

teamply – Streamline Clinical Operations to Unlock Productivity Gains

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Get more out of your imaging data

In the age of digitalization, optimal use of data is key to success. Imaging modalities generate an abundance of clinical data to help diagnose a disease or for follow-up treatment of patients; and there is a lot more value behind imaging data when it comes to operational insights. However, this kind of data does not provide any advantage until you can turn it into actionable information. Today, the majority of operational data is not used, or is fragmented in data silos, or is simply lost – all of which prevents users from being able to derive improvement measures. At the same time, the Internet of Medical Things (IoMT)¹ is growing by approximately 25% every year², accelerating the digital transformation of the healthcare industry and emphasizing the importance of connected data.

So how can you benefit from digitalization to get more out of your data?

teamply is your starting point. teamply performance management applications grant instant access to analytics derived from operational data from your imaging fleet. This will enable you to make objective, well-informed decisions quickly by offering a clear overview of radiology performance data. Monitor quantities such as imaging throughput, dose levels, staff utilization, rooms, and department resources – down to each device and procedure. teamply allows you to simplify your reporting and gain insights to reveal improvement potentials. In addition to that, you can link with other teamply users and their data for comparable benchmarks³, and exchange images with little effort.

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¹The Internet of Medical Things refers to the connected system of medical devices and applications that collect data that is then provided to healthcare IT systems through online computer networks.

Source: <https://www.forbes.com/sites/bernardmarr/2018/01/25/why-the-internet-of-medical-things-iomt-will-start-to-transform-healthcare-in-2018/#600bf0df4a3c>

²Source: Statista, Estimated Healthcare IoT Device Installations Worldwide 2018

³Depending on privacy settings.

How does it work?

The teamplay performance management applications run on the teamplay digital health platform, which is the main enabler of digital connectedness. Healthcare providers can gain easy access to operational, clinical and shared decision-making solutions developed by Siemens Healthineers (SHS) and our partners – greatly enabling scalability and flexibility and supporting future-readiness.

The platform effectively integrates and interconnects data and knowledge from a global and diverse network of healthcare professionals, and already comprises more than 5,000 connected institutions⁴.

