Use cases:
Radiology in the Value-Based Care organization
How do you deliver Value-Based Care in Radiology?

“Value-Based Care is all about building a health care management strategy that focuses on costs, quality, and most importantly, outcomes.”
It begins with the appropriate request

Shorter episodes of care, lower costs, better patient outcomes: this is value-based care defined at its simplest. But how does that fit in the radiology environment? Or perhaps the better question is, how do radiology and the radiologist fit in the value-based care organization?

Increasingly, radiologists are taking steps to actively demonstrate their value: their role in **timely and correct diagnosis**, in **timely and right treatment**, in **creating a continuum of care** and in **encouraging patient engagement**. Within the imaging workflow, this role starts with ensuring that the most appropriate radiology exam is ordered, completed and reported in a timely manner.

This is the exam that assists in clinical decision-making, that is part of enhanced, cost-effective patient care, and that satisfies both the patient and the clinician.

**FACING THE PROBLEM**

For many clinicians, radiology remains a less familiar world, with a language and expertise on its own. Ordering physicians may not know the best imaging test for the result they need, for example. Yet inappropriate tests can lead to **incorrect or delayed diagnosis and treatment and unnecessary exposure**. Even in a best-case scenario, the wrong request triggers wasted resources, lost time for patient and staff, and additional costly images.

Equally, **duplicate tests** result in very high costs that provide no added value. And increased imaging can potentially lead to **overdiagnosis** and wasteful spending due to overtreatment and unnecessary operations and medicines.

Furthermore, to make informed, confident diagnoses, clinicians need their imaging results in a **timely** way, while delays can have a serious impact on patient satisfaction. Exam scheduling is therefore part of and critical to value-based care.

Finally, moving towards integrated care and **creating a continuum of care** requires greater cooperation, to maximize the value of each player and specialist. One way the radiologist can support this is by **educating the clinician** about exams, results, technology innovations and providing clear recommendations.
How Agfa HealthCare can help

1. Tools that assure timely imaging

To enable timely and correct diagnosis and treatment, clinicians need results in a short delay. The first step is therefore scheduling the imaging exam. Our appointment scheduling solution makes it easy for the clinician and patient to schedule and manage the appointment.

You can keep track of the waiting time to the first appointment and the delay between the creation of the order and the final communication of results. This key information can help you achieve the value-based care goal of shortening the time to diagnosis and treatment.

2. Educating non-imaging colleagues on “wise imaging choices”

Scheduling is the first contact between clinician and radiology in the care episode. It thus provides an ideal opportunity for you to educate colleagues on “choosing imaging wisely” for value-based care.

Our scheduling solutions can be set up to provide clinicians with an easy-to-use, flexible set of exams to choose from to complete the order.

Built-in mechanisms can warn of duplicate exams, so the clinician can decide if the second exam adds real value to the patient’s care. And access to the patient’s history – including dose history – enables better dose management and control.

Assuring that the correct and necessary exams are carried out also eliminates overutilization of testing, thereby reducing non-value-added care and saving costs and time.

3. Demonstrating radiologist value in order evaluation and protocol assignment

Is the right test being performed and are the correct protocols being followed? Embedded order evaluation and protocol assignment in the Enterprise Imaging for Radiology platform can help you monitor this. You can evaluate the incoming order, check the patient history and clinical indications, and review any additional comments by the clinician.

Access to patient data in the EMR from a single desktop and additional tools to communicate with the clinician, such as online chat, give you the information you need to confirm that the correct exam has been selected. You can also change order priority, so that the patients requiring the most urgent care are seen first.

And during the exam, you can set the protocols for the technologist to get the best results for the specific patient, which can depend not only on clinical information, but on patient age, weight, condition, allergies, dose history and more.
The connected patient is involved and engaged

The Health Management Platform offers a key tool to build patient engagement by maximizing the patient's involvement, whether for this acute care episode or further along the care continuum. Patients can play an active role in their own care by uploading previous radiology images from CDs, so all the patient’s historical images are accessible to the treating physician before the new exam takes place or for comparison references when radiology reads the exam.

