As a leading imaging provider throughout North Carolina, MedQuest (now part of the Novant Health Imaging group) provides a full range of imaging services from the routine to the advanced. The organization provides state-of-the-art imaging technologies that help make a difference in the quality of patient care, including the first SIGNA™ Pioneer 3.0T MR installed in the US at Novant Health Imaging Maplewood in Winston-Salem.

“Acquiring a 3.0T MR added that last piece of advanced imaging capabilities we needed to address more complex cases,” says Andrew Deibler, MD, Director of MRI for MedQuest and Triad Radiology Associates. The organization has a wide array of MR systems—fixed, open, and mobile magnets—to serve a diverse patient population from Northern Virginia to Charlotte, NC.

Making the leap from 1.5T to 3.0T was a smoother process than expected. SIGNA Pioneer has a small footprint that is similar to many 1.5T systems. Karen Snow, RT(R) MR, MR Supervisor, says, “It was a huge benefit that we didn’t have to modify or enlarge the interior room to fit a 3.0T.”
In Practice

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the ACR’s prostate imaging reporting
and data system developed to help
improve early diagnosis and treatment
of prostate cancer. Without FOCUS,
Dr. Deibler says he wouldn’t be as
confident in his diagnosis since DWI is
the key sequence for assessing lesions
in the peripheral zone.

“DWI FOCUS is a major improvement in
terms of visualization. It does not excite
tissue outside of the field of view, so
we are seeing fewer artifacts and much
better spatial resolution,” Dr. Deibler
explains. “I can see the true morphology
and margins. With 3.0T, we can achieve
very high resolution in a small field of
view and match that up with the T2w
and perfusion findings—that is very
helpful for interpretation.”

Dr. Deibler was also amazed at
how quickly GE Healthcare got the
scanner up and running. “The lack
of interruption of service was a nice
bonus,” he adds.

Setting Novant Health Imaging
Maplewood apart from its competition
by offering high-quality, high-field MR
imaging is the difference the center
was seeking, and the SIGNA Pioneer
has delivered, adds Paul Welborn,
Area Manager.

Recapturing prostate
referrals

That difference is most notable in
prostate imaging. According to Welborn
and Snow, the center was losing a
majority of its prostate imaging referrals
to a competitor that had a 3.0T MR.

“For prostate MR, the ACR recommends
a high channel count surface coil or an
endorectal coil, and a 3.0T MR except
in certain patients with implanted
devices,” says Dr. Deibler. Now, with
SIGNA Pioneer 3.0T and the 32-channel
anterior and posterior coils, the center
has ceased using the endorectal coil,
leading to greater patient comfort and
a high-quality image.

Dr. Deibler adds, “Overall, the SNR is
better at 3.0T and the combination of
better signal and high image quality
delivers the consistency and clinical
confidence we need for these exams.
Almost all the scans performed on
the SIGNA Pioneer are an upgrade in
image quality.”

Snow typically utilizes DWI FOCUS
and LAVA Flex for the prostate cases.
Dr. Deibler calls DWI FOCUS the
“workhorse” for prostate imaging and
an important component for PI-RADS,
the ACR’s prostate imaging reporting
and data system developed to help
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Andrew Deibler, MD,
Director of MRI for MedQuest and
Triad Radiology Associates.
Capturing more specialty scans

In addition to the growth in prostate imaging, Novant Health Imaging Maplewood anticipates growth in breast MR and non-contrast vascular imaging. As soon as the SIGNA Pioneer was up and running, Snow says all breast MR cases were moved to the SIGNA Pioneer from a dedicated breast MR system. In vascular, Dr. Deibler is seeing excellent image quality without contrast from the InHance sequences—and that’s critically important for patients with renal insufficiency.

The system’s high temporal and contrast resolution enables Dr. Deibler to visualize the enhancement and perfusion of a lesion. Plus, he says referring urologists appreciate the post-processed color map that clearly depicts lesion enhancement.

Since implementing SIGNA Pioneer in January 2015, Novant Health Imaging Maplewood has recaptured the erosion in prostate exam referrals. “In the first month, we had just a few prostate cases, but since the summer we have seen a substantial increase,” Welborn says. “We’ve organically grown our business with the SIGNA Pioneer 3.0T.”

Other efforts, such as Dr. Deibler educating referring physicians on the value of 3.0T through seminars and presenting cases to the local hospital’s tumor board, have also helped increase awareness of the value of 3.0T prostate imaging. These efforts have led to further discussion with urologists, who are requesting fused MR-ultrasound images to help guide biopsies and enhance patient management.

“We feel very good about the trajectory of growth with the system,” Dr. Deibler adds. “We are comfortable with both the magnet and our protocols and that helps our workflow. The combination of the pelvic array and the sequences not only generates a high-resolution prostate exam, but a consistently fast exam that is comfortable for the patient.”

“DWI FOCUS is a major improvement in terms of visualization. It does not excite tissue outside of the field of view, so we are seeing fewer artifacts and much better spatial resolution.”

Dr. Andrew Deibler
“One of our neuroradiologists saw the InHance sequence in a carotid study and commented that with the high image quality we may not need to give contrast in any vascular or angiography cases,” Snow adds.

Deibler agrees, “The non-contrast MRAs for renal, AAA, peripherals, and carotids have been fabulous. We’re excited to have the capability to do more of these types of studies.”

While the center hasn’t yet added new studies for abdominal imaging, Dr. Deibler sees an opportunity to utilize DISCO as well as MR Touch in the liver. “We are getting excellent image quality, less motion, and improved characterization of liver pathology. The MRCP studies on the SIGNA Pioneer are typically better quality than what I’ve seen elsewhere,” he adds.

With the “bread and butter” cases, such as MSK and neuro, the center is delivering a high level of service to patients and referring physicians. With Cube FSE, Snow is acquiring very high resolution in thin slices with great contrast and spatial resolution. Dr. Deibler wants to utilize Cube to investigate neurography in body imaging, for example in the lumbar spine, brachial plexus, and pelvis, to potentially detect previously undiagnosed sources of neuropathy.

He also wants to explore the FatSat options for visualization of peripheral nerves.

While admittedly “still in the infancy of discovering what the SIGNA Pioneer has to offer,” Dr. Deibler, Snow and Welborn are confident the SIGNA Pioneer will be a system that can help differentiate their practice and continue to fuel their growth.

Andrew Deibler, MD, is Director of MRI for MedQuest and Triad Radiology Associates, part of the Novant Health Imaging group, which operates more than 24 imaging centers located throughout Virginia, North Carolina and South Carolina. He completed his MD at the Medical University of South Carolina and did his residency and fellowship at Wake Forest University Baptist Medical Center. He’s board-certified in Diagnostic Radiology.

Paul Welborn is the Area Manager for Maplewood, Kernersville, and Triad.

Karen Snow, RT(R) MR, is the MR Supervisor at Novant Health Imaging, Maplewood.

Novant Health Imaging, with over 30 MR and imaging centers throughout the Carolinas and Virginia, offers a full range of imaging services including MRI, CT, Diagnostic X-ray, Mammogram, Ultrasound and Nuclear Medicine. Each center focuses on comfort and convenience with a dedicated and highly-skilled radiology team committed to delivering the most remarkable experience in every dimension, every time. All exams are interpreted by board-certified radiologists whose experience helps referring physicians make diagnoses necessary to provide appropriate and timely medical treatment.