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Enterprise Imaging Platform

Entering a new era of patient - centric care

Contents

Improving Workflow Through Enterprise Imaging

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COVID-19 continues to present new challenges to healthcare providers. As a leading healthcare IT partner, Agfa HealthCare is committed to supporting its clients during the COVID-19 crisis. Health Management.org spoke to Bob Craske, the Department Solutions Marketing Director for Agfa HealthCare to discuss Agfa's newest Enterprise Imaging platform that facilitates image exchange, universal viewing, and cloud-based sharing and helps create more efficient workflows throughout the health system.

Key Points

- Agfa HealthCare's Enterprise Imaging solution (Agfa EI) is a complete platform for the management of image based medical records, from acquisition through to results distribution.

- It is engineered to support remote diagnostic services from both an architectural and work perspective.

- Agfa EI uses a rules-based workflow engine to assist customers in organising increasing and complex workloads.

- The platform allows customers to expand their image management strategies at their own pace, just as they did when the EHR was introduced. Consider Enterprise Imaging to be the IHR, or the Imaging Health Record, complementing the EHR.

What is Enterprise Imaging? Can you provide us a brief overview?

Agfa HealthCare's Enterprise Imaging (Agfa EI) is a complete platform for the management of image based medical records. Purpose-built as a single stack of services with a single database, Agfa EI allows our customers to share these services and expand their image management strategy from traditional departments such as radiology and cardiology. Different service lines throughout the enterprise can apply those same proven services without the need for additional infrastructure costs. Agfa EI is our fastest and newest platform. Our primary goal was to develop a new paradigm for helping our customers achieve effective clinical, business, and operational strategies for image based medical records. The platform combines all the essential services required to do image capture, display, reporting, and results distribution for all images, including DICOM and non-DICOM. Agfa EI is not only useful for traditional radiology or cardiology workflows, but can be deployed across all image producing departments, including clinical photography, wound care, dermatology, ophthalmology and more.

Can you talk about how radiologists have had to switch to remote/home reporting during the COVID-19 pandemic and whether you think they will continue to do so post-pandemic?

COVID-19 has placed different constraints on many different customers, depending on their location. We have a platform that can adapt to their changing needs by, for instance, providing them with mobility, with the same experience they have in the hospital, but now at a remote location. So, whether it be their home, a remote office or wherever they choose to work, the clinician can stay productive, with the patient information securely and readily available. Our platform is able to provide the same experience with the same performance independent of location.

This has proven to be crucial in our current COVID-19 world. Our customers were easily able to relocate radiologists' display stations from the hospital environment to their homes with essentially the same user experience and level of service available to them.

As with other industries, we see COVID-19 will change the way people work and remote reading will be the norm going forward.

What benefits does Enterprise Imaging offer to radiologists in terms of remote working, workflow and user experience?

Enterprise Imaging is engineered to support remote diagnostic services from both an architectural and work perspective. By permitting the diagnostician the ability to match their personal preferences and experience, there

is no need to adjust workflows and expectations (such as display protocols and processing capability). The user experience is identical, regardless of location. This is a vast improvement from the old-fashioned use of different viewers across different locations. We believe in one user, one experience.

How can Agfa EI help manage increased clinical imaging volume and changing demand due to COVID-19?

Enterprise Imaging is an ever-evolving platform, and Agfa HealthCare is committed to its constant improvement to meet the emerging demands placed on our customers. As volumes increase within the institution or across its affiliates, Agfa EI will use its rules-based workflow engine to assist customers in organising the increasing workloads. From activity overviews that organise tasks, through prioritisation lists and escalation workflows, timely healthcare delivery can be provided across dynamic workloads. Our platform is also highly scalable. The technology is replicated on virtual machines and there is no need to reconfigure the system, thus making it easy to scale.

Also, it is important to understand that until recently, clinical imaging volume has actually decreased as a result of COVID-19 because non-elective procedures have been delayed. However, the number of chest ultrasound, chest x-rays and chest CT has increased because they are the primary diagnostic tools being used for diagnosis during COVID-19. Therefore, we're not seeing a shift in volume but a shift in volume type. But, volumes are starting to return to normal and our platform is designed to handle the changing demands.

Do you have any examples of customers who have adapted to this new delivery model? What has been their experience? Any challenges they've faced?

Agfa HealthCare has many Agfa EI customers who employ remote reporting. Their profiles run the gamut from smaller institutions who employ non-local diagnosticians through traditional models altered by the pressures of the pandemic. Their experiences have been very personal, as we all know staying productive while working at home is a unique challenge. The Agfa EI workflow engine has been designed to provide identical user experience regardless of location and removes the additional challenge of adopting to a different viewer or workflow and allows the consumer to transition between the two models easily. I recently spoke with a "remote" diagnostician who works from multiple states to support one institution and his emphatic statement to me was, "If you took Agfa EI away from me, I would likely choose to retire rather then go back to disparate workflows."

Does EI work efficiently for multi-facility networks or is it better designed for single department use?

Enterprise Imaging employs a new paradigm in workflow organisation based on tasks that cascade the study from order to results. These tasks are organised by any combination of customer preferences, from the traditional modality workflow through to specialty and location tasks. The workflow engine allows our customers to focus on what is most relevant to their responsibilities as well as ensure the user is aware of all reporting tasks regardless of origin. Enterprise, by definition, means mutli-facility networks but single departments can benefit as well. We find that some customers deploy Agfa EI as a single department solution and then wish to extend the platform's services and benefits to additional service lines. The technology stacks are modular, so it is easy to expand its footprint.

How can you make it easy for radiology departments to use EI? Do you offer remote demos, remote installation etc.?

