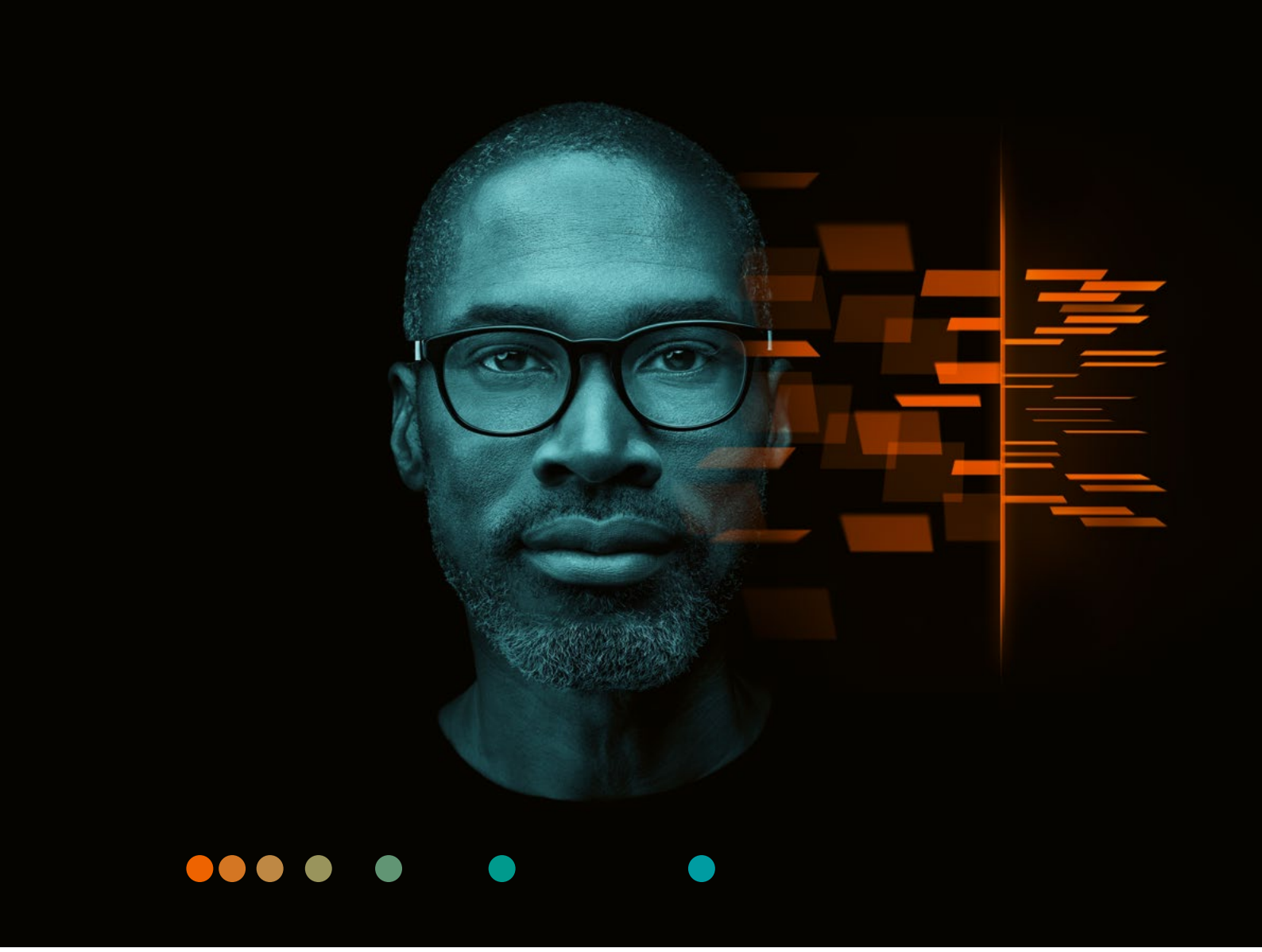

Medicalis intelligent solution for integrated imaging services

A holistic approach to streamlining Imaging Service Line operations

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Medicalis intelligent solution for integrated imaging services

A holistic approach to streamlining Imaging Service Line operations

From imaging orders to result access, demands are rapidly evolving to help provide timely, accurate reading in order to speed up the diagnosis process and with it, the patient treatment plan. While from an operational perspective, the increase of imaging volume and the shorter turnaround time expectations are creating additional pressure for increased productivity and streamlined operations that foster collaboration. Obviously with these increasing expectations, digitalization continues to play a big role in trying to attain these objectives.

