PHILIPS

Radiology Informatics

Customer story

Smooth migration to unified radiology workflow solution

Radiologie Oldenburg
Oldenburg, Germany

Who
Dr Volker Kunze, Radiologist and IT responsible
Melanie Decke, Radiographer and Administrator

Where
Radiologie Oldenburg, Praxis für Radiologie und Nuklearmedizin, Praxis Steen und Partner, Oldenburg, Germany

- Largest private outpatient practice in the area
- Nine senior doctor partners
- Specializes in nuclear medicine, oncology and breast diagnostics screening
- Performs more than 74,000 studies a year, including 16,000 CT; 18,000 MRI; 12,000 X-ray; 5,000 Ultrasound; 2,900 nuclear medicine examinations

Challenge

- Replacing an existing solution that has been used by the customer for years without negatively impacting the workflow
- Ensuring smooth and secure data migration with anytime access to legacy data
- Improving collaboration with referring physicians
- Integrating vendor-agnostic solution effortlessly into existing IT landscape of the department

Solution
Workflow-driven efficiency with a new image management platform, data migration experience and a smooth transition

Radiologie Oldenburg, a large, private outpatient practice in Northwest Germany, wanted to replace its existing PACS system without interrupting the workflow. The solution should integrate effortlessly into the existing IT landscape while providing a solid data migration process performed smoothly and securely in a short time frame.

Maintaining diagnostic quality is key to retaining patients as well as referring physicians. A unified PACS workspace – including native interactive multimedia reporting and a dedicated referring physician portal – was implemented to maintain the standard level of efficiency.

Philips: a proven partner
Philips developed a comprehensive, intuitive and "across ologies" modular image management solution that includes reporting and communication tools to help the organization achieve its goals to improve patient outcomes, collaboration and organizational efficiency. With hundreds of projects completed worldwide, a highly experienced delivery team performed the legacy data migration smoothly in the background without disrupting Radiologie Oldenburg's activity and secured its legacy data integrity.

Key results* achieved:

1 consolidated radiology workspace
Migrated legacy studies from three different archives to a single Philips PACS

99.7% of data migrated successfully
Migrated 1.2 M studies were migrated with storage of 40 TB

<1 day downtime
The experienced team made the migration possible with less than 1 day of interruption to ongoing operations

Three pillars of collaborative, solutions-based success

Philips collaborated with Radiologie Oldenburg to implement the PACS replacement project focusing on overall workflow effectiveness and end-user satisfaction.

"If we decide to replace our PACS solution, we wanted a new system that really shows benefits, not just the same features of the old system again. **We wanted a system that can do more, be simpler and take us further with more efficiency**."

Dr Volker Kunze

1. Increasing efficiency with PACS-driven workflows

The guiding principle of a PACS-driven workflow dictates that the radiologist focuses on the patient examination and gets all the information required for the diagnosis from a single workspace. The information usually found within the RIS can be accessed through the PACS patient jacket. This contributes to end-user comfort, reporting efficiency and ultimately a shorter time to result.

The interactive multimedia reporting eases the radiologist workflow, allowing smooth reporting and simple inclusion of image measurements into the report while manipulating the images. Philips PACS comes with native advanced visualization tools available at the radiologist's fingertips; there's no need to open another application. It generates a high-quality report while requiring minimal radiologist intervention.

"When I saw the Philips PACS, it kind of grabbed me," said Dr Volker Kunze, Radiologist and IT responsible. "I liked the completely natural workflow. **I'm looking at my worklist and images, and I can continue my measurements and reporting in the same system. That's what I want. As radiologists, we work with the images to create findings with measured values, and this is easier in one system."**

Enhancing the clinician experience

For many healthcare providers, addressing radiologist workload and pressure on committing on agreed reporting times has become a higher priority. This has led to a higher turnover rate that includes job-hopping and leaving the occupation entirely.

To be successful, diagnostic imaging centers must focus on retaining experienced staff and fostering the loyalty of referring physicians. Philips PACS offers an intuitive user interface and immediate access to patient data and a high-quality report, which helps in both areas. Including the referring physicians in the workflows can lead to increased engagement, which studies indicate can help improve patient outcomes and experience.

Streamlining workflows is imperative to delivering high-level patient care and enhancing productivity, as well as improving radiologist satisfaction. This is particularly important during a time when radiologist shortages have become a pressing issue.