We really enjoy demonstrating our solution for radiologsts and other clinical care givers. That's when we can 'brag' about how we can help them read with more confidence, in the most timely way, from wherever they are located. Just recently I have been working with a long standing customer to help them leverage the new workflow model available in Agfa EI. My team, as well as our applications, R&D and product management groups have provided remote education to hundreds of Agfa EI customers across the globe, essentially imparting best practices learned from a variety of institutions.

Once a decision is made to move to Agfa EI, our Professional Services organisation engages the client's teams with our expert implementation methodology. This proven gated and accountable process guides the client from building Enterprise Enablement, through Business Process Transformation, all the way to the Go Live and beyond.

Do you think Enterprise Imaging can enhance the role of the radiologist in the post-pandemic world?

Absolutely. A radiologist or cardiologist or any diagnostician has to be seen as a valuable link and contributor in the chain of healthcare. I think collaboration and putting a face to a report and creating the interactive session or capability allows radiologists and cardiologists to establish themselves in their own community.

As a healthcare IT provider of a 'mission critical' application, we are deeply committed to support our clients' efforts during and after the COVID crisis. We already established COVID specific workflows and developed new collaboration technology working with Mircrosoft Teams® that will be used long after COVID is behind us.

Will remote working and reporting continue to be essential in a post-COVID world?

I don't expect remote reporting to ever go away. I believe it is going to become more and more the norm. It is true that we are in the midst of a pandemic and need remote reporting. But I think what's going to happen is that it's going to afford radiologists an understanding of what it is like to work at home. It's not just about technology; it's learning the behaviours of working at home once that has been established, and maintaining your focus and your productivity. I think the pandemic is really just a catalyst for something that was waiting to happen.

Do you think this platform could have any impact on radiology training?

We've developed a platform that offers the ability to do all of your work virtually. This includes rounds, or teaching sessions, or the ability to review an image together even if you're 3 miles apart or more than 300 miles apart. That's powerful education that can still be maintained, even strengthened. And that is critical. Within our platform, we have both what's called peer review, which is sort of a standard reading and accreditation of diagnostic quality and we offer new workflows for peer learning, which is an advanced take on peer review. Peer learning allows our customers to create learning tracks to provide user experiences to help students understand what they need, how they need it, what they're doing in their report and so on. It gives them the opportunity to learn from those with experience. And it can all be done virtually.

If you were to list a few reasons why radiology departments should transition to Enterprise Imaging, what would those be?

The first reason would be our consolidated platform approach, allowing customers to expand their image strategies at their own pace, to deploy modules in as many or as few service lines as preferred and replace disparate departmental solutions. The Agfa EI consolidated platform technology emulates the EHR model of reducing complexity and redundancy across the enterprise.

The second is the power of the desktop to deliver standard and advanced image processing of nearly any medical image in one viewer, leveraging a powerful workflow engine. Eliminating so many specialised viewers allows our customers to stay focused on one desktop with one workflow, regardless of simple or advanced needs.

Thirdly, Agfa HealthCare has had an Enterprise vision for more than 10 years and was the first technology provider to bring that concept to market in the early 2010's. Experience can not be easily developed overnight and our customers have chosen the EI platform to leverage Agfa's experience as a partner, a guide and a consultant in order to achieve their strategic and operational objectives. ∎

Continuous Improvement Through Peer Learning

● Author: <u>Jan Kips</u> | Product Manager | Agfa HealthCare

● Author: <u>Danny Steels</u> | Product Manager | Agfa HealthCare

Traditionally, the radiology community advocates peer review for quality assurance. The current trend is to focus more on peer learning, where learning from peers in a continuous improvement mode becomes more important than focusing on the (number of) diagnostic errors. Agfa HealthCare has developed a module that supports both peer review and peer learning in its Enterprise Imaging (EI) platform. HealthManagement.org spoke to Jan Kips and Danny Steels of Agfa HealthCare to learn more about this new module and how it can help facilitate learning in radiology.

Can you explain the peer learning feature and how it is relevant for the radiology environment?
Peer reviews are a fundamental part of the radiology workflow. They allow you to collect and evaluate data on reading errors and to meet your regulatory requirements. Diagnostic errors in radiology are - and have always been – a major concern. Research has indicated that every day, a radiologist commits 3 to 4 diagnostic errors (Bruno 2017) and diagnostic errors contribute to an alarming 10% of patient deaths in the U.S. (McMains 2016). This becomes even more important in the current trend of cross-site collaborations, where patient care more often depends on the performance of various radiology departments.

The traditional way to measure radiology performance has been through peer review, where radiologists evaluate and score their peer's reports. However, while peer review focuses on how many errors were made, peer learning wants to focus on 'how and why' an error was made (Haas et al. 2019; Larson et al. 2017).

The concept of peer learning is gaining traction. Various hospitals in the U.S. are already using it, either on top of the traditional peer review or as a replacement. Participating radiologists report that peer learning helps to improve patient care more than traditional peer review, encourages more people to participate in the feedback process, and facilitates learning for everyone involved.

At Agfa HealthCare, we believe there is a clear value in having physicians trigger peer reviews themselves on studies that they come across as learning opportunities. A whole range of use cases/situations in which one could see a learning opportunity would simply be missed with

traditional peer review. Listing a few:
• Users detect a learning opportunity while reading a study.
• Additional input from a clinician, multidisciplinary conference, laboratory or pathology result that alters the report conclusion and offers a learning opportunity.
• Peer learning case started as a result of a risk management meeting

Apart from focusing on the errors and negative feedback, there is now consensus that giving positive feedback is equally important. 'Good calls' provide important learning opportunities too. Both are being proposed by the regulatory bodies in the ACR and RCR.