A questionnaire enables the patient to fill in key information ahead of the appointment, tailored to the specific exam. For example, if the patient is scheduled for an MRI, does she have any metal implants? Is she pregnant? Does she have any allergies?

This information enhances patient care by reducing the risk of potential adverse or never events (for example an allergy to a contrast agent). But the on-line questionnaire also saves the patient time when checking in for the imaging exams, and enables a smoother experience and workflow in radiology.

You can provide exam preparation information enabling the patient to better prepare. Does she need to fast beforehand, follow a special diet, arrive 30 minutes before the exam? The availability of background information on the procedure itself supports the patient to feel more confident and engaged, as well.

Finally, automated appointment confirmations and reminders reduce the risk of the patient missing the exam, helping keep down the time from order to report. The patient arrives for the exam at the correct time, enabling a smoother patient throughput that further enhances satisfaction.

Agfa HealthCare’s solutions allow radiology to provide a more targeted, efficient and personalized care that matches resources and costs to needs, while further optimizing patient care and satisfaction.

The added-value of radiology becomes clear to everyone involved, from patient, to clinician and GP, to hospital administration.
“Hospitals are being held more accountable for the procedures they do and the costs they charge. Physicians must consider how additional imaging impacts the patient’s overall care. One of the necessities to do this successfully is to have good data – including performance measurements – and again good data sharing.”

Dr. Max Rosen, Professor and Chair of Radiology, UMass Memorial Medical Center, Worcester, USA

How to evaluate the value?

There are a number of metrics you can use to track and evaluate the value you are providing for the appropriate request:

- The percentage of patients scheduled within a specific number of days after the request is made by a clinician.
- The total time between the order and the result.
- The number of unindicated exams.
- The percentage of exams with correct protocols.
Supporting the acquisition

Even before the advent of value-based care, patient safety was a key concern for all medical professionals. And it remains the focus today.

In the value-based care organization, quality control takes center stage, including in radiology.

But never events and adverse events in radiology can often be prevented with the appropriate tools, careful follow-up and shared expertise.

FACING THE PROBLEM

It’s the radiologist’s nightmare: the wrong exam is carried out, an inappropriate radiation dose is given, poor image quality results in multiple retakes, workflow bottlenecks fill the waiting room with unhappy patients...

Errors and quality issues in radiology may demonstrably worsen the patient outcome and increase costs, with a detrimental impact on care value.

Radiology plays a key role in supporting timely and correct diagnosis and treatment, but new revenue models make radiology and the radiologist accountable for image acquisition quality control. More types of exams, increased complexity of imaging and greater numbers of patients put the pressure on.

Once you have assured the appropriate request including the choice of exam and patient preparation, you need solutions and tools that allow you to prevent acquisition errors, keep the workflow smooth, provide the clinician with the quality images needed, and enhance both the patient’s experience and care.
How Agfa HealthCare can help

1. A single platform for faster, meaningful images

The Enterprise Imaging for Radiology platform offers a centralized imaging administration and exam set-up. The patient is consistently identified across the PACS, RIS, Reporting, clinical applications, mobile applications, XERO viewer and more. Our solutions also integrate with other systems, so that your HIS and modalities all communicate that same patient ID. The possibility of a patient mix-up, or the wrong exam being carried out, is thus minimized.

For complicated exams, automatic order review task list can be configured so you can assess the order and patient circumstances to fine tune the procedure protocols in advance of the acquisition.

The assigned protocol is visible to the technologist, assuring that the exam is being performed optimally: with/without contrast, with the correct orientation, etc.

Using the online chat function, you and the technologist can visually collaborate over the images.

You can confirm image quality or, if necessary, adapt the protocol, all in real time. The first image is thus the right image, helping reduce retakes and giving you the images you need for creating the report in a timely way. At the same time, the growing number of studies and the requirements for population health make management, storage and sharing an ever-greater challenge.

How Enterprise Imaging consolidates and encodes data helps create the basis for analytics, enhancing clinical and diagnostic value.

2. Optimizing dose and the potential for dose reduction

Reducing dose is on everyone’s agenda, and it is certainly part of the role radiology plays in the value-based care model.