Digitalizing healthcare requires continuous optimization to drive and reap the benefits of digital adoption and increase enterprise performance while maintaining personal interaction when needed. From fueling growth by maximizing capacity and leveraging the economies of scale, to streamlining operations, and a patient-centric focus throughout the entire workflow, there are often ample opportunities for optimization at many institutions.

With the use of a variety of systems, challenges are often compounded as some details are unintentionally missed when valuable communication is lost between these various systems. This could impact every step of the imaging process from potential inadequate imaging orders, to inefficient exam scheduling, to the possibility of incomplete supporting information for exam interpretation. This may lead to delays in interpretation and increased unbalanced workload and missed prioritization. There is a clear need for a holistic radiology workflow with a focus on the big picture overarching existing traditional systems.

Inadequate imaging order	**30% of imaging order requisitions** can lack adequate clinical order indications[1]	Up to **26.3% of imaging orders** are either inappropriate or equivocal when placed without evidence based standards[2]
Inefficient scheduling	**Increased wait times** for imaging appointment leads to more no-shows[3]	**No-shows can cost up to $1 million** in lost revenue per year at a standard U.S. academic center[4]
Unbalanced capacity management	Estimated **18% growth of imaging** as a result of the aging population in the U.S. by 2025[5]	**Growing number of M&A** in global healthcare as healthcare providers continue consolidation[6]

Unfortunately, these are common issues which could directly or indirectly impact patient care, physician satisfaction, radiologist productivity as well as operational costs. Medicalis solution provides a holistic approach to streamlining imaging service line operations, in order to maximize the value of the integrated service line, enabling scalability while maintaining flexibility in a multi-system multi-vendor environment.

The Medicalis solution consists of modules to enable ease of ordering the most appropriate exam and intuitive federated scheduling, while using an intelligent workflow infrastructure to ensure the right study is read by the right radiologist at the right time, and encouraging collaboration between all the parties involved. The system leverages existing investment and ensures the institution's service-level goals are met globally while still practicing radiology locally forming a pathway to thrive in a changing healthcare environment.

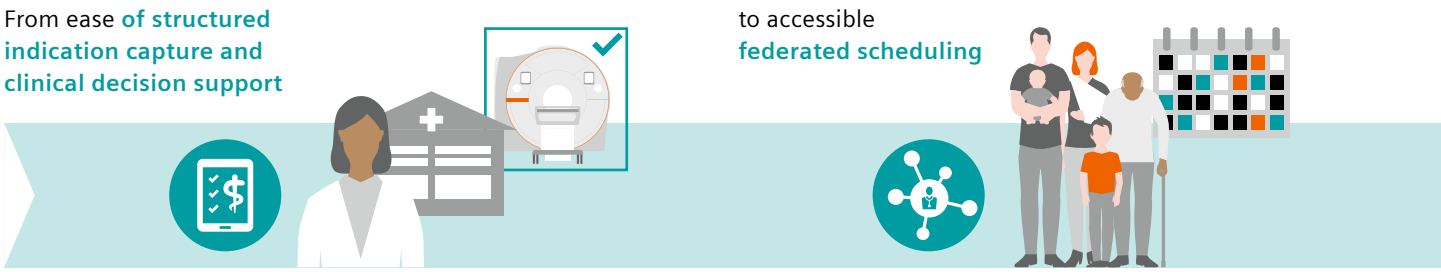
Improve diagnostic accuracy, encourage best practice, and clinically appropriate use of advanced imaging

Maximize imaging resource utilization and minimize wait time

Unlock efficiency, increase workforce productivity and balance workload

Increase quality of care, leveraging the best resources to drive the best outcome for the patient

Medicalis Imaging Service Line solution for integrated imaging services



Medicalis' smooth radiology operation leads to a better imaging service, and an optimized balanced operation for faster results, while maintaining patient, physician and radiologist satisfaction. Here are some of the solution's 5 key areas of focus:

Appropriate imaging exam

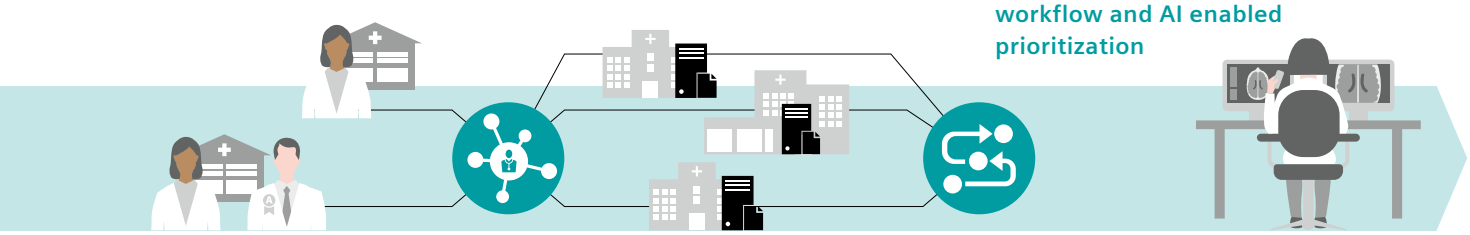
Drive the "Right order first time", with adequate information and structured indication capture while ensuring adherence to imaging guidelines with **Medicalis Clinical Decision Support (CDS)**. Medicalis CDS is the next generation in knowledge delivery and management of diagnostic imaging utilization. Using intuitive design when requesting imaging consultation, referring providers are presented with relevant information and evidence based best practice to help identify the most appropriate imaging procedure for the given patient condition.

To minimize workflow interruption, the system is designed with a targeted approach to ensure that physicians are only engaged in cases where there is high potential for positive impact in return and minimize potential negative impact on patient care.

Multiple portal-based solutions and EMR integrated options are available to ensure seamless dataflow, eliminate duplicate data entry as much as possible, and provide a clear structured indication with each order.

and centralized **order intake management**

to workload balance with **intelligent workflow and AI enabled prioritization**



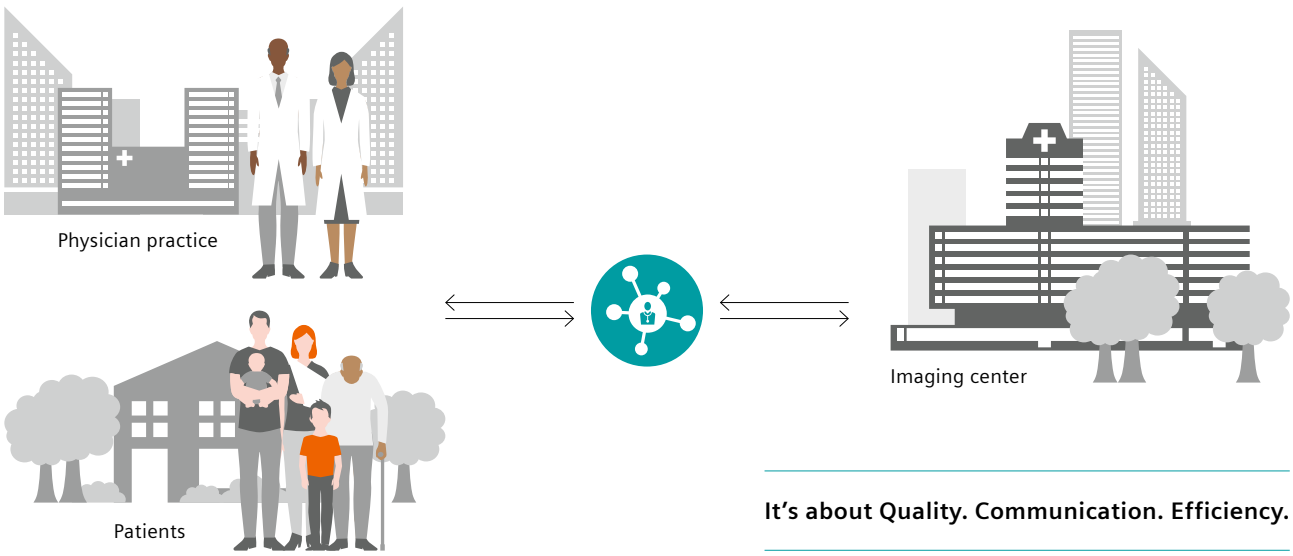
Central order management

Drive standardization and a balanced workload across the participating imaging centers.

The **Medicalis Referral Management (RM)** Central Order Intake Management capabilities coordinates imaging orders from across the network, by centralizing intake from multiple systems such as electronic health record systems (EHR), radiology information systems, and other sources including paper and eFax orders. An additional module enables physicians to submit electronic orders directly into Medicalis RM eOrder Management.

For external referring physicians, Medicalis RM eOrder Management solution facilitates consistent, timely, and bidirectional communication with the referral base. It enables a higher value of service by providing electronic order entry (CPOE) with sub-specialty customization, patient assessment, custom order forms, and optional integration with Medicalis CDS – all in support of the local standard of care and the promotion of best practice.

Using centralizing order intake improves the department's requisition workflows for radiologists, technologists and clerical staff. Standardization provides the means for central intake staff to manage all referral types in a uniform way, and load balance demand across available providers and resources. Ensure appropriate referrals by eliminating potential incomplete orders which could lead to delayed service. The system also helps automate feedback to the referring provider to improve communication.