The current peer review used in radiology departments has drawbacks. You say that Agfa has developed a "true peer learning" workflow. Why do you think your tool is better than other available options?
Although initiated with the best intentions, there are a number of drawbacks related to the traditional peer review. Randomly selecting studies for peer review leads to less learning opportunities. Generally, 20% of the studies present 80% of the learning opportunity. So by randomly creating cases, a lot of learning opportunity is missed. That is why many radiologists consider peer review a time-consuming activity that must be done for compliance reasons only. Also, the focus on the number of discrepant findings may lead to a blame culture, with typically little feedback to the report author.

Agfa's peer learning module allows to address these shortcomings by:
• Offering the possibility to both automatically and manually trigger peer reviews.
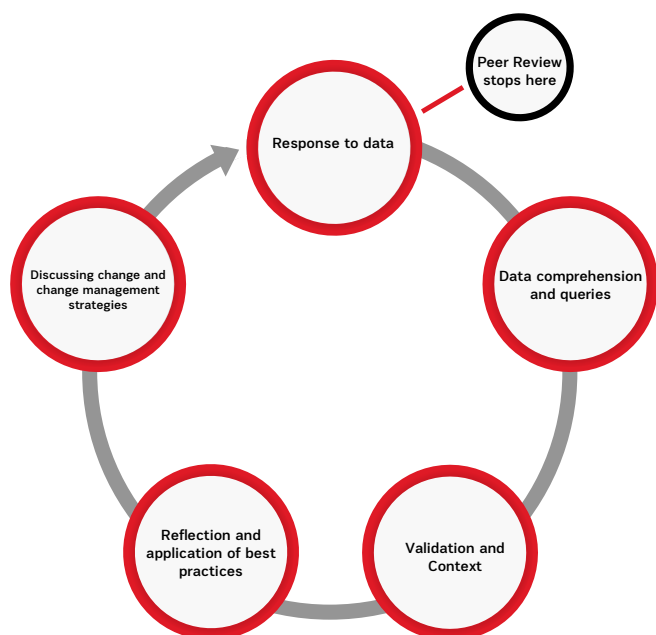
• Fully embedding the peer review workflow in the radiology workflow in Enterprise Imaging.
• Anonymised, built-in feedback loops that allow authors to learn from the advice of colleagues.
• Dedicated conference functionality to discuss the case and ability to follow-up on recommendations or process changes.
• A highly configurable workflow, allowing customers to tailor their workflow from traditional peer review to a peer learning workflow with conferences and anything in between.

How does Agfa's peer learning feature minimise the element of shame when identifying errors and/or mistakes? How does it offer a more positive approach?

It's worth noting that changing the culture is primordial and perceived way more important and difficult than the right software implementation. That being said, there are a few particular features of Agfa's peer learning module that can support this culture:

Anonymisation Mode

Both the patient and the original report author can be anonymised during the peer learning workflow. Privileged users can break the glass and overrule this anonymisation, e.g. in case there are serious consequences for the patient, and they need to be identified.

Note that in a true peer learning mindset, anonymisation is not required as there is no stigma on making errors. It's all about learning from one's mistakes and sharing these learning points. However, even in organisations where the peer learning mindset is present, there may be occasions in which anonymisation is desired. Think of a teaching session with students or a meeting with external participants. That's why Agfa's EI peer

learning module also allows – in addition to the system-level anonymisation – to anonymise per meeting (conference).

Asking for Additional Information

Imagine you're performing a peer review and lack some information in order to make a thorough assessment, such as the patient's clinical history, which is not mentioned in the current nor prior reports. Through a dedicated 'request feedback' task, the reviewer can request this additional information, even without knowing who he is asking the question to (in case the workflow is anonymised).

Importance of Feedback

Feedback is very important for building an open culture and allowing original report authors to actually learn from the peer review. This feedback can be both positive (good calls) and negative (ideally with follow-up actions or constructive feedback).

Peer Learning Administrator Role

The peer learning model allows the possibility to include a peer learning administrator. The key functions of a peer learning administrator include:
• First reviewer of the cases reported
• Reject cases when non-relevant
• Add missing/additional case data like patient history
• Review cases and rewrite the original feedback if needed to ensure that it is phrased in a constructive way
• Put cases on the agenda of conferences when needed, for example, a Quality Committee can discuss cases upfront before discussing them in a group
• Follow-up on actions to be taken or reopen cases when needed

