



## IN LIGHT OF PANDEMIC, MORE RADIOLOGISTS MAY WORK FROM HOME

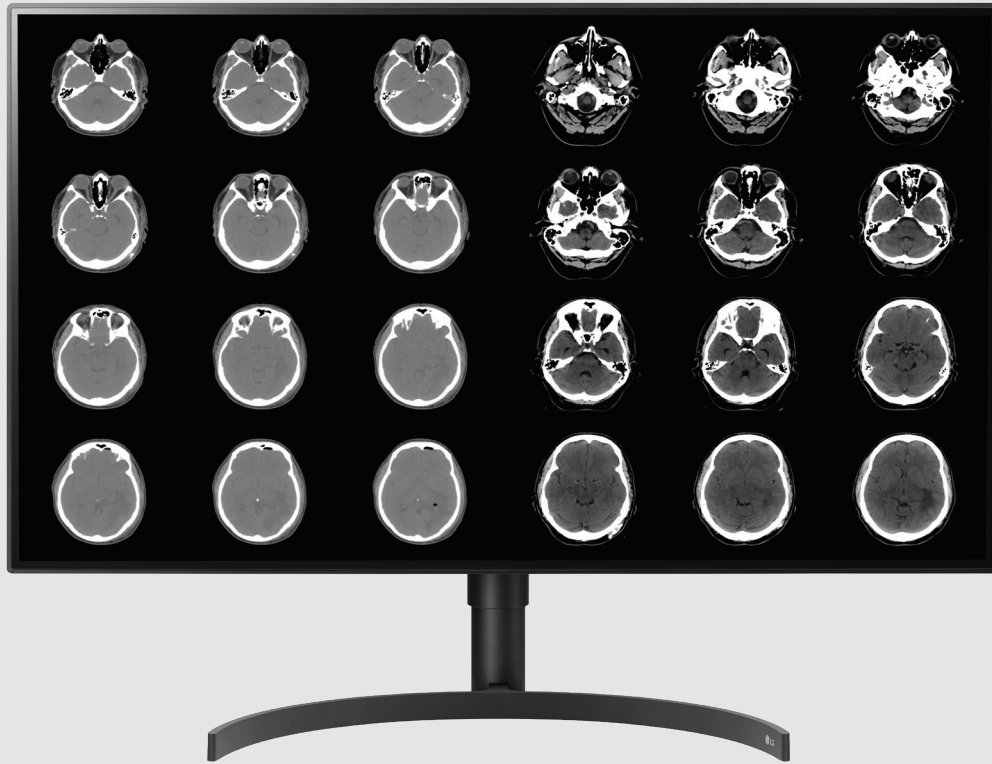
ENSURING THEY HAVE THE RIGHT TECHNOLOGY WILL BE IMPORTANT TO THEIR SUCCESS

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**Radiologist Lucas Payor, MD, remembers his first COVID-19 diagnosis back in March. He was reading a chest CT in his Southern California home office and consulting with an ER doctor, who hadn't yet experienced a COVID-19 case, either. "He told me this might be his first one, and looking at the scan, I thought it was the real deal," Payor says. "Sure enough, the patient came back positive."**

Since then, as the COVID-19 pandemic has swept the country, Payor has seen a jump in chest X-rays and CT scans related to the disease, even as overall radiology volume has dropped. He says his company has started to limit the presence of its radiologists in hospitals for their safety. Still, thanks to telerads like Dr. Payor, who work full-time from their homes, hospitals and outpatient providers are still being supported 24 hours a day, seven days a week.

"This is an essential piece of the healthcare puzzle," he says, just before starting his 3 p.m. to midnight shift, when Dr. Payor typically reads 80 to 110 studies. "It allows more flexibility, but most importantly, it allows for images to get read in a timely fashion, around the clock."



Doctors writing for the Radiological Society of North America (RSNA) expect COVID-19 to severely impact the industry, with declines in imaging volume of up to 70 percent and lasting as long as four months. But they expect it to bounce back. In their article in *Radiology*, Joseph Cavallo, MD, and Howard Forman, MD, MBA, conclude: "Demand for most imaging services should rebound above historical baseline levels as deferred, but necessary, imaging gets scheduled."

Among the ways the authors expect radiology to be affected by the pandemic — and one way they say practices could prepare for the coming demand — is through more teleradiology. "Practices could be permanently redesigned as radiologists become more comfortable reading remotely," Cavallo and Forman say.