It's about Quality. Communication. Efficiency.

Federated scheduling

Maximize imaging resource utilization, reduce unused imaging slots and minimize wait time.

Efficient centralized scheduling led to as low as 1% of scheduling call abandonment rate[7]

Medicalis RM Scheduling module provides the ability to offer a federated view of appointment availability across all participating imaging centers within the network, and presents the schedule in a single uniform screen, regardless of the scheduling tools used at each individual center. This helps better accommodate the patient, while maximizing the use of expensive imaging resources, equalizing wait times across the network and improving access to the best available resources to better serve the referrers and patients.

The online multi-site scheduling system can be accessed by the internal departmental scheduling team, by referring physicians and even by patients to schedule their own imaging exam.

The newly introduced patient self-scheduling module is in line with the current change in the way patients interact with their healthcare providers. It directly addresses the patient to pro-actively take ownership and drive their own scheduling with an intuitive patient interface. It is a convenient, easy to use application which forms the vehicle to better accommodate and further engage the patient and create a better experience.

From an operational efficiency and cost saving aspect, the bi-directional integration with existing systems, dataflow from order details to confirmed appointments and rules-based intake forms (when needed) to help eliminate duplicate information and reduce potential data entry errors. The physician and patient self-scheduling capabilities helps free site scheduling personnel from the easy tasks, so they can focus on more complex exam scheduling and allowing the reallocation of resources to other departmental needs.

Balanced workload

No system variability. No capacity variation. No workload imbalance.

Medicalis Workflow Orchestrator (WFO) seamlessly orchestrates radiologist readings across disparate sites, radiology practices, and IT platforms within the imaging network by introducing a common layer to standardize the radiologist workflow.

By bringing together radiologists from various groups within the health system, the system

helps ensure that the most appropriate radiologist is reading the imaging study – regardless of their location. Workflow orchestration balances the radiologist's workload based on criteria such as subspecialty, credentialing, shift availability, service level agreement, and several other operating plan goals. It strategically aligns the health system and radiologists, while ensuring the workload is distributed fairly and efficiently, minimizing any gaps and potential declines in turnaround time.

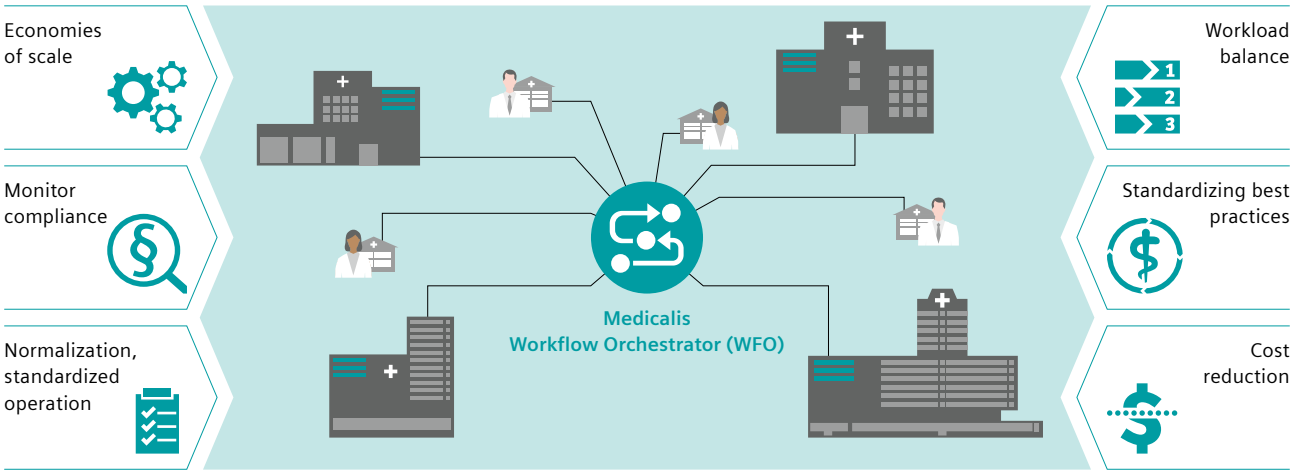
The system creates uniformity by organizing, optimizing, and orchestrating a single workflow across the radiology network to increase the radiologists' productivity and efficiency. Intelligent algorithms monitor the activities and dynamically updates the worklist based on clinical and operational priorities, including AI findings.