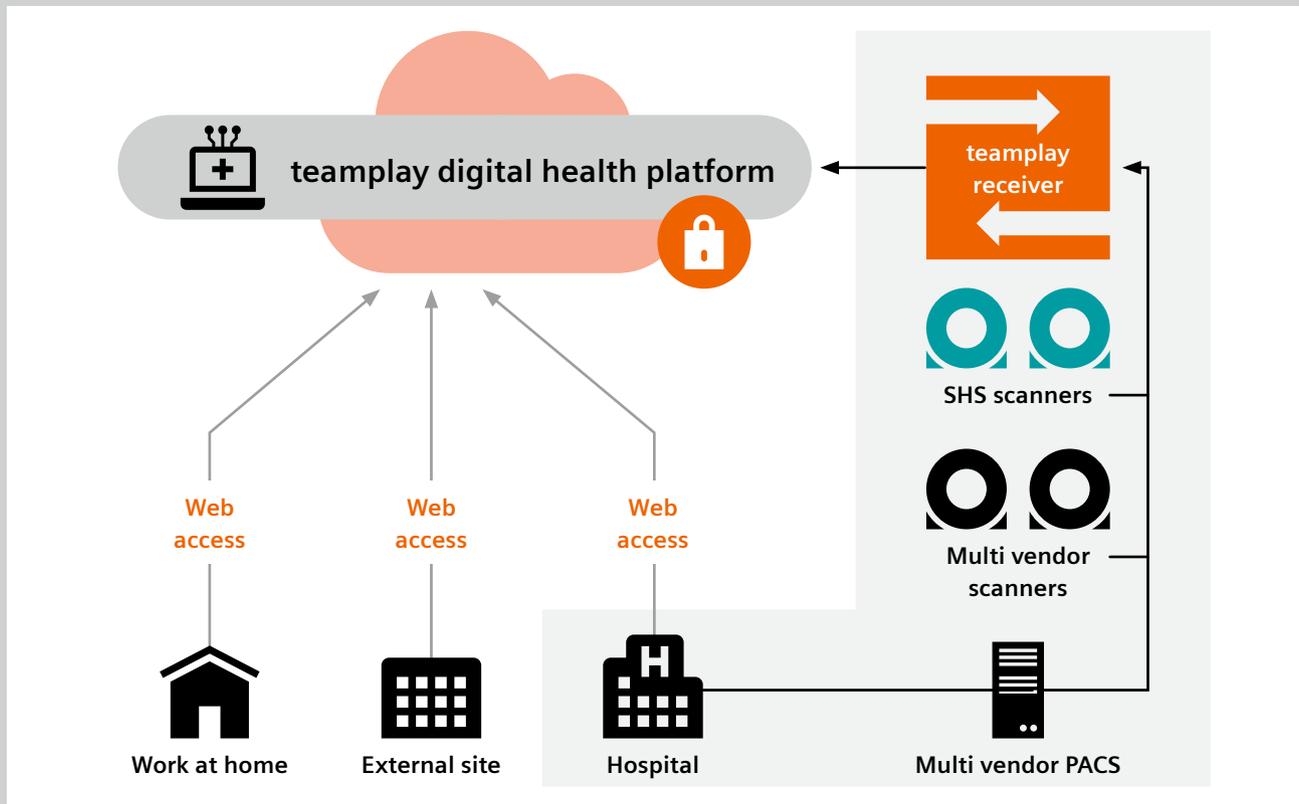
teamplay Receiver software connects your organization to the teamplay cloud and serves as your central data gateway, allowing the exchange of health data in a secured environment – inside or outside your network.

The receiver serves as a DICOM node and fetches data from the connected scanners and/or the PACS, according to your institution’s data privacy policy. Regardless of manufacturer, your entire imaging device fleet (MRI, CT, SPECT, PET/CT, X-ray interventional radiology and cardiology, ultrasound) can be connected and moni-

tored remotely. teamplay’s cloud infrastructure is based on Microsoft Azure, meets industry best practices of security and privacy, and supports HIPAA and is compliant with GDPR, and ISO 27001.

Streamline your operations with the following teamplay performance management applications:

- **teamplay Protocols** – speed up your protocol management by facilitating remote access⁵
- **teamplay Usage** – increase your efficiency and optimize your imaging fleet utilization
- **teamplay Dose** – simplify your radiation dose management
- **teamplay Insights** – maximize your insights, optimize your value
- **teamplay Images** – share and discuss cases in a secured environment⁶



1 Technical set-up for teamplay digital health platform.

⁴Due to regulations, data exchange between data center regions is restricted. The products/features/service offerings are not commercially available in all countries. If the services are not marketed in countries due to regulatory or other reasons, the service offering cannot be guaranteed. Please contact your local Siemens organization for further details.

⁵teamplay Protocols supports selected Siemens Healthineers scanners.

⁶The DICOM viewer is not intended for diagnostic display.

Streamlining operations to reduce wait times

Huge patient backlog and increasing wait times are a significant concern for many imaging departments. Patients often face several weeks of waiting to get an MRI appointment. How could teamplay help you?

One possible solution is offering more exam slots. How can you achieve this without extending opening hours or hiring extra staff? teamplay performance management applications give insights on how to improve workflows in order to increase patient throughput, scanning more patients with the same number of scanners and within a given time.

With teamplay Usage you can see all the MRI scanners in your department, institution or hospital chain at a glance. Key performance indicators (KPIs) such as throughput, patient change time, exams per hour, and table occupancy help you understand your workflow and detect potential for improvement. To achieve the goal of scanning more patients within the same period of time, the two KPIs 'exam duration' and 'patient change time' are of particular interest and could be shortened.