Our dose management system lets you monitor doses and check that all guidelines are being followed.

Is the appropriate dose for the modality or exam being used? How can you get the best possible image quality at the lowest dose?

How can you get the best possible image quality at the lowest dose?
Positive patient experience, for greater satisfaction

Even before the patient arrives, the Health Management Platform can enhance convenience, efficiency and care. You can have the patient fill in an online questionnaire in advance with information you need, for example allergies to contrast media, or upload previous images from CDs. The patient can also check the details you provide on how to prepare for the exam.

Enterprise Imaging’s built-in workflow engine helps keep the radiology department moving smoothly, even in busy times. Tasks are automatically assigned to the most appropriate person, whether this is based on availability, specialty, urgency, etc.

Escalation rules can help manage wait times. Not only is the patient experience more positive, but the faster turnaround supports you in completing your reports in a timely manner, giving the clinicians the input they need for confident diagnosis.

Incident reporting, for evaluation and improvement

Our solutions can enable you to register incidents right where and when they happen, and indicate the category of the incident, such as allergic reaction to contrast media, quality issues, etc.

This information is extracted by the Business Intelligence solution to provide statistics that you can use to determine areas for improvement, and then to monitor your improvements.

These statistics can also quantitatively show how radiology is playing its role in reducing the costs of care and improving patient care. And Business intelligence can support you to manage staff organization and help you plan for equipment investments.

“All incidents are reported, from a patient’s allergic reaction, to a problem with placing a drip. At first, it was disconcerting to read the reports. But incidents do happen, and by tracing them we can uncover the root problem and solve it.”

Dr. Perdieus
Radiology Department,
AZ Imelda, Bonheiden, Belgium
There are a number of metrics you can use to track and evaluate the value you are providing for the acquisition:

- Percentage of exams under study-specific dose threshold
- Room time and examination time
- Utilization of resources (rooms, equipment, staff)
- The percentage of exams with a standard protocol
- The percentage of mislabeled exams
- The percentage of patients with reaction to contrast media
- The number of incidents (e.g., patient falls)
- How many times the wrong exam is carried out for the right patient

How to evaluate the value?
Creating a relevant report

These days, for many diseases, **timely and correct diagnosis** is often imaging-driven – which means the radiology report takes center stage in the imaging value chain and beyond, all along the care continuum.

But this report offers more than a way to communicate images and findings: it is a key instrument for radiologists to demonstrate the value of their own expertise.

So how does the value-based healthcare organization evaluate the quality of your radiology report?

On its completeness, accuracy, clarity, specificity, adherence to guidelines and decision-based structure. But it also needs a clear and consistent structure that aids the clinician to quickly and correctly assess your findings, and to act on them.

This is a report that helps to speed up the patient’s care and eliminates the risk of key information being missed, for **timely and right treatment**.

**FACING THE PROBLEM**

The evolution of imaging has led to important innovations that have a real impact on patient health, safety, quality of life, population health and more.

But at the same time, radiology faces increased pressure on remuneration models and the need to establish a clear value for each exam as well as for the radiologist’s interpretation. In this high-impact environment, the radiology report provides an excellent opportunity to quantitatively demonstrate that value.

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How Agfa HealthCare can help

1. A shape and structure that make your findings accessible

Sectional reporting gives your report shape and structure, with a natural and logical grouping of the various parts. Standardization assures that the clinicians feel familiar with the report structure, without needing to "interpret" the individual radiologist’s style, habits, etc.

The clinicians can be confident that they know where to find specific types of information within the report – such as procedure details, findings, measurements, radiation, conclusions, recommendations for follow-up, and so on – reducing the effort it takes to understand the report and helping ensure no important details are missed.

2. Speed and ease of use that support timely care

Easy to use, our sectional reporting saves you time, while enabling you to provide the quality reports demanded. The appropriate report template can be automatically linked to exam type, making template selection very easy.

Standard texts, macros, predefined values and fill-in fields, voice commands and other tools offer you maximum flexibility to tailor how you present your findings and interpretations, all while speeding up your reporting workflow. You don’t have to continually write repeated information, while the personalized text macros let you define how you work. And you can choose to type, dictate or use voice recognition, according to your situation.

