

ARKANSAS CHILDREN'S HOSPITAL

CUSTOMER PROFILE: Synapse® Enterprise Imaging





Arkansas Children's Hospital

Andrew Dick, Applications Development Director

Human Touch and High Tech to Support a Very Special Mission

Delicate organs, tiny blood vessels, and still-developing immune systems. Add to that the inability to communicate about their pain and symptoms, and these are just a few of the unique challenges clinicians encounter when diagnosing and treating pediatric patients.

Caring for the smallest and most vulnerable patients is a very specific and special mission, and it's one the team at Arkansas Children's Hospital (Arkansas Children's) takes very seriously.

Arkansas Children's is the only health system in its state solely dedicated to caring for children, and when it comes to care quality, the organization repeatedly raises the bar. In U.S. News & World Report's 2020-21 Best Children's Hospitals rankings, Arkansas Children's ranked in four specialties including Cardiology & Heart Surgery, Nephrology, Pulmonology, and Urology.

Located in Little Rock, Arkansas, Arkansas Children's Hospital is among the largest pediatric hospitals in the country and a Level 1 Trauma Center with 336 beds and more than 500 physicians. In addition, in 2018, the health system opened Arkansas Children's Northwest, a 25-bed acute care hospital based in Springdale to serve the 200,000 children who reside in the Northwest part of the state. Finally, Arkansas Children's has several clinics in various locales that offer outpatient primary care, medical imaging services, and 18 specialties ranging from diabetes to dentistry, orthopedics to otolaryngology.

In order to ensure the highest standards of care for the littlest patients, the team at Arkansas Children's recently took a close look at their technology and decided it was time for an upgrade.

"When we started our search, the PACS we had, was just that—a PACS. It was nothing else. It was purely radiology," said Andrew Dick, Applications Development Director, Arkansas Children's Hospital.

"While originally it served us well, it didn't have some of the tools the radiologists wanted, and it also presented a lot of challenges for any kind of remote access and was really hardware intensive."

Arkansas Children's simply did not have all of the technology in place to support its rapid growth. "The technology wasn't there to do the level of expansion to all of our satellite sites, for example," said Dick. "We would have to have a dedicated PACS in every single clinic."

Soon the health system realized it needed much more than a PACS replacement. Rather, Arkansas Children's wanted a technologically-forward vendor who could supply a zero-footprint PACS so that physical workstations and downloads to the machines weren't required. Moreover, a reliable vendor neutral archive (VNA) and an

enterprise viewer were other big requirements so that physicians throughout the Arkansas Children's system had easy access to patient images and data from all departments.

Ultimately, Arkansas Children's installed three best in breed solutions from FUJIFILM Medical Systems, U.S.A., Inc. (Fujifilm)—Synapse® 5 PACS, Synapse VNA, and Synapse Mobility Enterprise Viewer.

Battling COVID-19

Ryan Hill, Radiology Manager at Arkansas Children's, says that Fujifilm's Synapse technology made an important difference for Arkansas Children's during the COVID-19 pandemic.

As with most organizations, the goal was to limit the number of unnecessary employees on campus in order to avoid spread of the virus. Reading rooms can be crowded and are not at all conducive to social distancing.

Prior to Synapse, the system's team of radiologists would have had little choice but to stay put on campus—in spite of the pandemic.

However, the organization's leadership purchased hardware for diagnostic interpretation at home for the radiologists. Then the IT team set them up "with full read, with integration to Nuance and Epic, at their homes and with full confidence that they'd get the same high quality read as they would onsite," said Dick.

"With Synapse, our radiologists were able to view and read images anywhere," said Hill. "Fujifilm's server-side PACS was able to integrate with home reading stations, so our radiologists could work from home with ease and efficiency."

"Fujifilm knew what they were talking about. There is a lot of specialization here at Arkansas Children's Hospital. Our physicians were interested in the add-ons, tools and features they like to use and Fujifilm broadened our ability to do that."