The approach is to leverage existing IT investment and benefit from the economies of scale by offering the convenience of a local practice while gaining the advantage of a consolidated service line, supporting "anytime, anywhere" radiology. The strong integrated layer forms a bridge to help reduce variation by aggregating data from multiple sources, including AI applications, while the rich set of APIs enables the use of in-context imaging and reporting tools of choice, with one time single sign-on to reduce unnecessary interruption.

Eliminate physical barriers and siloed systems by providing a step forward for seamless scalability and flexibility to support growing network needs. Workflow orchestration aims to enhance throughput and minimize turnaround time, aggregating all relevant patient information and studies in one view, when the radiologist is ready to read them. Easy information access provides an excellent experience for the radiologist, increases productivity, and provides a better outcome for the patient.

Increased productivity and efficiency, helped up to 50% decrease in report turnaround time[8]

A case distribution and monitoring logic ensures fair and efficient workload distribution, minimizes any potential decline in turnaround time and enables prompt attention when needed.



All with strong in-context communication and collaboration tools

No contest that human interaction remains an absolute priority in the care process, the utilization of digital communication tools and channels when needed is key.

A context-sharing chat improves the collaboration between the radiologist and radiology support staff, facilitating communication in specific scenarios such as study problems or image quality feedback.

"Medicalis has greatly benefited UCLA and its patient population by providing innovation and agility that can't be understated.

We depend on them to provide solutions that adapt to a constantly changing landscape of regulations and reimbursement. I take great comfort in knowing that our relationship is deep and enduring."[10]

Edward J. Zaragoza, MD

Chief of Radiology Informatics, Clinical ProfessorUCLA Radiology at University of California, Los Angeles, U.S.

"Now, radiologists have all the pieces of the puzzle to help them really make a better diagnosis.

And, that simply leads to improved patient care."[10]

Steve Bollin

Regional vice president of radiology support services at Mercy, U.S.

"By utilizing Medicalis technology integrated with our enterprise EHR, Weill Cornell Imaging hasn't just optimized its current safety and operational workflows, it's also well positioned for further reimbursement, regulatory, and operational requirements."[10]

Keith Hentel, MD, MS

Executive Vice Chairman, Vice Chairman for Clinical Operations,Associate Professor of Clinical Radiology at Weill Cornell Medicine, Department of Radiology, New York Presbyterian Hospital. U.S.

[1] *Project to Improve the Transcription of Clinical Order Information into a Radiology Information System (2018) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7746032/#!po=91.6667*

[2] *Source: https://innovation.cms.gov/Files/reports/MedicareImagingDemoEvalRTC.pdf, page 51.*

[3] *Diagnostic Imaging Staff (2018, May). No-Shows Increase If MRI Wait Time Longer than 7 Days. https://www.diagnosticimaging.com/article/no-shows-increase-if-mri-wait-time-longer-7-days*

[4] *HealthImaging (2018, June) https://www.healthimaging.com/topics/healthcare-economics/radiology-departments-lose-1m-year-due-no-shows*

[5] *Dall, T. M., Gallo, P. D., Chakrabarti, R., West, T., Semilla, A. P., & Storm, M. V. (2013). An Aging Population And Growing Disease Burden Will Require A Large And Specialized Health Care Workforce By 2025. Health Affairs. 32(11), 2013-2020*

[6] *Bain & Company: Global Healthcare Corporate M&A Report 2018, http://www.bain.com/publications/articles/global-healthcare-corporate-m-and-a-2018.aspx*

[7] *Optimizing Patient Centric Care through Medical Imaging Services – Weill Cornell Medicine Department of Radiology's Pathway to Thriving in a Changing Healthcare Environment, Frost & Sullivan*

[8] *Prerequisites include, connection to healthcare network, meeting recommended minimum hardware and software requirements and adherence to local data security regulations.*

[9] *Mercy – Enterprise imaging platform supports 'anytime, anywhere' radiology, HIMSS Insights 7.4*

[10] *The statements by customers of Siemens Healthineers described herein are based on results that were achieved in the customer's unique setting. Since there is no "typical" hospital and many variables exist (e.g., hospital size, case mix, level of IT adoption), there can be no guarantee that other customers will achieve the same results.*

The products/features (here mentioned) are not commercially available in all countries. Due to regulatory reasons their future availability cannot be guaranteed. Please contact your local Siemens Healthineers organization for further details.

Siemens Healthineers Headquarters
Siemens Healthcare GmbH
Henkestr. 127
91052 Erlangen, Germany
Phone: +49 9131 84-0
siemens-healthineers.com

Local Contact Information
Siemens Medical Solutions USA, Inc.
40 Liberty Boulevard
Malvern, PA 19355-9998, USA
Phone: 1-888-826-9702
siemens-healthineers.com/en-us

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