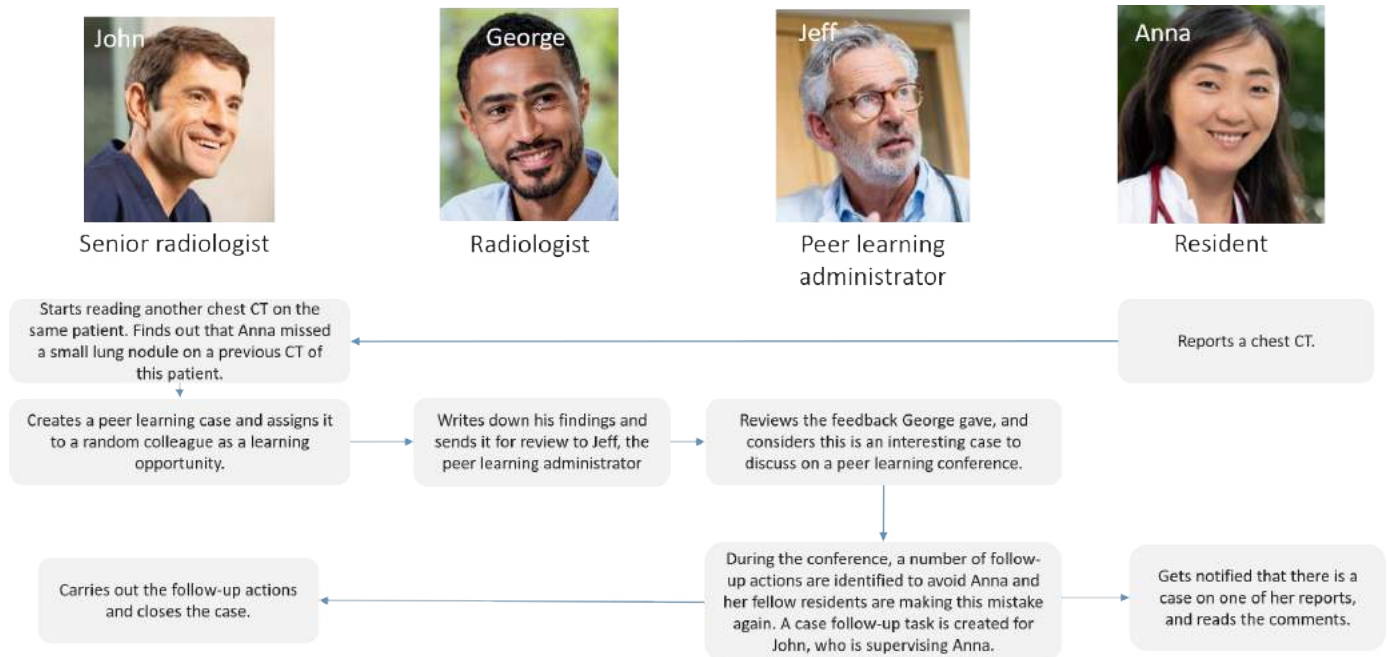### Is the peer learning model easy to implement?

The workflow is very configurable, so an important part of the implementation is the workflow analysis. Similar as for many other workflows, we recommend to think big, but start small: the entire scope/vision of the department on peer learning should be known upfront, but implementation should be done stepwise to finetune where needed.

Is the peer learning module implementable for all types of facilities or only for larger hospitals or departments?

One of the key properties of the peer learning module is its configurability which makes it relevant for all types of facilities and departments. Workflows can easily be tuned from very simple (one reviewer, always triggered manually) to very complex (multiple review boards, manual & automatic creation of cases).

The software can also perfectly cater to the more traditional peer review workflows with only a random selection of cases and registering scores as the Radpeer score, or a combination of both.

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Example of a complex peer learning workflow

John
Senior radiologist

George
Radiologist

Jeff
Peer learning administrator

Anna
Resident

Starts reading another chest CT on the same patient. Finds out that Anna missed a small lung nodule on a previous CT of this patient.	Reports a chest CT.
Creates a peer learning case and assigns it to a random colleague as a learning opportunity.	Writes down his findings and sends it for review to Jeff, the peer learning administrator
Reviews the feedback George gave, and considers this is an interesting case to discuss on a peer learning conference.	
Carries out the follow-up actions and closes the case.	During the conference, a number of follow-up actions are identified to avoid Anna and her fellow residents are making this mistake again. A case follow-up task is created for John, who is supervising Anna.
	Gets notified that there is a case on one of her reports, and reads the comments.

The peer learning workflow is completely **embedded in a radiologist's routine workflow.** Enterprise Imaging is a task-based system. The peer learning related tasks are just 'one of them,' and appear in the activities overviews. Depending on the user's preference, there can be separate activities overviews and/or task lists for peer learning activities, or they can be merged with existing ones.

When a hospital or department implements this feature, do the radiologists lead it, or is there another committee or team that manages it?

That's completely up to the hospital/department. Some organisations choose to appoint a peer learning administrator, who decides which cases get discussed in meetings or reviews the wording before the original report author gets his feedback. All data is available in the reporting module as well, allowing PACS admins to extract the reports needed for hospital management or accreditation and certification bodies.

The peer learning module can also be used for a second opinion workflow. Can you explain it a bit more?

Indeed, if you want a second opinion without having the second radiologist's name on the report, you can trigger a peer learning case on your own report. That's just one example on how this module can cover other use cases that are not strictly peer learning.

In summary, Agfa HealthCare's peer learning system is designed to improve collaboration and foster a culture of teamwork and feedback which promotes actionable learning and would enable radiology departments to create a continuous improvement cycle. It's learning at its best. That is our ultimate goal. ■

Ready to turn your radiology department into a continuous learning environment? Download the leaflet and start here.

REFERENCES

For full references, please email edito@healthmanagement.org or visit https://iii.hm/15cw

Enterprise Imaging and Shared Workflow

🔵 **Author:** [Johan Hendrickx](#) **| Agfa HealthCare | Europe & International Business Manager | Enterprise Imaging IT |** Belgium

The role of a radiologist is becoming more central to healthcare. Radiology departments are overloaded with work. Demand for fast imaging results and 24/7 availability are also consistently increasing. Agfa HealthCare has developed a shared reading workflow within its Enterprise Imaging platform, which allows radiologists to share tasks and expertise beyond the hospital walls. HealthManagement.org spoke to Johan Hendrickx of Agfa HealthCare to find out how the shared workflow feature works and how it can benefit both radiologists and patients.

✅ Key Points

- Shared workflow refers to the possibility of organising the acquisition of images and their reporting across different sites.

- A shared workflow solution includes access to the entire medical imaging record and reports.

- A shared workflow allows radiologists at different sites and facilities to receive reading tasks based on their expertise.

- A shared workflow is an efficient way to organise the available resources available within a region.