3. Clarity that makes every detail count

All the detail needed by the clinician is there, and you can easily add key images to the report. This image rich radiology report supports the clinician to quickly and correctly assess images and act on them.

Measurements can also be imported automatically, saving you time and effort on a repetitive task, while helping reduce the risk of potential errors.

4. Tools for interpretation that maximize the value of each image

Advanced image management tools support your image interpretation in a multi-modality environment and enable you to play your key role in timely and correct diagnosis and treatment. With advanced image management functions such as 3D tools, measurement tools and specialty tool kits for example, for lesion management, vessel fly through, nodule segmentation and more at hand, you don’t lose time opening various applications or changing workstations, or need to learn to work with different, specialized, third-party systems.
A reporting workflow that helps reduce potential errors

The workflow engine also supports you and the clinician by assuring that urgent reports can be given priority, and that all images are read and all tasks are completed. You can flag a critical finding by assigning a report severity that communicates the information in a timely fashion to the ordering physician. In this way, delayed or missed diagnoses can all be reduced. You can also define certain cases to be routed to a specialist radiologist, while peer review and quality readings can be automatically organized.

By helping balance the workload between radiologists, based on specialty for example, the workflow engine also helps eliminate potential bottlenecks and reduce the time until the clinician and patient receive the report.

The potential for errors by a resident in a learning environment can be reduced, as well, by the smooth resident and supervisor workflow. Firstly, the supervisor can confirm that no pathology has been missed. At the same time, the feedback from the supervisor on missed diagnoses maximizes the opportunity for the resident to learn and build up experience in a safe environment.

Mobility that keeps you in the care team

Mobile functionality lets you work how and where you want, remotely editing and signing off on report approvals, and creating certain new reports. You can provide your specialist expertise, and share images and reports between radiologists, clinicians, specialists and residents during extended hours, and even from home. Teleradiology enhances your value to the patient’s care and makes your contribution as part of the care team more visible.

Collaboration that creates a continuum of care

With enhanced communication functions, such as Chat & Collaboration, you can easily request and discuss second opinions and extend educational opportunities. And physicians and patients alike can access images and reports via the portal, for greater engagement and satisfaction.

With a comprehensive portfolio of solutions, functions and tools, Agfa Health-Care supports you to play your central role in more informed, timely and accurate decision-making for diagnosis, treatment and follow-up, to enhance patient safety, satisfaction and outcomes.
How to evaluate the value?

There are a number of metrics you can use to track and evaluate the value you are providing for the right report:

- The number of addenda reports
- The percentage of structured reports
- The number of final reports completed within 24 hours
- The completeness of the report structure

"With Enterprise Imaging for Radiology, we can also get our report turnaround time down to 20-30 minutes, which is from the time the radiologist receives the exam to when the final report is available to the clinician. This speed is a real benefit for the clinician and the patient."

"This solution is not just about radiology productivity. Fast, seamless access to reports and images helps everyone, from the clinician to the patient. It’s key for all specialties."

Dr. Scott Logan
Administrative Director of Medical Imaging,
Southern Ohio Medical Center, Portsmouth, Ohio, USA
In the value-based care organization, the role of the radiologist does not end with the interpretation of results and creation of the report. In this new healthcare model, the radiologist is recognized as a full and central member of the care team, who contributes directly to improved patient outcomes, to lowering the costs of achieving that outcome, and to reducing the length of the care episode. To achieve these goals, the radiologist must be part of the creation of a continuum of care, built on collaboration with colleagues, referring physicians, residents and the patient.

FACING THE PROBLEM

Once you have assured the appropriate request and the right acquisition, and created a relevant report, you need to collaborate with other players in the patient’s care continuum: providing additional expertise to support the care team in making timely and correct diagnostic and treatment decisions, or helping engage the patient with an accurate and timely explanation of your findings.

Easy retrieval of accurate, timely and reliable data, as well as easy transfer of information to and from other organizations and clinicians have been recognized as key patient safety attributes.