- Andrew Dick, Applications Development Director, Arkansas Children's Hospital



Arkansas Children's Hospital

Ryan Hill, Radiology Manager

As cases of COVID-19 mounted across the country including in Arkansas, Arkansas Children's radiologists were at the ready to read ultrasounds, lung X-rays and CT scans—knowing full well that a speedy and accurate diagnosis could potentially save the life of an innocent child.

Big Clinical Impact for Radiology and Beyond

It was the enterprise architecture and the enterprise VNA that drove Arkansas Children's to Fujifilm, notes Dick. Today, that technology is making a huge difference in terms of increased efficiency, enhanced workflows, and improved patient care.

"It came down to us asking, 'can you turn this into an enterprise system where we can consolidate all of the disparate images that are sitting on biomedical devices, in surgery, and in other areas like airway management?'," said Dick. "We also had great needs in the dental clinic and ophthalmology."

Now, radiologists as well as clinicians in every specialized area throughout the system are experiencing the many benefits of the innovative Fujifilm technologies.

Impact on Radiology

Arkansas Children's performs approximately 125,000 radiology imaging exams annually throughout its system. The Radiology Department comprises 15 radiologists who provide reports for the more than 500 physicians across the system.

Synapse 5 PACS is making a huge difference for this specialized, busy team. Accessibility is a major benefit, according to Hill.

"Our previous PACS had dedicated stations where you could only view and work as a technologist if you were physically at the station. With Synapse, our staff is able to access PACS and work with the images on any computer in our hospital," said Hill. "Also, previously we were unable to access PACS through our patient's electronic medical record (EMR), Epic. Now with a combination of our EMR platform and Synapse, we can access images through the patient's EMR via a built in link."

Hill says that radiology workflows have become more efficient because images are available more quickly and are viewable on any network computer in the statewide system. Exams populate rapidly on the radiologist work list, streamlining the process. Moreover, both the images and reports are viewable in the EMR for all clinicians that need access to a patient's chart.

With Arkansas Children's previous system, physicians could only view exams performed in the past 6-8 months via the EMR. Now, with Fujifilm technology, Epic integration works for all exams—not just current exams in the short-term cache.

Synapse VNA and Mobility have taken radiology technology to the next level, says Hill. "Having the capability of looking through Mobility on a tablet device allows for real-time collaboration with staff off site and onsite."

The end result, says Hill, is quicker turnaround and better collaboration between our radiologists and physicians throughout the system.

Speed is especially important for a trauma center. "Our team needs to provide quick life-saving decisions using all the resources we have. With Fujifilm's solutions, images are available to our radiology team sooner, allowing us to get critical information over to our ED doctors faster," said Hill. "This enables the Arkansas Children's team to make those split second decisions that result in better patient outcomes."

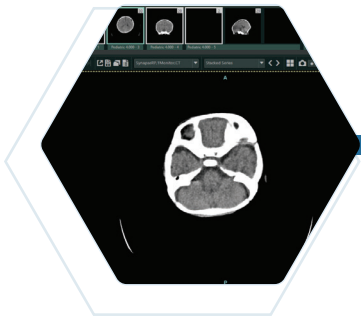
Fujifilm's technology has also eliminated the need to burn physical media for third party imaging and surgical systems in the OR, for example. In the past, those devices were not able to consistently pull exams. So, for more than a decade, the radiology department was charged with burning imaging exams to CDs—often with little or no advance notice.

Impact on Cardiology & Dental

Two "linked" clinical areas where Fujifilm's Synapse Enterprise Imaging portfolio is making a big difference are dental and cardiology. The dental program at Arkansas Children's Hospital is "super important," says Dick, because it works hands-in-glove with the system's renowned cardiology team.

"If a child gets a tooth infection, it could really jeopardize a heart procedure," said Dick. "We needed software and a system that could get those images to the dental providers in the cardiovascular intensive care unit (CVICU) during their procedures."