Can you please tell us something about Enterprise Imaging and the shared workflow feature?

Shared workflow refers to the possibility of organising the acquisition of images and their reporting across different sites. Radiologists can get tasks assigned to them irrespective of where images have been acquired within the region. A shared workflow solution includes access to the entire medical imaging record and reports. Therefore, you have very easy access to all priors, wherever they have been acquired in the region you have set up for collaboration. A shared workflow allows radiologists at different sites and facilities to receive reading tasks based on their expertise.

What is the difference between shared workflow and teleradiology?

Teleradiology is often used when there are not enough radiologists available to manage the workflow. In this situation, some of the work is outsourced to a third party. Studies are sent to outsourced radiologists, and you wait for them to provide a report. Teleradiology is more of an external collaboration: you push studies to outside radiologists for them to be read or report. One wants to avoid using too much teleradiology because these services tend to be quite expensive.

On the other hand, a shared workflow is a more efficient way to organise the available resources you have within your region. It allows hospitals to set up cluster sites and collaborate with them so that the work can be more efficiently organised. Unlike teleradiology, it offers a much closer collaboration, as if you're sharing with a colleague sitting next to you. But in this case, they may be in another hospital altogether. Also, with a shared workflow, the process of reading and reporting is faster because if one radiologist is busy or unavailable, another radiologist within that network can handle the reading. Therefore, it allows a facility to have an efficient radiology department 24/7.

Many countries are facing a shortage of radiologists, and it is becoming difficult to manage increased workload. How can shared workflow help solve this problem?

That is one of the main reasons we built this feature - to allow radiologists to collaborate more efficiently. Shared workflow allows you to share the workload with multiple sites, and you can build workflows around that. Even if there is a need for specific subspecialties, you don't necessarily need such a radiologist on site. You can group that work and push it out towards other sites of your collaboration. Someone
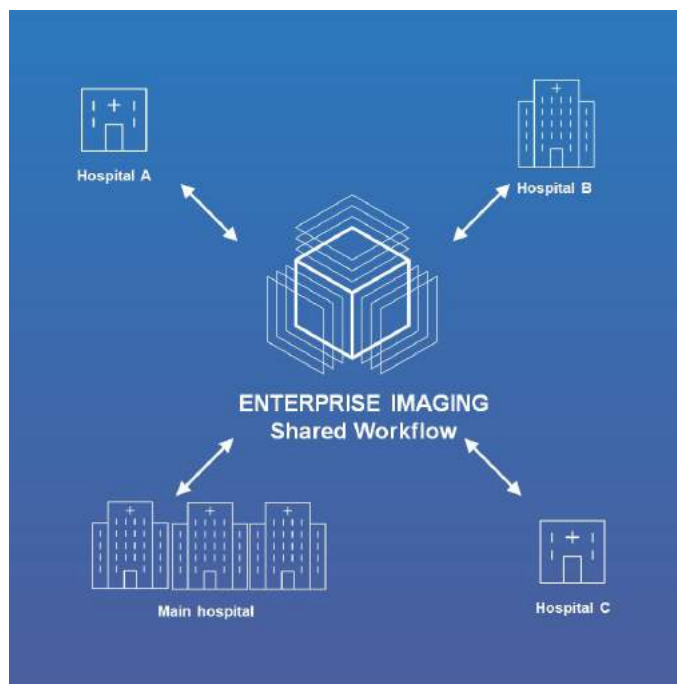
with that particular expertise on the other site can pick up that study, read and prepare the report, which will go back to the site of origin. This is all done automatically, allowing the process to become much more efficient. Specifically, for countries where there is a shortage of available radiologists, work can be organised in a much more efficient way. Not only can you share expertise, but you can also reduce the cost of having to outsource some of this work elsewhere. Hence, shared workflow allows you to use the available resources in a more efficient way.

Radiologists are also faced with the challenge of controlling costs. Can a shared workflow facilitate this goal? If yes, how?

Absolutely. With a shared workflow, you do not have to outsource work to external companies that will do the reading for you. It allows you to become more efficient as an organisation, and thus, you drive down the overall cost of that outsourced work.

If you were to list the key advantages of a shared workflow, what would those be?

The biggest advantage of a shared workflow is the ease with which you can create and share tasks. Enterprise Imaging is the backend solution. It allows you to create task lists and assign them to specific radiologists or specific groups of radiologists. Radiologists within the network can automatically see tasks assigned to them locally.

Another big advantage is how data is managed within the system. Data is never copied from one site to the other. It is always streamed. If a radiologist wants to open a study for reading, the images of this study will be streamed to them. As soon as they make the report and sign it off, the report is

automatically stored back into the site of origin, so there is no duplication of data.

To summarise, with a shared workflow, no data is moved around, you have full control of the workload, even when it's made accessible remotely, and given distribution of workload is fully automatic, you don't need to have additional workers in place to be able to share.

Can shared workflow help patients in remote areas?

Yes, patients can go to the nearest hospital, and even if the radiologist that has the experience to report that particular case is not on site, images can still be acquired in the remote sites. By putting in place a shared workflow, the request can automatically be routed towards the site that has the experience set. The reporting is done there, and the result is forwarded back to the remote or rural side. Hence, with shared workflow, patients do not have to travel to the more specialised centres to get better service.

How does this feature ensure that there is no duplication of effort and images are not read or shared by multiple people within the network?

This is actually an advantage that we also implement already with the Agfa HealthCare XERO Exchange Network. All radiologists within the region always have full access to the entire medical imaging record of the patient. If the patient was in another site where a specific study was already acquired, you don't have to redo that acquisition. The fact that you have such easy access to the entire medical imaging records can help avoid duplication.

