Jinan Hospital Relies on Mobility, Versatility, and Reliability of Optima XR220amx to Perform Majority of Portable X-ray Exams
In the Eastern China province of Shandong is the capital city of Jinan, often referred to as the “Spring City” for its numerous artesian springs in the urban area. Nearly 5 million residents who live in the city’s six urban districts often rely on Jinan Central Hospital for their healthcare. The 2,000-bed hospital is a Level 3 Tertiary institution, providing comprehensive health services along with medical education and research. Each year, approximately 40,000 inpatients and 1.5 million outpatients receive care at Jinan Central Hospital.

In early 2015, Jinan Central Hospital acquired four mobile digital radiography (DR) X-ray units, each from a different manufacturer. One of the systems acquired is a GE Optima XR220amx. According to Chief Technician Li Fenggang and Director Wei Zhaolong, the GE system quickly became the preferred mobile DR system for technologists. “The Optima XR220amx performs the heaviest workload and is responsible for generating two-thirds of our daily portable X-ray exams,” Li says. “With this system we can take it into multiple buildings and departments, including ER/Trauma, ICU/NICU, and the bedside.”

In fact, two of the four systems purchased in early 2015 are rarely used; the third system is used for approximately one-third of the exams, but only in one building on the hospital campus. The Optima XR220amx handles two-thirds of the exams and is the hospital’s workhorse for portable X-ray exams.

The mobility of the Optima XR220amx was a key factor in the decision to purchase the system and quickly became the preferred utilization after implementation. With a small footprint, it is easy to maneuver through doorways and within rooms; this is especially important in the critical care and ER departments that are often space constrained and have additional medical devices/equipment connected to the patient. As important, the unit can drive up inclines and across thresholds—something that has been a challenge and difficult to do with the other three systems.

Li and his technologists are also impressed by the variable speed of the Optima XR220amx. “Only GE offers a variable speed that automatically adjusts to the operator’s pace.” While the other three systems can change speed, Li notes that this cannot be adjusted while the unit is being moved. It’s an important feature because when the portable DR is needed in the ER/Trauma or ICU/NICU, the staff wants to get to the patient as quickly as possible.

For Li, it is also important that the mobile DR can be moved wherever it is needed. “There is really no area where we cannot take the Optima XR220amx,” he says. When imaging seriously ill patients, this is especially important as the patient does not have to be transported to the radiology department for the imaging study. He adds that the system’s excellent wireless connectivity enables the technologists to move the unit to other buildings on the hospital campus and still upload the images to PACS, which also allows the radiologist to immediately access the study for interpretation. Two of the other mobile DR systems, Li says, use a USB network card and as a result often lose the wireless connection.

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- Li Fenggang
Two technologists were shadowed for 2 weeks and randomly.

This case study demonstrates the productivity gains at Vidant.

• The time when the images were sent from the review
• The time when the images were sent to the review workstation
• The time when all images for an exam were approved as

Time entered the patient’s room

The GE representatives have delivered excellent service and their

The Optima XR220amx user interface showing the ease of re-formatting tools, annotation capability, as well as a wide range of customization tools for the technologist.

In addition to mobility, the system has reduced the total patient exam time. “With the Optima XR220amx our workflow is much faster than before, so patients don’t need to wait as long as before to complete the exam,” Li adds.

An intuitive user interface on the Optima XR220amx helps streamline the technologists’ workflow. For example, there are fewer sub menus requiring fewer key strokes and the technologists can easily find the wireless network status.

Compared to other portable X-ray systems at Jinan Central Hospital, the Optima XR220amx offers more image processing customization tools on the technologist workstation, such as adjusting the image shutter.

Further enhancing workflow is the stand-by mode on the Optima XR220amx, which means the technologist doesn’t have to needlessly wait for the system to reboot and quickly put it into use. The Flashpad also has a “wake up” button, Li explains, so the technologists know they can begin the exam. This is clearly an added bonus in that the technologist isn’t guessing if the detector is ready or not.

Another important feature of a portable X-ray unit is the battery life. With the Optima XR220amx, the technologist doesn’t have to worry about charging the battery between studies. The Optima XR220amx has in-bin charging; the detector battery charges when the system is on and the detector is in the bin. This on-the-go charging capability means less battery swaps and less downtime compared to other solutions.

“The Optima XR220amx has an excellent battery life; one charge will get us through the day, usually 20 exams. One of our other new systems can only handle four to five exams before needing another charge, and we’ve had to replace the battery assembly on that unit three or four times already,” Li says.

Providing versatility, reliability, and mobility, it’s no surprise that the Optima XR220amx is utilized for a majority of Jinan Central Hospital’s portable X-ray exams.

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GE Healthcare provides transformational medical technologies and services that are shaping a new age of patient care.

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