GE HealthCare

Imaging 360 at Alliance Medical

Driving excellence with digital intelligence

United Kingdom imaging provider, Alliance Medical sees potential improvement in staff productivity, device utilization, staff and patient satisfaction, and more with Imaging 360 platform from GE HealthCare.

Alliance Medical, a leading independent imaging service provider, is part of the Life HealthCare Group, a leading South African listed healthcare provider. Based in the United Kingdom, Alliance Medical serves almost 150 static sites and operates 80 mobile scanners across eleven European countries.

150

Serves almost 150 static sites

80

Operates 80 mobile scanners

11

Across 11 European countries

With MR, CT and PET/CT devices covering a broad geography and diverse patient populations, the organization is challenged to deliver consistently excellent imaging, while optimizing scanner and staff productivity and delivering a quality patient experience.

Toward those objectives, Alliance Medical in 2022 installed Imaging 360 for Operations from GE HealthCare. Imaging 360 offers capabilities that help enable enterprise radiology organizations to standardize performance across multiple sites and enhance imaging efficiency and resource allocation.

A portfolio to address radiology challenges

The Imaging 360 for Operations applications at Alliance Medical *(Figure 1)* include Imaging Protocol Manager (IPM), Digital Expert Access, Imaging Insights, Radiology Operations Module, and DoseWatch, all designed to work together to help achieve clinical, operational, financial, and staff-related objectives. Alliance Medical also has another application from GE HealthCare, namely Imaging Growth Tile.

Imaging 360 for Operations

Image Protocol Manager

- Cloud-based protocol management
- Remotely import, review, and distribute multi-modality protocols
- Track and monitor protocol deviations

Digital Expert Access

- Real-time, face-to-face virtual collaboration
- Share expertise to drive consistency
- Remote control scanner console

Imaging Insights

- Analyze workflow based on modality/device data
- Visualization of utilization, scan times etc. on device level
- Identify variation, optimize throughput and scheduling, reduce backlog

Radiological Operations Module

- Prediction analytics
- Drive enterprise-wide efficiency based on RIS Data
- Increase patient satisfaction by reducing procedures variability and exam duration

DoseWatch

- Help optimize radiation dose and performance
- Maintain diagnostic quality
- Help maintain compliance
- Drive adoption with Dose Excellence Program

Figure 1

Background

The mission of Alliance Medical is to support people and partners through the healthcare pathway to improve life expectancy.

Established in 1989, Alliance is part of the Life HealthCare Group, which serves the UK, Germany, Ireland, Italy, The Netherlands, Norway, Spain, and the Baltic Region. Alliance employs almost 1,200 staff members across the UK, about 600 at static sites and the rest on mobile units.

As of November 2022, Alliance Medical had 21 mobile CT units and four static CT units, with near-future plans to add three static CT departments. The portfolio also includes 69 MRI scanners, 27 CT scanners, and 41 static PET/CT scanners.

Alliance Medical performs nearly 400,000 MR scans and 250,000 CT scans per year, along with about 115,000 PET/CT scans.

400,000
MR scans

115,000
PET/CT scans

250,000
CT scans

Facing challenges

James Berry, head of MR Clinical Services, observes that having mobile and static units makes Alliance Medical unique, especially because the company is not responsible for booking patients for exams on mobile scanners. He and his team saw potential benefit in sharing scheduling information proactively with host sites and providing them with support, data, and advice on existing and future patient management.

James Berry
Head of MR Clinical Services

"This product will allow us to monitor protocol quality and manage the protocol database in a time efficient manner reducing the impact on the patient pathway at the start of service delivery."

Ann Heathcote, head of CT Clinical Services, cited a challenge related to imaging protocol management on the mobile units. During installation of the 21 mobile CT units, the same base protocol library was installed. However due to the mobile nature, monitoring of protocols is challenging. Additionally, they often are required to build protocol libraries for individual customers, which requires system and staff time on what could be a clinical day. "This product will allow us to monitor protocol quality and manage the protocol database in a time efficient manner reducing the impact on the patient pathway at the start of service delivery."

In addition, multiple operators in several departments made it difficult to monitor protocols across the organization. Finally, although managing protocols for the static units was not a significant challenge, organization leadership believed that oversight across the enterprise would be beneficial for regulatory purposes.

Also of concern was limited visibility to exam bookings and scanning times. Ann Heathcote notes that although Alliance Medical had such data, a more comprehensive view would be beneficial. Meanwhile, Dr. Peter Strouhal, Medical Director and leader of research and development, artificial intelligence and technology innovation, notes that his organization had been brainstorming ways to improve operational and business efficiency, create a better experience for staff and patients, and gain a competitive edge to win and retain contracts.

