surgeries**

[Hong Kong – November 1, 2018] With constant advancements in medical technology, the field of minimally invasive spine surgery has likewise continued to develop. To ensure its medical teams are able to provide the safest, most effective minimally invasive spine surgeries possible, Hong Kong Adventist Hospital – Stubbs Road (HKAH–SR) has invested more than HK\$10 million into Hong Kong's first O-arm O2 imaging system with StealthStation 8 navigation. Now fully operational, the O-arm system, which is one of about 1,000 installed at major spine centers around the world including Inova Mount Vernon Hospital (IMVH) and Norton Leatherman Spine Center in the United States and Steel Memorial Murooran Hospital in Japan, enhances the precision and safety of minimally invasive spine surgeries. The combination of the O-arm and StealthStation systems is recognized as the gold standard of intraoperative spinal imaging today.

Reduced radiation exposure to patients

According to Dr Clarence Leung, Clinical Director of the Minimally Invasive Spine Surgery Center at HKAH–SR, minimally invasive surgeries often involve smaller incisions, which mean that surgeons must rely on imaging equipment to better visualize the surgical site. The 3D imaging capabilities of the O-arm enable surgeons to more accurately understand each patient's condition, making the system particularly useful for spine surgeons, who often require highly detailed and precise images for minimally invasive spine surgeries.

“The previous generation C-arm provided 2D X-ray images, so surgeons were required to differentiate between bones and nerves based on their own experience,” explains Dr Leung. “If the surgeon had any doubt, he or she would have to conduct another X-ray during surgery.” Thanks to continued advances in technology, the availability of 3D X-rays today means that a surgeon who has viewed a 3D X-ray of the patient prior to the operation rarely encounters surprises during surgery and seldom requires additional X-rays. What's more, Hong Kong Adventist Hospital – Stubbs Road's O-arm O2 system is the latest model in the industry and reduces radiation exposure by 50 percent when compared to the previous O-arm model.

Safer, more precise minimally invasive spine surgeries

By simply importing O-arm images into the StealthStation 8 navigation system, surgeons are able to precisely navigate the surgical site in real time and make quick clinical decisions based on an accurate understanding of the patient's condition, further safeguarding the patient.

As an example, many patients are often concerned about nerve damage from surgical instruments or implants during procedures such as spinal fusion. “By combining these two systems, surgeons are able to clearly visualize complex anatomical structures,” says Dr Leung. “It is almost like having Google Maps for the human body.” During the procedure, the systems allow surgeons to accurately determine the placement point, position, angle, and depth of an implant in real time, preventing damage to the surrounding nerves and tissues. This is particularly beneficial for complex surgeries involving cervical vertebrae, lumbar vertebrae, and the spine, as well as procedures such as spinal fusion and other scoliosis-related surgeries. The O-arm also facilitates a range of brain and ear, nose, and throat surgeries.

Shorter surgery, quicker recovery

Another advantage of the O-arm is shorter surgery times. Without needing to move or adjust the patient or the surgical bed, the O-arm provides 360-degree imaging, a process that takes just 13 seconds. In addition, its programmable memory capabilities store patient data upon the first scan, automatically recalling exact image positions and other information during surgery.

According to Dr Leung, while it was possible to create 3D images based on 2D scans in the past, this process required radiographers to produce multiple images from different angles, often involving the movement of operating room equipment and even the surgical bed. The O-arm, on the other hand, allows for a much smoother surgical process and shorter surgery times.

The growing trend towards minimally invasive surgery

Hong Kong Adventist Hospital – Stubbs Road continually stays abreast of the latest developments in minimally invasive surgery. In 2013, the Hospital upgraded its operating rooms by installing the latest integrated systems, while in 2014, the Minimally Invasive Spine Surgery Center was established to provide a wide range of surgical and non-surgical spine treatments through the use of advanced minimally invasive spine surgery equipment. Benefits to minimally invasive surgery include: smaller incisions, less blood loss, lower risk of infection, and less pain. Many patients are able to leave their bed and move around shortly following surgery, and most are discharged within one or two days.

“HKAH–SR is a patient-centered hospital, and over the past 10 years, more than 90% of our surgeries have adopted a minimally invasive approach,” says Mr Alex Lan, President and CEO of HKAH–SR. “This year, we have allocated over HK\$10 million to upgrade our operating rooms and install some of the world’s most advanced medical systems in an effort to lower surgical risks, minimize pain and discomfort to our patients, and speed up recovery times as much as possible.”

The Hospital also believes in the importance of equipping its medical team, which comprises neurosurgeons, orthopedic surgeons, perioperative nurses, radiographers, and physiotherapists. Earlier this year, the team visited a minimally invasive surgery center in Japan to observe and learn about how to operate the O-arm and navigation systems. With plans to expand and develop, the team has also arranged another visit to

Taiwan in early December to further their training on the operation of the two systems.

Elevating the Cardiac Catheterization & Interventional Center to meet European and American standards

To further advance and develop its cardiology department, HKAH–SR invested over HK\$26 million this year in the upgrade of its Cardiac Catheterization & Interventional Center (CCIC). Scheduled to commence services in early 2019, the CCIC will feature a new biplane DSA system that elevates the entire center to meet European and American standards. “The CCIC will also include newly installed air purification systems that meet European and American operating room air standards and work to lower the risk of infection for patients,” says Mr Danny Leung, Director of the Diagnostic Imaging Department and Oncology Center at HKAH–SR.

As a response to the rising incidence of breast cancer, which is the third deadliest cancer in Hong Kong following lung cancer and colorectal cancer, HKAH–SR will also be launching the city’s first breast Computed Tomography (CT) system soon. With cutting-edge 3D imaging capabilities, the new system will play a vital role in all aspects of the hospital’s comprehensive breast health services from assessment to diagnosis and treatment.

About Hong Kong Adventist Hospital – Stubbs Road

Minimally Invasive Spine Surgery Center

Led by a multidisciplinary medical team comprising neurosurgeons, orthopedic surgeons, anesthesiologists, perioperative nurses, radiographers, and physiotherapists, the Minimally Invasive Spine Surgery Center provides comprehensive, quality care for patients suffering from spinal disorders. The center features a host of technologically advanced equipment that facilitates a wide range of minimally invasive procedures, and caters to each patient’s specific needs through targeted treatments such as injections as well as both traditional and minimally invasive surgeries.

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