And bringing the various care players closer together through collaboration is critical in managing population health and controlling its costs, while creating a seamless experience for the patient.

But your solutions need to work with you, providing you with the necessary tools for anywhere, anytime communication, at any point in the patient’s care.
How Agfa HealthCare can help

1 Collaboration that supports timely and correct diagnosis and treatment

Agfa HealthCare is a leader in integration and collaboration, with fully integrated solutions that allow you to reach across the hospital and beyond. Our Enterprise Imaging platform includes easy-to-use collaboration, chat and sharing functions.

For example, you can chat directly with the referring physician to consult further on the exam or interpretation for diagnosis.

This direct collaboration saves time and helps assure that imaging contributes to a positive outcome. Your role as a member of the care team is highlighted, and the value of your expertise shared.

2 Sharing results, for confident diagnosis decisions and timelier patient care

The XERO viewer provides convenient access to imaging results using the most popular web browsers. This makes it easy for referring physicians, other caregivers and patients to see results for themselves.

The Health Management Platform further enhances information exchange, supporting consultations with peers and other experts, and easier access and retrieval of clinical data, for timelier patient-centered care. By providing evidence at the point of care, your expertise can directly impact decision making.

You can add additional value to the patient care by helping the clinician take appropriate actions in the face of certain findings. For example, actionable reports, critical alerts, planning follow up examinations, and your special expertise can all help avoid delayed, missed or incorrect diagnoses.

3 Multi-disciplinary meetings with all the relevant information

Bringing all the players in the care team together reduces the time to diagnosis and treatment, which has a big impact on timely patient care, on total care costs and on the patient’s satisfaction.

With our collaboration tools, you can participate fully in multi-disciplinary meetings, highlighting the key role radiology plays not only in diagnosis, but also in creating a treatment plan and in follow-up.

Using presentations and snapshots with full screen layout, current image level, MPR reconstruction, and more, your input adds depth to the discussion and your findings can be discussed holistically.
Peer and supervisory reviews that assure correct, actionable findings

Agfa HealthCare Solutions also make getting a second opinion or consulting with a radiology peer fast and easy. You can share images, data and reports with a colleague, anywhere, anytime, without requiring special hardware or software.

The resident and supervisor workflow for academic hospitals also enables closer collaboration between senior and resident. The supervisor can oversee that the resident hasn’t missed an indication, a lesion, etc., and can assure that the experience adds to the learning experience of the resident. Teaching files can also be easily shared.

Reaching out to patients

In the value-based organization, radiology is at the forefront of patient care. And this means the radiologist no longer works in isolation, away from medical peers and the patient. An engaged, satisfied patient needs to see the value not only of radiology but of the radiologist.

With the radiology results available for the patient, for example, you could include your contact information. The patient could thus contact you with questions, increasing your role and visibility on the care team.

Scheduling that supports long-term patient care

Assessing the short term response to treatment makes it possible to adjust treatment if necessary, and also enables the success of the patient care to be evaluated. Our scheduling solutions support you with planning timely follow-up examinations. For example, you can schedule a series of exams, with automatic reminders to the patient.

While supporting the long-term patient care and satisfaction, early detection through screening programs can also reduce the length and cost of the care episode. You can send out batches of invitations/reminders for screening programs and assure that screening examinations such as breast imaging follow the guidelines for the specific patient, increasing patient retention.
“With Enterprise Imaging, we can also provide a better ‘service’ to our colleagues. The oncology boards, for example, really appreciate the screen captures in scrollable series we can now create.”

Dr. Ing Han Liem,  
Nuclear medicine physician at Máxima Medical Center,  
Veldhoven/Eindhoven, The Netherlands

How to evaluate the value?

There are a number of metrics you can use to track and evaluate the value you are providing for the collaboration and communication:

- Length of episode of care
- Time to diagnosis and/or treatment
- Number of secondary findings communicated
- Number of multi-disciplinary meetings
- Referring physician satisfaction
- Patient satisfaction
“Value-based care is all about building a health care management strategy that focuses on costs, quality, and most importantly, outcomes.”