Identify which exam durations can be shortened

Multiple protocols are installed on every MRI scanner, which might make it quite difficult to know where to start optimizing your protocols and to shorten your average exam duration. This task becomes even more complex if your imaging fleet consists of numerous MRI scanners, spread over several locations.

teamplay can support you in identifying the protocols that have the biggest impacts on your workflow, and which are therefore good starting points for optimization. With teamplay you can see which protocols are used, their frequency of use and the respective average exam duration. Combining these three types of information helps you to select the protocols that are used most regularly and show the most potential for shortening exams (Fig. 2).

Optimize patient change times

Another way to increase the efficiency of your radiology department is to focus on the KPI 'change time between patients'.

Patient change times can be quite long when a patient is prepared directly on the MRI scanner. For example, whenever contrast is required for an MRI scan, the process

of preparing the patient and placing IVs typically takes considerable time. Often this procedure is performed inside the MRI room, which means a waste of valuable scan time, as the scanner cannot be used on another patient while it is happening.

With teamplay you can easily identify the average patient change times on each scanner, and even filter them for specific exam type (Fig. 3). The patient change time is calculated as the time between the end of the last scan and the start of a new scan, independent of any other manual actions. If this KPI seems relatively long, the next step should be learning what exactly is happening with your scanners and in the examination (MR) rooms during this time. With this knowledge, you can then find strategies to change the workflow in a way that minimizes patient change times. For example, teamplay Usage helped one of our customers to identify long patient change times on their two MRI systems. The root causes were staff availability, inefficient lay-out of the MRI rooms, and that patients were lacking information about what to expect during the scan. By assigning enough technologists, changing the lay-out of the MRI rooms, and providing educational videos to patients, the average patient change time has decreased by 50%. As a result, 30% more patients can be scanned.⁷

Standardize care and save costs

Standardization of operations helps improve clinical and operational outcomes. Once best practices – for example specific protocol settings – are identified, it is key to quickly spread them across your fleet. But delivering standardized care throughout your entire imaging fleet can be difficult, time consuming, and hard work. For example, it is projected that up to 520 hrs per year are spent by a chief technologist for harmonizing MRI protocols and travelling to the scanners across five different sites, resulting in average labor costs of approximately US\$ 46,800 a year⁸ – not to mention exacerbating the staff shortage many healthcare providers are facing.

teamplay performance management applications facilitate remote access and help minimize the effort needed for standardization.

It all starts with accessible intelligence. By getting a transparent view of your imaging device utilization with teamplay Usage, you can identify processes that take up an exceptionally large amount of time. You can easily

⁷The statements by Siemens Healthineers' customers described herein are based on results that were achieved in the customer's unique setting. Because there is no 'typical' hospital or laboratory and many variables exist (e.g., hospital size, samples mix, case mix, level of IT and/or automation adoption) there can be no guarantee that other customers will achieve the same results.

⁸Assumptions: average annual income of a Chief Radiographer* = 75k USD; 75k USD + estimated employee on-costs = 180k USD; average 8h/d at 250 working days = 2000h/year → 90 USD/h; 10h/week travelling time to harmonize MR protocols across five sites → 520h/year

*Source: <http://www1.salary.com/Chief-MRI-Technologist-Salary.html>

A Filter on Modality type
Select MR

B Identify protocol
In this overview of protocols you can identify which protocol is used most often (size of box) and has a long duration (darkest color is longest duration)

C Track progress over time
See how number of exams and average exam duration has evolved over time for selected protocol.