Successful rollout

In 2019, in its quest for improvement, Alliance Medical conducted a successful trial of the Edison intelligence platform from GE HealthCare. When offered a chance to pilot test the Imaging 360 solution, organization leaders accepted. “A number of the components of Imaging 360 fit with the problems we had identified for the business,” recalls Dr. Strouhal. “It just seemed too good an opportunity to miss.”

Implementation, a team effort between Alliance Medical and GE HealthCare, was “seamless,” and “well supported,” according to Dr. Strouhal. James Berry observes, “The project team was very knowledgeable, and they were present when we needed them. The project has been incredibly organized.”

“The adoption training has been brilliant. It has been very thorough.”

Ann Heathcote notes that despite a few technical and other challenges, which were anticipated, the rollout proceeded smoothly. A key issue was buy-in across the organization: “I fully expected some people to say, ‘This is just going to make it harder for us to do anything, and it’s not going to bring us any value.’ However, through engagement with the GE HealthCare team, everyone has come on board. The adoption training has been brilliant. It has been very thorough.”

Realizing benefits

While some benefits of Imaging 360 will take time to quantify, others were almost immediately evident.

Potential benefits include:

Better utilization of imaging assets

Standardization of imaging protocols

More efficient deployment of staff

Greater staff and patient satisfaction

New training opportunities

Equipment utilization

Ann Heathcote observes that Imaging 360 provides greater and easier oversight of operations across the enterprise from a single platform: “Using our existing business intelligence information, I would have to go into about five different reports to get only a part of what we can access on the Imaging 360 platforms.”

James Berry adds that Imaging 360 provides a highly detailed look at imaging operations: “For example, we can see when the scanners are idle. And then we can dive a bit deeper into that information. Why are the scanners idle at these times? Are there certain times throughout the day when a scanner is consistently idle? Is it because someone is taking a break? Is it because the staff was given a 30-minute patient appointment but completed the scan in 20 minutes? And if so, do we then need to look at the appointment time in conjunction with the scan time and shorten that appointment? So in effect, we can make the most efficient use of our scanners from the data provided.”

Protocol management

Ann Heathcote states that the Imaging Protocol Manager tool helped them analyse the protocol databases of two CT units. It revealed that, of the 47 standard protocols, all but 15 had deviations in some form, although the majority were minor and non-technical. The protocols were analysed, and a standard library was created. Now, when a mobile scanner visits an imaging location, site-specific protocols can be pushed out to it.

For MR scanners, IPM found a lack of consistency in protocols, according to James Berry. To address that issue, his team had done a trial to use IPM with Digital Expert Access to dial into new scanners, delete the non-standard protocols, and upload the standard protocols. He adds that harmonizing the MRI protocols in this way can save considerable time "It is no longer necessary to visit scanners spread across the country to check on the protocols."

Protocol standardization also enhances efficiency. "We actually have a use case where we've seen a benefit from the data," James Berry says.

"We have two GE HealthCare Signa™ Voyager scanners at the same site. I can see that when they're running protocols, the average scan time is 15 minutes on one scanner and 18 minutes on the other. They should be the same because they're on the same site and they run the same protocols. We give that patient a 20-minute appointment, but the actual appointment time is 21 minutes. So applications (GE HealthCare application specialist) looked at the protocols and reduced the scan time, so it now falls within the 20-minute appointment."

Dr. Strouhal adds that Imaging Protocol Manager gives information on the scan type and also the sequences and the time of each sequence. This helps identify non-compliance to the protocols and ways to improve: "It has given us a level of detail so that suddenly the staff says, 'Wow, we can make it truly standardized across the business.' That's where we see some time gains. Suddenly we're finding these time efficiencies more easily, and it's working across both the mobile and the static business. And suddenly our mobile staff are engaged and excited."