Making workflows easier to work with

To create interactive multimedia reports in an efficient manner, there needs to be seamless integration between the image data and the reporting application. Philips accomplishes this by embedding reporting functionality into the PACS.

Interactive multimedia reporting creates a tight connection between the written imaging report and the image data within the PACS. The radiologist can automate the insertion of image-related information that remains connected back to the images via active hyperlinks. Any report consumer – including care provider, patient or radiologist reading a follow-up study – can access the images quickly. Hyperlink activation launches the relevant annotated image and full scrollable study within the PACS.

With an intuitive user interface, Philips PACS helps radiologists complete reports faster and with less effort. Improving efficiency requires immediate access to the relevant information – including the patient order request, potential history and the clinical tools required for the diagnostics. All the key elements are inserted into the report automatically so radiologists can focus on images.

Automated incorporation of measurements, series numbers and image numbers into a report helps the reporting radiologist save time. For the downstream consumer of the report, the report is clearer and more comprehensive. Hyperlinked text eliminates time spent hunting a text-only report for pertinent findings, identifying the series and image number, opening the viewing platform, and scrolling to the image of interest.

One benefit that has helped Radiologie Oldenburg improve efficiency is prior exam matching. Exams are simultaneously linked; any work completed on one is reflected on the other exams and is immediately available, operating between the current and prior studies. In the past, staff were forced to search for previous exam results manually. This is extremely common for oncology patients as it was common that they arrived with preliminary images.

“It is really uncomplicated and comfortable to get prior studies in one view and compare them with recent studies; this is critical for oncology patients,” said Dr Kunze. “The system recognizes the patient data and requests the radiologist add them to the existing patient record.”

Radiologist turnover: a global trend

A study in the Journal of American College of Radiology reported that nearly 20% of radiologists separated from a practice in a single year. During the four-year period of the study, 41% of all radiologists left at least one job.[1]

According to a survey in the Medscape Radiologist Lifestyle, Happiness and Burnout Report, prior to the COVID-19 pandemic, radiology was ranked at 86% for the happiest specialties in their lives outside of work. Today, that percentage has fallen to 61%.[2]

Radiologists reported feeling burned out and depressed. Contributing factors include:

62%
Too many hours

41%
Lack of control/ autonomy

10%
EHRs

22%
Government regulations

"Most of our employees were anxious about using the new system. I would say that it has gone well with everyone since the system was implemented. **Overall, everyone is very happy with it.**"

Melanie Decke

2. Alleviating concerns associated with changing systems

Making the decision to change imaging solution providers is not an easy one. Organizations cite two major areas of concern when migrating from one technology provider to another: user adoption and transferring patient data. **To ensure that employees are happy, it's important to provide robust, comprehensive training and back it up with ongoing support after the implementation is completed.** The Philips solution offers ease of implementation and change management. The private, highly secure infrastructure helps maintain data security while migrating to the new system and beyond implementation.

Adopting new technology

Because Philips PACS touches the entire workflow of the organization, there are a variety of roles who will interact with the technology, including clerks, technologists, administrators and radiologists. Melanie Decke, Radiographer and Administrator, explained that some employees were vocal with their concerns when Radiologie Oldenburg announced it was going to make the change.

Experimenting with the new system, however, was a fun experience for Dr Kunze. "For me, such a new system is great and gives you the possibility to try out the different capabilities, and this is something I enjoy," he said. "Of course, there are also colleagues who just want to work with the system, but for me it's also fun."

Change management, the quality of training and the intuitiveness of the new user interface all play a part in how quickly end users get comfortable with a new application or software. The team appreciated the speed of data migration, confidence of execution, data security and effortless integration in their IT environment. While data loss is possible in migrating legacy data, the process has far exceeded expectations. **The pre-migration estimate was 5% loss, but upon completion, actual loss was only 0.33%**. (1.2 M migrated studies from another vendor PACS to Philips.). The migration was smooth and well-planned. Overall, the experience has been positive for all involved.