Is this a standardised solution, or can hospitals and radiology departments customise the shared workflow feature according to their needs?

The Agfa HealthCare shared workflow solution is highly customisable. You can design it to match your needs, whether you want to be able to share studies after hours, or during weekends, or weekend days, or for a specific specialty or a combination. You can also ensure quality control by initiating a multi-author workflow for studies that are more difficult. There's a whole range of possibilities that can be put in place. You have total control over the workflow.

It is clear that radiologists can benefit from a shared workflow. How does it help patients?

First of all, by making the entire region more efficient, a shared workflow ensures that a particular study is reported faster. Based on this, patient follow-up can be organised at a quicker pace. Shared workflow also increases the flexibility for patients to go into the local hospital, have their images or study acquired there, and benefit from the knowledge and the specialisation over the entire region. After all, this is why we do this – to provide better patient care. ∎

Utilising the Workflow Engine of Enterprise Imaging at King Faisal Specialist Hospital

⬡ **Author:** <u>Mustafa Hamdy</u> **| Regional Manager | Middle East |** Agfa HealthCare

On 14 August 2020, King Faisal Specialist Hospital - Jeddah, in the Kingdom of Saudi Arabia went live with the Agfa HealthCare Enterprise Imaging for Radiology platform. HealthManagament.org spoke to Mustafa Hamdy, Regional Manager, Middle East region for Agfa HealthCare to learn more about the deployment and their future outlook in this region.

☑ Key Points

- King Faisal Specialist Hospital – Jeddah is one of three hospitals that make up the King Faisal Specialist Hospital & Research Centre (KFSHRC).

- They were the first hospital in the Middle East to achieve HIMSS EMRAM Level 7.

- In August 2020, Agfa HealthCare and the King Faisal Specialist Hospital, Jeddah, went live with the Enterprise Imaging for Radiology platform.

- Agfa HealthCare and the King Faisal Specialist Hospital & Research Centre will work together as strategic partners to implement the Artificial Intelligence capabilities utilising the powerful workflow engine of Enterprise Imaging platform.

- Enterprise Imaging features that meet the hospital's specific needs include remote reporting, peer learning, web deployment and accessibility, and an integrated viewer that enables patients to view their images and reports on a mobile device.

Can you give us a short overview of the healthcare sector in the Kingdom of Saudi Arabia? Any key points that you would like to highlight about healthcare in this region?

Health care in Saudi Arabia is a national health care system in which the government provides free health care services through a number of government agencies like MOH hospitals, National Guard hospitals, Ministry of Defense, Ministry of interior hospitals and group of specialist hospitals like King Faisal Specialist Hospitals. There is also a growing role and increased participation from the private sector in the provision of health care services. Saudi Arabia has been ranked among the 26 best countries in providing high quality healthcare.

Healthcare is one of the main focus areas of the ambitious Saudi Vision 2030 and National Transformation Program 2020 (NTP) that seek to improve the quality of healthcare services and facilities across the Kingdom of Saudi Arabia.

Agfa HealthCare has recently deployed Enterprise Imaging at the King Faisal Specialist Hospital in Jeddah. Can you tell us something about this healthcare facility?

King Faisal Specialist Hospital – Jeddah is one of three hospitals that make up the King Faisal Specialist Hospital & Research Centre (KFSHRC). This tertiary referral hospital offers primary and highly specialised inpatient and outpatient medical care and participates in many clinical and research studies. The 500-bed facility in Jeddah has a top-notch radiology department that also provides training in diagnostic and interventional imaging to radiology, medical, paramedical, nursing, and medical students.

On Friday, 14 August 2020, Agfa HealthCare and the King Faisal Specialist Hospital – Jeddah, in the Kingdom of Saudi Arabia, went live with the Enterprise Imaging for Radiology platform. Despite the challenges of carrying out the entire project during the COVID-19 containment

efforts, the go-live was smooth and successful. The large-scale Enterprise Imaging implementation at King Faisal Specialist Hospital – Jeddah is expected to handle 120,000 studies yearly.

Before Agfa HealthCare introduced EI within this healthcare facility, what kind of system did they have in place?

In 2010, the hospital became a customer of Agfa Health-Care with the IMPAX PACS, but by 2019, it was time to move to a next-generation image management solution. After a competitive tender, the hospital chose to stay with Agfa HealthCare, and implement Enterprise Imaging.

Agfa HealthCare and STC (Saudi Telecom) decided to partner together since 2016 mainly to address the cloud solutions and started offering that service and actively implemented quite some important installations for Ministry of Health which went live also this year using STC cloud technology. STC is also a partner to KFSH in the connectivity projects and that was also a reason for KFSH to align with STC and Agfa to deploy that important project on the premises of King Faisal Specialist Hospital in Jeddah.

What challenges was the King Faisal Specialist Hospital facing, and why did they decide to move to Enterprise Imaging?

Enterprise Imaging offers a single, unified imaging platform, with embedded clinical tools and a powerful workflow engine, for maximised productivity. Features that meet

The hardware for the Enterprise Imaging deployment was delivered in April. While the installation of the hardware had to be done on-site, all other work, including configuration and initial training, was done remotely.

Following the end of the curfew, the on-site engineer was able to take his place at the facility, and the Agfa HealthCare application specialists could complete the training of the hospital staff in person.

Despite the challenges in the face of the pandemic, the go-live went very smoothly, thanks in large part to the excellent collaboration and hard work of the hospital and Agfa HealthCare teams, and the project coordination by the Hospital and Agfa HealthCare project managers.

Is this the first hospital in Saudi Arabia to deploy Agfa HealthCare's EI platform, or are there other successful implementations already in place in this region?