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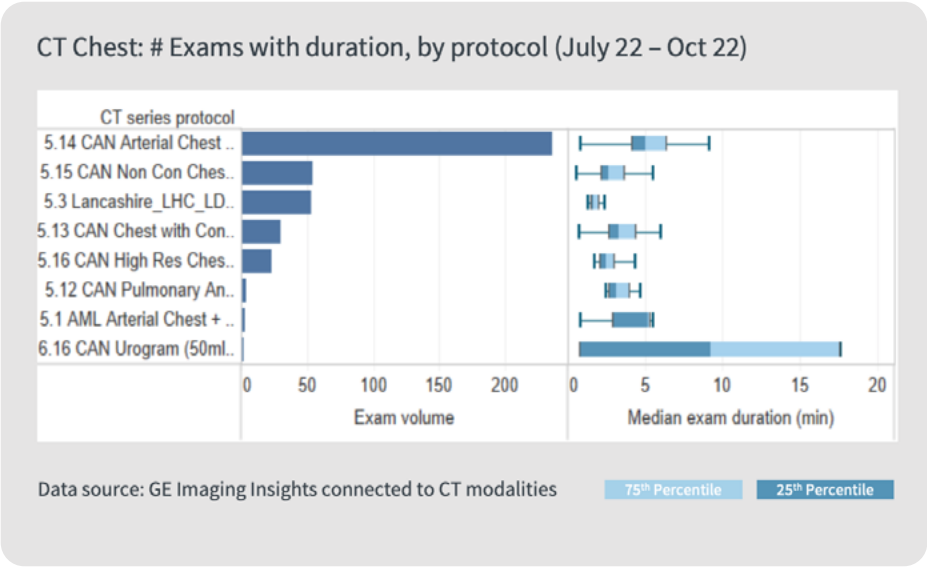

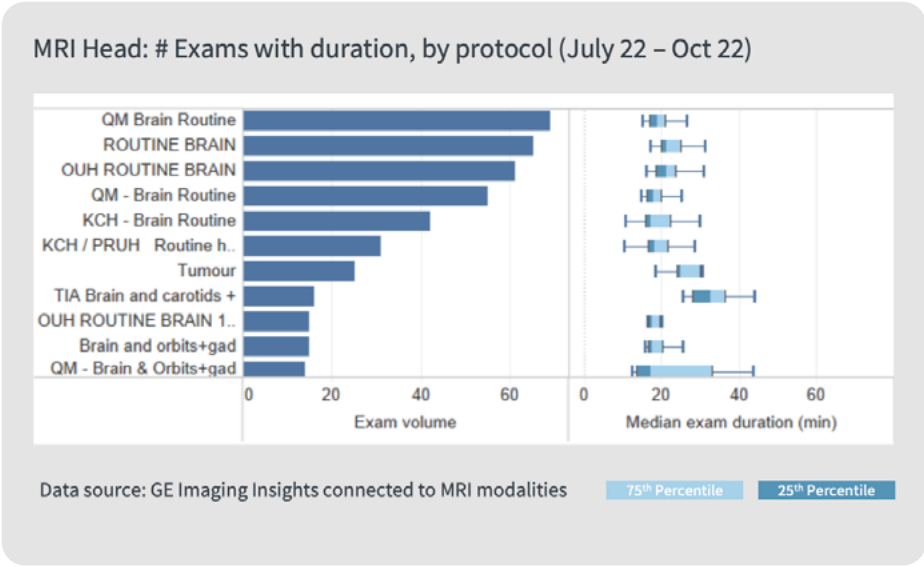

Figure 2

Increased throughput

The Imaging Insights tool provides detailed data on scanning sequences and times, and IPM enables staff to identify ways to standardize and shorten exams. "Our previous business Intelligence server could show us that an MRI knee on one site took 25 minutes and 20 minutes at another site, but we didn't get any more information than that," says Dr. Strouhal. "Imaging Protocol Manager shows us not just what the scan is, but what the sequences are, and how long those sequences are taking to run."

"So with an MRI knee, for example, it's five sequences at both sites, but the data could show us that two of those sequences at one site ran for 90 seconds longer than at the other site. We never would have known that unless we physically went to site, looked at the images, and looked at the timings on the scanner to see how many sampling iterations they were doing for each sequence. Imaging Protocol Manager gives us that information in a dashboard format."

Early on, Ann Heathcote noted the potential to book additional patients by reducing CT scan times. At one site, a reduction in scan time from 30 minutes on average to 20 minutes had potential to increase patient appointments by 35 per week, equivalent to more than one full extra day of scanning *(see Figure 3)*.