Already, healthcare systems are adjusting to handling more radiology outside of healthcare facilities. In a separate Radiology preparedness study, the RSNA collected best practices from a variety of hospital systems, including Atlanta-based Emory University's School of Medicine, New York University Langone Health, and the University of Wisconsin, Madison, Hospital. All indicated an effort to allow radiologists to work from home.

## THE NECESSARY TECHNOLOGY

Ensuring remote radiologists have the tools they need, therefore, is critical. Not only do they require a computer system to run their preferred PACS (picture archiving and communication system), they need diagnostic monitors that allow them to read images with a high degree of accuracy.

With a variety of off-the-shelf consumer displays available, it may be tempting to shop for teleradiology technology at a big-box electronics store, but such technology is usually less reliable than monitors designed for medical use, and typically doesn't meet digital imaging standards set by organizations such as the American College of Radiology (ACR) and American Association of Physicists in Medicine (AAPM).

For his part, Dr. Payor operates three monitors at a time — one regular computer work list monitor to display his PACS application and a pair of high-resolution, 8-megaixel LG medical monitors for viewing multiple images at once.

"The more pixels, the better," he says. "In particular when reading plain films, the medical monitors allow me to see very subtle irregularities."

When looking for display technology to support teleradiology, there are a number of things to keep in mind.

### BEGIN BY ASKING WHAT THE RADIOLOGIST WILL BE READING.

Two important attributes of diagnostic monitors are spatial resolution (measured in megapixels) and brightness (measured in candelas per square meter squared, or cd/m<sup>2</sup>). For reading mostly CT scans and ultrasounds, for example, a monitor capable of 250 cd/m<sup>2</sup> brightness may suffice. But a more general-purpose device, capable of also reading X-rays and similar images, should output 350 cd/m<sup>2</sup>, according to guidance from the ACR and AAPM, and deliver 3 megapixels (MP) of resolution. And mammography, with its imaging subtleties, requires a very high-brightness monitor of 420 cd/m<sup>2</sup> and deliver a minimum of 4MP.

### MAKE SURE THE MONITOR IS CALIBRATED TO PREVAILING DICOM (GSDP PART 14) STANDARD.

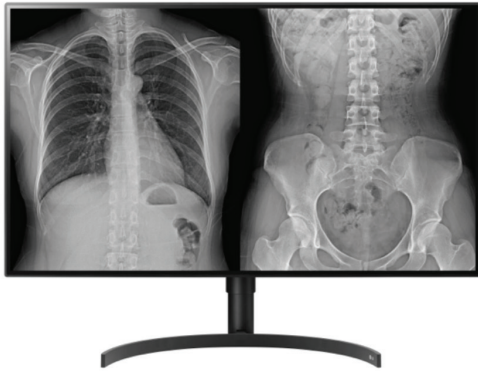
If it's used to view medical images, it must comply with DICOM standards that ensure visual consistency and proper luminance. The best monitors come DICOM-calibrated out of the box and have built-in backlight sensor and calibration software to ensure they maintain proper DICOM levels.

## TODAY'S LARGER MONITORS CAN TAKE THE PLACE OF TWO SEPARATE DISPLAYS.

While some radiologists use multiple monitors to “hang” images side by side, larger 32-inch (diagonal) diagnostic monitors, such as those by LG, can emulate this hanging protocol on a single screen. This “picture-by-picture” (PBP) mode can save desk space in a home office while still providing a pair of high-resolution 4MP screens for examining multiple views in fine detail.

## MAKE SURE THE MONITORS USED CAN CONNECT TO THE RADIOLOGIST'S COMPUTER OF CHOICE.

For teleradiology especially, it makes sense to use a laptop computer so it's mobile in case, for example, the IT department needs to do maintenance. But whatever the workstation — especially when it's driving two monitors or a monitor set for PBP — ensuring each has the I/O ports (or appropriate adapters) to communicate with the other is key. For two monitors or PBP, the computer needs two output ports.



Beyond tech specs, consider technology providers that will ship a replacement if they need to fix a faulty monitor, or even one that sells both monitors and laptops for a more streamlined procurement experience.

Dr. Payor explains that all of his radiologists are provided a teleradiology workstation from the get-go, enabling them to work from home and setting up the company to service healthcare clients around the clock — especially now.

“There is this need for [teleradiology], because procedures will eventually have to be done more regularly in the hospital,” he explains. “At this time, our group has worked diligently to minimize the number of rads in hospitals and redistribute them to work at home more.”

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