We have deployed already Agfa HealthCare Enterprise Imaging platform in several other healthcare organisations in Saudi Arabia. However, King Faisal deployment was unique because of their size, specialisation, clinical demand and very well structured infrastructure.

Their ambition towards digitisation is endless. They are a pioneer in different HealthCare IT aspects, and were the first hospital in Middle East to achieve HIMSS EMRAM level 7. They are very serious in their approach to Artificial Intelligence (AI).

The large-scale Enterprise Imaging implementation at King Faisal Specialist Hospital – Jeddah is expected to handle 120,000 studies yearly

the hospital's specific needs include remote reporting, web deployment and accessibility, and an integrated viewer that enables patients to view their images and reports on a mobile device.

Agfa HealthCare and the King Faisal Specialist Hospital & Research Centre will work together as strategic partners to implement the Artificial Intelligence capabilities utilising the powerful workflow engine of Enterprise Imaging platform.

What challenges did Agfa HealthCare face when deploying Enterprise Imaging at this hospital in terms of resources, acceptance, transition etc.?

The implementation project faced serious challenges due to the global COVID-19 pandemic. The Kingdom of Saudi Arabia instituted a 3-month curfew starting in March.

What have been the major outcomes? Has the deployment been successful, and what benefits has the hospital already seen since EI was implemented?

Enterprise Imaging offers a new generation of image management, creating a secure ecosystem of medical images with advanced image processing, tools to facilitate collaboration and peer learning, and platform performance and stability.

The platform provides the King Faisal Specialist Hospital, Jeddah with a number of key features that fit its specific needs, including remote reporting, advanced clinical applications, and an integrated viewer that enables the patients to view their own images via the mobile application.

What future collaboration is planned with King Faisal Specialist Hospital?

The modern, up-to-date platform meets the imaging IT vision of the KFSHRC's pioneering IT department. Currently we are working with King Faisal Specialist Hospital management team as strategic partners in several initiatives. Some of these include:

• Ongoing deployment of Enterprise Imaging for the new hospital in Madinah, expected to be fully deployed in 2021.
• Further collaboration with AgfaHealthCare to validate some of the Artificial Intelligence algorithms in Enterprise Imaging platform. ■

At Agfa HealthCare, we support healthcare professionals across the globe to transform the delivery of care. Our focus is 100% on providing best-of-suite Imaging IT software solutions that enable secure, effective and sustainable imaging data management. From product development to implementation, our unified Enterprise Imaging Platform is purpose-built to reduce complexity, improve productivity and deliver clinical value. We use our proven track record as an innovator, our in-depth medical knowledge and our strategic guidance to help healthcare providers achieve their clinical, operational and business strategies

Enterprise Imaging and Personalised Care at Istituti Fisioterapici Ospitalieri

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An overview of how Enterprise Imaging supported the multidisciplinary needs of Istituti Fisioterapici Ospitalieri (IFO), an oncology hospital and research centre in Rome, Italy, and how it enhanced the productivity and efficiency of its radiology services.

☑ Key Points

- Istituti Fisioterapici Ospitalieri (IFO) is a renowned scientific institute in Rome, Italy. IFO is a public hospital that specialises in oncology and dermatology.

- In June 2020, IFO went live with Agfa HealthCare's Enterprise Imaging solution, which includes the Enterprise Imaging for Radiology platform, the Elefante RIS and the XERO Universal Viewer.

- The platform has upgraded the radiologists' PACS

- function and has improved efficiency and productivity.

- Enterprise Imaging has automated the workflow and has resulted in the elimination of repetitive tasks.

- Since the implementation of the Enterprise Imaging solution, the number of CTs increased from 16,422 in 2019 to 18493 in 2020, and the number of MRIs increased from 5099 in 2019 to 5706 in 2020.

Introduction

Istituti Fisioterapici Ospitalieri (IFO) is a renowned scientific institute in Rome, Italy. IFO is a public hospital that specialises in oncology and dermatology. It comprises two scientific institutes: the Reginal Elena National Cancer Institute (IRE) and the Dermatological Institute S. Gallicano (ISG), both of which are scientific institutes for research, hospitalisation and care (IRCCS).

IFO handles about 10,000 inpatient admissions and 1,275,000 outpatient appointments each year. It also carries out 100,000 imaging exams each year. The hospital is well-known for its focus on research and high-quality patient care, and, in particular, its commitment to supporting patients and staff by using the most advanced technology. IFO follows rigorous protocols and is known for its collaboration with international institutions to ensure patients are supported throughout their care journey - from diagnosis to therapy - with a personalised, end-to-end care plan.

In June 2020, IFO went live with Agfa HealthCare's Enterprise Imaging solution. The goal was to implement an image management solution that could integrate advanced research technology and increase efficiency and productivity. So far, the research hospital has shown a successful increase in its productivity in radiology and fast, secure and easy imaging access for specialists and researchers.

Supporting a Smarter Hospital

At IFO, the goal is to bring the highest degree of digitisation and to ensure clinicians have access to the information they need and when they need it for accurate diagnosis, care and research, in a smart way. According to Guiseppe Navenateir, IT and Clinical Engineering Manager for IFO, the research hospital looks for new and improved image management technologies and applications every three years.

Advanced image management solutions are critical for IFO. That is why it was natural to transition to Agfa HealthCare's Enterprise Imaging solution, which includes the Enterprise Imaging for Radiology platform, the Elefante RIS and the XERO Universal Viewer. This comprehensive solution offers radiologists access to advanced functionalities and specialised applications that can be embedded in one platform.