The former system had no way of allowing access to dental images. But now, both cardiac specialists, oral surgeons, and dentists can access those images wherever they are—in the hospital, OR, even on their phone off-site, to be better prepared to prevent and/or promptly address dental-related issues that could jeopardize the care of a cardiac patient.



Arkansas Children's Hospital

Impact on Ophthalmology

Arkansas Children's ophthalmologists and surgeons read retinal scans for babies and children across the state, which are requested by community providers outside the Arkansas Children's network.

Historically, Arkansas Children's and referring physicians were mailing USB drives back and forth with encrypted images. It was a lengthy and laborious process.

Children with retinal genetic disorders often require immediate surgery, but the collective healthcare organizations' previous technologies was not efficient.

By setting up their community ophthalmology associates with access to Mobility, Arkansas Children's specialists can now immediately receive and read studies from around the state and consolidate them into one place—so babies who need eye surgery can receive the urgent care they need.

Impact on Airway Management

Another vital clinical area where the new technology is making an impact is airway management.

"One of the biggest things we do is flag patients as they come back into our service," said Dick. "Many times kids with difficult airways have multiple surgeries, so we need to know as much as possible about their airway for the next surgery."

In the past, Arkansas Children's anesthesiologists would record airway issues, writing it all out by hand into the child's record.

"Now we are working on a project to capture the images of that difficult airway from a clinician's device and store that in the VNA so clinicians can get to the images from inside the patient chart," said Dick. "This is at the top of our list as that's one utilization that I think will be really impactful: because we can combine all the other data and say, 'hey, flag this kid; we need to do a pre-op visit,' or if they show up in the ER, the doctors know right away that they need special airway considerations."

In short, whoever at any given moment is dealing with a particular child who has a compromised airway can see it before they go in. That means they can take all the necessary steps in advance to ensure safety and stack the deck in favor of a better outcome.

Impact on IT

While any health system knows that better patient outcomes are the name of the game, it's imperative that new technology does make a positive impact on IT as well.

That is most certainly the case with Arkansas Children's.

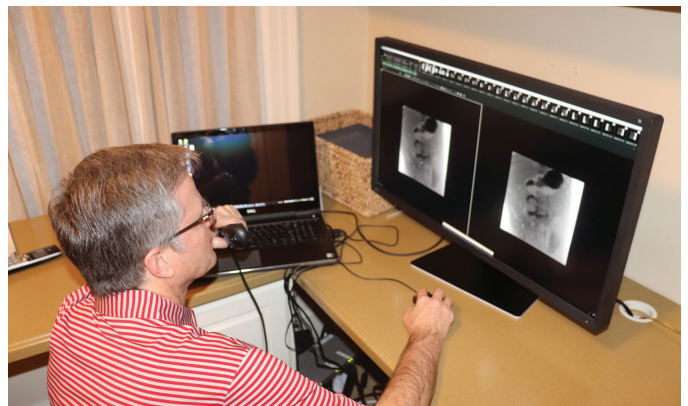
"We struggled with our former solution because it was required to be on physical hardware," explained Dick. "Not having to manage 120 or more PACS reading workstations is a game changer."

Today, every single system throughout Arkansas Children's has Mobility and Synapse 5 PACS. That means every place that physicians might log in—including their home—has a diagnostic viewer. They can view images from their house, their phone, or whatever workstation they log into.

For the IT group, this means less time troubleshooting multiple problems on numerous machines. The upshot: Significant savings in both time and money, and happier users - the clinicians IT serves.

"Fujifilm knew what they were talking about. There is a lot of specialization here at Arkansas Children's. Our physicians were interested in the add-ons, tools and features they like to use," said Dick. "Fujifilm broadened our ability to do all of that."

It is the combination of human touch—expert clinicians, technologists, and nurses—coupled with the right technology that is helping to Arkansas Children's continue to raise the bar in pediatric care.



Arkansas Children's radiologist Charles James uses a home reading station to examine patient images during the COVID-19 pandemic.

To learn more about Fujifilm's Synapse Enterprise Imaging solutions, please visit [ei.fujimed.com](https://www.fujimed.com).