

# Single Database Solution Unifies Group's Approach to Reading In Rural Oklahoma

Founded in 1969, Diagnostic Imaging Associates (DIA) initially provided Oklahoma's rural hospitals and clinics with "circuit-riding" radiologists that would read cases once per week for a few hours before moving on to the next facility on their list. While these circuit riders provided a valuable service to the rural communities, as technology advanced, it became clear that there was more that could be done for these communities. Today, DIA has grown from a two-man operation into a radiology physician group with more than a dozen radiologists that specialize in MRI, CT, X-ray and all interventional radiology procedures. The group relies heavily on a robust telecommunication network that is run by the state of Oklahoma to provide radiological testing for patients and diagnostic image interpretation. DIA's focus is on treating patients with the least invasive means at the highest success rate. Among their customers are Tulsa Regional Medical Center and its affiliates, Cancer Treatment Centers of America and several small community hospitals throughout the state. DIA also provides fellowship opportunities in interventional radiology and a residency program for radiologists in training.

## The Oklahoma Telemedicine Network and OneNet

Circuit riders supplied by DIA and other subspecialty groups served a valuable purpose to the residents of rural Oklahoma. In an effort to provide better service using the technology available, the Oklahoma State Legislature signed a bill in the early 1990s to create the Telemedicine Advisory Council. This council set about leveraging advancements in Internet technologies which led to the creation and initial development of the Oklahoma Telemedicine Network (OTN) in 1993. OTN placed new high-bandwidth connections or used existing high-bandwidth connections between 45 hospitals throughout rural Oklahoma to better serve these communities. The communications lines were used for telemedicine, video conferencing and other types of point-to-point communication between hospitals, physicians and their patients. Toward the end of the 1990s, OTN was turned over to OneNet, which is run by the Oklahoma State Regents for Higher Education and is operated in cooperation with the Oklahoma Office of State Finance.

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A native of rural Oklahoma himself, DIA's president and a long-time proponent of telemedicine, Dean Fullingim, D.O., understood that the state's rural population required access to radiology services. However, because fewer and fewer physicians were being trained as radiologists, access to those services was limited. Dr. Fullingim saw potential in the network being run by the state and set about making use of this valuable resource. Working at Oklahoma State University at the time, he devised a way to put the medical school's telecommunications infrastructure to work in order to provide teleradiology services to rural Oklahoma. Leveraging OneNet's infrastructure Dr. Fullingim made it possible for patients in rural communities to receive diagnosis and treatment without traveling long distances or waiting for a circuit-riding radiologist's weekly visit.

DIA has grown considerably since inception. Today DIA comprises a dozen radiologists reading for 41 facilities from eight central locations around the state. This growth and the advancement of technology by way of advanced visualization applications for CT and MR has meant using solutions from multiple vendors to get the work done. Dr. Fullingim and DIA's director, systems technology, Allen Noland, knew it could be done more efficiently.

## From Multiple Vendors to One Solution

In late 2004, DIA set out to consolidate their efforts. The group practice was using systems from three different vendors to provide interpretive radiology services to their customers. DIA's homespun radiology information system, DIA RIS, tied the three solutions together so any solution they selected needed to be

standards based and must interface to the RIS seamlessly. This is because DIA RIS currently handles patient scheduling, film requisitions and reporting for the group's busy reading environments. In an effort to end the frustration associated with using several solutions to complete their work, Dr. Fullingim and Noland needed a single solution to provide cross-sectional imaging tools, efficient telemedicine and standard radiology imaging — all features that their current three vendors provided.

After considerable research and evaluation of several solutions at the annual Radiological Society of North America (RSNA) exhibition in Chicago, DIA launched a pilot project to evaluate ScImage's Enterprise PACS, PicomEnterprise. What attracted the two telemedicine veterans to the PicomEnterprise solution was its Web-based design, combined functionality for key components of their workflow and consistent user experience. The solution was also cost competitive.




Timothy T. McCay, D.O. reading a CT on PicomEnterprise at DIA's Telerad room at Tulsa Regional Medical Center. Images are selected using DIA's proprietary RIS application (located on the right monitor).

Shortly after the evaluation began, a decision was made to move the entire group off the existing combined product approach and onto ScImage's PicomEnterprise solution. The impetus for the decision was that DIA could begin reading all exams from their 40-plus institutions using a unified platform.

According to Noland, "Because of ScImage's single database approach, the solution is easy to manage and

administer. I no longer have to maintain three solutions and the data being stored on our PicomEnterprise server is seamlessly delivered to our physicians through our DIA RIS front-end. In addition, the built-in visualization tools for MPR and Oblique Slicing make image interpretation and manipulation much easier because our radiologists don't have to move to a separate workstation."

In fact, DIA currently reads an average of 900 radiology exams per day from outlying facilities that are interconnected via the OneNet network. Using the Web-based PicomEnterprise solution, a dozen reading radiologists provide primary interpretations for CR, CT, MR and ultrasound from eight facilities around the state. By eliminating the circuit-riding radiologists, physicians can now stay in one place and provide more efficient service to more patients, more rapidly.

"DIA has been providing world class teleradiology services to the residents of rural Oklahoma for the last 17 years," stated Dr. Fullingim. "We have worked with multiple vendors during this time. We interpret more than 200,000 exams annually that come from 41 facilities around the state. ScImage helped us unify our approach to reading and now we all use the same system, the same tools and the same interface. We couldn't do that without ScImage." 

For More Information

866.724.6243

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