16422 2019 — **18493** 2020
CT

5099 2019 — **5706** 2020
MRI
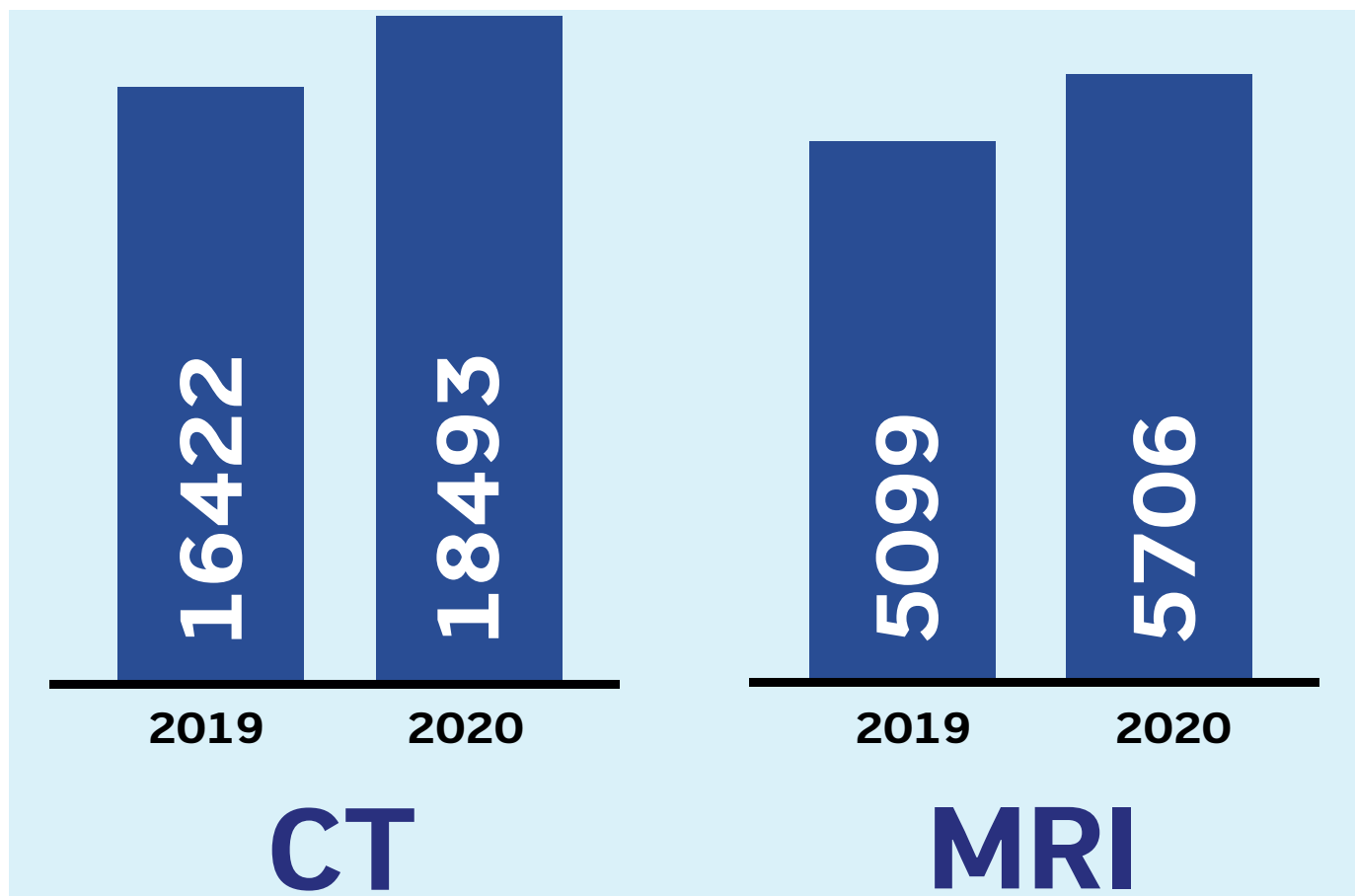
The Enterprise Imaging platform enables radiologists and specialists to access diagnostic information whether they are in or outside the hospital. Also, the flexible RIS interfaces with the appointment system of the regional government, which is important for IFO.

Successful Implementation and Results with Enterprise Imaging

With the successful implementation of the Enterprise Imaging solution, IFO has seen the following positive results:
• The platform provides easy access to images, anywhere, anytime, for every specialist. Clinicians can access imaging studies immediately and can view images from the EMR or any other computer or mobile device through the XERO Universal Viewer. In addition, the XERO Xtend offers advanced clinical applications and 3D processing.
• The platform has upgraded the radiologists' PACS function and has improved efficiency and productivity.
• Elefante RIS1 is integrated within the Enterprise Imaging platform and offers IFO the ability to customise it as per the specific needs of the hospital.
• Enterprise Imaging has automated the workflow and has resulted in the elimination of repetitive tasks.
• Since the implementation of the Enterprise Imaging solution, the number of CTs has increased from 16,422 in 2019 to 18493 in 2020, and the number of MRIs has increased from 5099 in 2019 to 5706 in 2020.

•The Business Intelligence feature with Enterprise Imaging helps the hospital monitor its radiology Key Performance Indicators so that the team can analyse areas for improvement and determine how to increase the quality and quantity of activities.
• The platform has increased the reach beyond the radiology department. Every case can be discussed between a number of specialists, and information can be exchanged easily and efficiently.
• The XERO Viewer allows patients to view their own images via the Patient Portal, also provided by Agfa HealthCare, and access their results from the comfort of their home. This feature also provides cost-savings to IFO as they no longer have to make CDs or DVDs. ■

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