	Chest + ABD/pelvis		ABD/pelvis		Chest W.C.	
Analysis	Average # of exams / week	43	Average # of exams / week	11	Average # of exams / week	7
	Appointment duration P75 (min) – 10 mins patient care	16.5	Appointment duration P75 (min) – 10 mins patient care	15.2	Appointment duration P75 (min) – 10 mins patient care	14.8
	Appointment slot	30	Appointment slot	30	Appointment slot	30
Opportunity	New appointment slot	20	New appointment slot	20	New appointment slot	15
Results / predictions	(30 – 20) min * 43 exams ☐ 430 min saved at week ☐ ~22 new appointment slots a week		(30 – 20) min * 11 exams ☑ 110 min saved at week ☐ ~6 new appointment slots a week		(30 – 15) min * 7 exams ☑ 105 min saved at week ☐ 7 New appointment slots a week	

Figure 3: Potential new CT exam slots available at a site

Dealing with missed appointments

Dr. Strouhal sees potential to improve understanding of missed appointments and help identify ways to better manage scanner capacity, staffing, and schedule efficiency. The tool provides robust data on which to base such decisions.

The system can then support approaches to dealing with missed appointments effectively:

"For example, if we consistently have 16% missed appointments...you might want to increase your bookings to accommodate for the anticipated downtime.

If you're looking at how you fill your scanner and that's based on your billing module—the more you scan, the more you can bill for—then that makes sense to work it as hard as you can. In the UK some of our contracts are on a day-rate. We get paid based on performing a minimum number of scans per day. So you can then argue there's no benefit in overbooking or squeezing in more patients.

Now for the morning that was looking full, you've given your staff back half an hour, and now they have a lunch break. Or we give them another half an hour a day in the afternoon. Now they have time to complete training they wouldn't otherwise have.

So based on the financial situation and then the insights I'm getting from Imaging 360, I can make an informed decision on the best way to address a site with higher missed appointment rates."

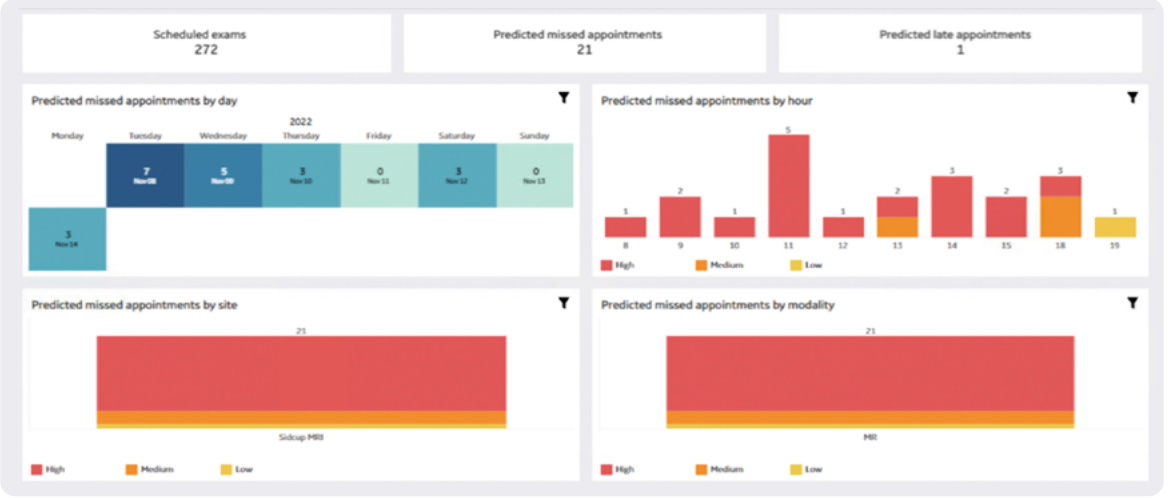

Figure 4: Smart scheduling dashboard sample

On-demand and peer support

Remote capabilities in Imaging 360's Digital Expert Access tool can help Alliance Medical deploy junior and senior staff members and specialists to maximum advantage. For example, senior radiographers do not have to be dispatched to mobile locations to perform complex scans for which on-site staff members lack experience; they can provide support remotely.

"That's a very good thing for us, because we have a lot of junior staff who need that support," says Dr. Strouhal. "And our senior staff can't be everywhere." The same concept can also work in reverse for training purposes: junior radiographers can observe remotely while a specialist performs complex cases."

"But with Digital Expert Access, they don't have to physically go to the site. They can dial in and supervise someone locally."

Remote capability is also useful where, for example, Alliance Medical has a contract for a standard musculoskeletal service, but the local hospital asks for ten cardiac scans in the next week.

"Before, we often had to say no because we couldn't identify a super-specialty cardiac radiographer to go to the site for that one day," says Dr. Strouhal. "But with Digital Expert, they don't have to physically go to the site. They can dial in and supervise someone locally."