2 Identify which protocol has the most potential to be shortened, to scan more patients in a given time.

A Filter on Modality type
Select MR

B Select working hours
To get the patient change time during your most productive hours

C See your patient change times
Get an overview of patient change time per scanner

3 Learn which scanners have relatively long patient change time, to adapt your workflow to scan more patients in a given time.

compare different KPIs from all your imaging modalities in your institution, even when you have multiple locations. For example, if you compare average exam durations per body region per scanner, you will be able to see whether there are differences between scanners and identify outliers. Inefficient scan protocols are often the reason for those variations. Once you have identified these differences, you want to make sure that your entire organization benefits from the improved settings.

teamply Protocols facilitates convenient remote access to all protocols, and allows you to adjust and distribute the optimized scan protocols to other scanners instantly (Fig. 4). Moreover, our latest generation of Siemens Healthineers' MRI scanners allows for uninterrupted protocol management. While scanning patients, the lead technologist can manage and adapt protocols remotely, in parallel. This leads to additional flexibility as well as time and cost savings.

Overall, teamply's convenient, remote protocol management helps you to provide standardized, high-quality care throughout your entire fleet.

Siemens Healthineers collects best practice protocols for MR from all around the world on the MAGNETOM World website (www.siemens.com/magnetom-world). From here you can easily import these best practice protocols

into teamply to distribute them to the scanners in your fleet. For example, to aid standardization of cardiovascular MR imaging, the Society for Cardiovascular Magnetic Resonance (SCMR) released CMR exam protocol recommendations for the most frequent procedures. Based on the Cardiac Dot Engine, we have prepared clinically optimized exam protocols for 1.5 and 3T MAGNETOM MR scanners from Siemens Healthineers.

Fleet management across your imaging modalities

teamply covers and connects your entire imaging fleet from Siemens Healthineers and other manufacturers, from MRI, CT imaging, PET/CT, X-ray, and mammography to interventional angiography. With one powerful tool you have all the data at your fingertips to improve performance and enable standardized care.

Another very important topic for radiology departments is to keep provided radiation doses as low as reasonably achievable (ALARA). With teamply, you can monitor dose levels and identify and analyze outliers. This allows you to provide the best quality of care to your patients, and also ensures compliance with national dose regulations.

A Filter on Modality type
Select the scanner you are interested in

B View protocols
See which protocols are available on your selected scanner

C Set up connection
Edit protocols remotely

D Distribute protocols
Share best practices protocols with other scanners in your fleet or share with peers

4 View your protocols, edit them remotely, and distribute your best-practice protocol throughout your fleet.



“We went from hours down to minutes to get the same protocols out to the fleet.”⁷

Robert Day
Chief Operating Officer,
Zwanger-Pesiri Radiology, New York, USA

Zwanger-Pesiri Radiology Snapshot

For over 60 years, Zwanger-Pesiri Radiology has focused on patient-centered care, research, and education. Led by Steven L. Mendelsohn, M.D., the team of 1,100 professionals with over 60 radiologists, 45 nurses, 300 receptionists, 75 MRI technologists, 15 nuclear technologists, 150 X-ray and CT technologists, 110 schedulers, 80 billers, and 30 IT staff members is dedicated to providing state-of-the-art radiology services. The radiologists work closely with referring physicians to ensure optimal outcomes for patients. To support them in their clinical work, they use high-end imaging equipment including one Siemens Biograph mMR PET-MRI, 25 3T Siemens MRIs (22 MAGNETOM Skyra, 1 MAGNETOM Vida, and 2 MAGNETOM Verio), nine 1.5T Siemens MRIs (6 MAGNETOM Aera, 2 MAGNETOM Espree, 1 MAGNETOM Amira), five Siemens PET/CTs, and a myriad of other units from 3D mammography, to open-sided MRIs as well as countless ultrasound, X-ray, DEXA and ABUS units.

Summary

Healthcare professionals, hospitals, and institutions of higher learning come together in teamplay's rich digital network to access the metrics from their own imaging.

Streamlining your clinical operations with teamplay enables an increase in productivity, while also reducing wait times and giving higher-quality care. This means you can provide more time and attention to your patients, and improve patient satisfaction – an increasingly relevant factor in the reimbursement of healthcare services.

For more information and to try teamplay yourself, visit: www.siemens-healthineers.com/teamplay and select the 'Try teamplay!' button in the upper-right corner.

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