Staff efficiency and satisfaction

James Berry notes that the productivity dashboard can help guide discussions with staff members on ways to be efficient: "The detail of the data can show where training gaps are, and that can help us reduce the scan times and bring more efficiencies. We can demonstrate to a radiographer where they have time during the day while the scanner is idle or where we can see opportunities to spend more time with a patient."

"It gives us a tool to educate the staff on what busy really looks like. So rather than us dictating to the staff to say, 'You're not busy, we're going to put more patients through,' we have a tool to demonstrate that there is more efficiency to be had from the scanner. It gives us and our staff more visibility on how efficiently they use their time and the room."

"We can also see how long certain radiographers are taking to perform specific scans. For example, if we see that one radiographer in some instances takes longer to scan a lumbar spine than others do, does that identify a training gap? Or are they doing something that the other radiographers are not doing to extend that scan time? We can then work with that radiographer to bring them to where we think they should be."

The staff had input to the design of the Imaging 360 dashboard that displays data summaries. Says Dr. Strouhal, "We shared it with our staff saying, 'What do you like? What do you not like?' I'm not just talking about did they like a yellow on a blue background. It was more sophisticated, around features like how to display missed appointments."

"...you're creating a team and a community, rather than just a group of staff who work together to push patients through as fast as possible."

In addition, reductions in scan time will open possibilities for staff development and team building. Dr. Strouhal observes, "If you find an extra hour in your day, do you want to fit two, three or four more patients into that hour? You could if you were really pushing financial efficiency. But you don't have to use it for commercial gain. You could use it for soft gains around building a team, giving people time to stretch their legs or have 15 minutes of yoga at lunchtime. Or you could use that time for continuing staff education. Suddenly you're creating a team and a community, rather than just a group of staff who work together to push patients through as fast as possible."

Patient experience

"The patient is the heart of what we do," says Dr. Strouhal. *"So the more we can use data and information to improve the patient experience, the better it is for us."*

IPM helps improve that experience by enabling radiographers to complete exams faster.

"The patient is the heart of what we do," says Dr. Strouhal. "So the more we can use data and information to improve the patient experience, the better it is for us." IPM helps improve that experience by enabling radiographers to complete exams faster. James Berry observes, "If we increase efficiency on the scanners, we can go to our customer and say we can scan more patients for them. That feeds benefits back to the patient, because the more patients we can scan, the shorter the waiting lists. But we also have to consider the patient experience on the scanner. If we have a 20-minute appointment and it's taking us 19 minutes to complete the scan, the patient experience is not the best.

We only have one minute to get them on and off the scanner, and they're probably going to feel rushed." But if data from the Imaging 360 platform helps optimize the scan protocols and reduce the scanning time to 15 minutes, that improves the patient experience. "The radiographers will have more time to spend with the patients, who will feel less like they're on a production line."

Conclusion

In all, the Alliance Medical leaders see strong potential for Imaging 360 to help improve performance against multiple clinical parameters and across a wide and diverse geography. “I think generally our team is really excited about where we might get to,” Dr. Strouhal says.

James Berry emphasizes, “The individual applications on their own are very good. But with Imaging 360, bringing them together as one team, that rounds everything off to provide the best efficiencies we can possibly get out of our equipment and our staff, and to improve the customer and patient experience.”

For more information on Imaging 360 for Operations, reach out to your local GE HealthCare sales representative.

About GE HealthCare

GE HealthCare is a leading global medical technology, pharmaceutical diagnostics, and digital solutions innovator, dedicated to providing integrated solutions, services, and data analytics to make hospitals more efficient, clinicians more effective, therapies more precise, and patients healthier and happier. Serving patients and providers for more than 100 years, GE HealthCare is advancing personalized, connected, and compassionate care, while simplifying the patient's journey across the care pathway. Together our Imaging, Ultrasound, Patient Care Solutions, and Pharmaceutical Diagnostics businesses help improve patient care from prevention and screening, to diagnosis, treatment, therapy, and monitoring. We are an $18 billion business with 51,000 employees working to create a world where healthcare has no limits.

Follow us on Facebook, LinkedIn, Twitter, Instagram for the latest news, or visit our website gehealthcare.com for more information.

Customer evaluated use of Imaging 360 through a pilot agreement providing customer with access to and use of the product in exchange for customer feedback. Statements by the customer as identified herein are based on their own opinions and on results that were achieved in the customer's unique setting. Actual results may vary. GE HealthCare does not guarantee results.

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