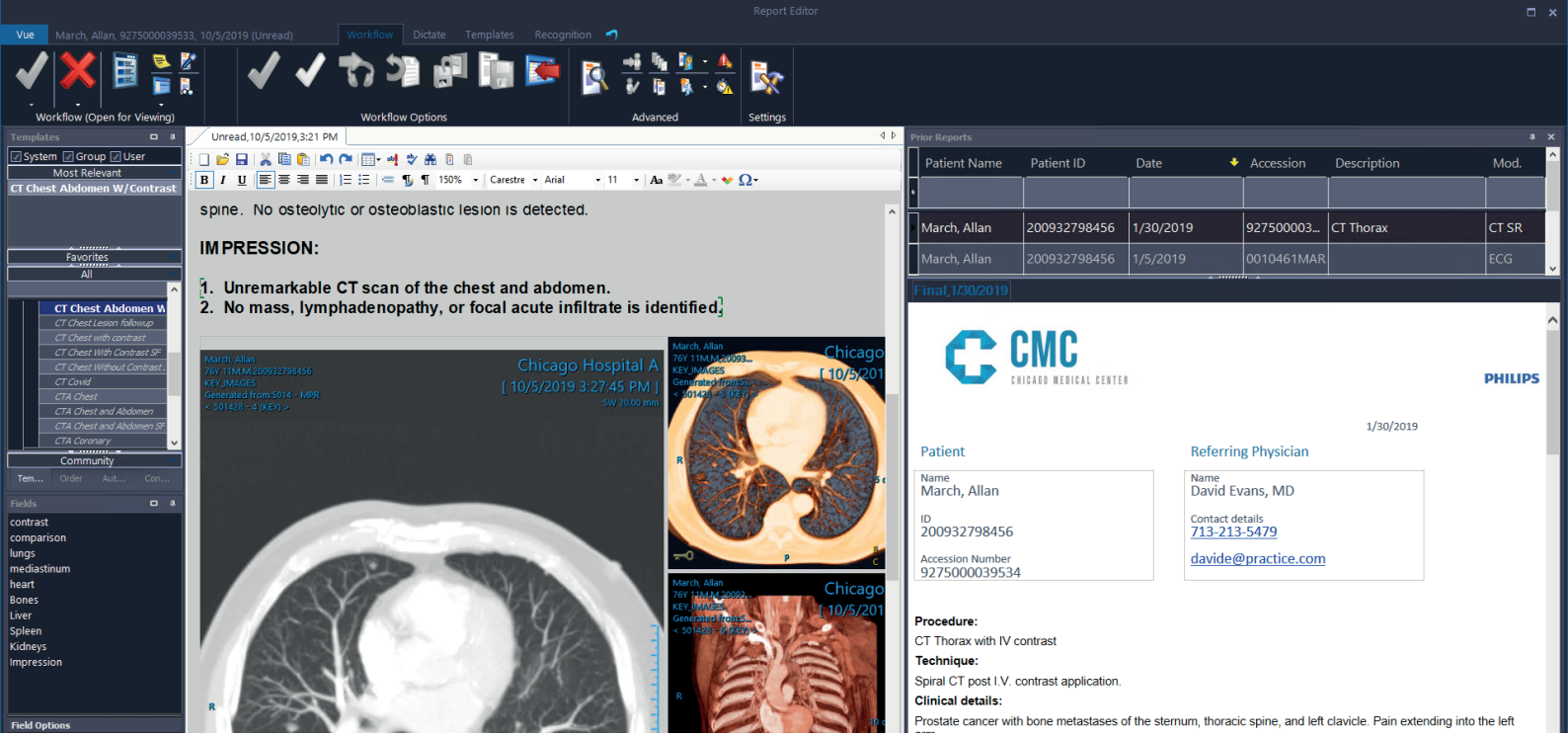
Transferring patient data

During the migration process, data loss and workflow interruption are the two biggest concerns for any organization. A prior study may not be immediately available and needs to be manually retrieved. This can slow down the reporting process quite a bit. In addition, there's also a need to maintain the legacy system until the migration is complete, which can potentially generate additional costs to the institution. Thanks to a highly experienced deployment team with experience of hundreds of data migration projects worldwide, legacy data migration is run smoothly in the background without disrupting the department activity and securing legacy data integrity. The team completed the process two months ahead of schedule and the customer was able to access all prior studies from day one.

Dr Kunze was complimentary regarding the team's process, communication, and collaboration. "Philips had a to-do list that you had to work through little by little, with time constraints and other details," he said. **"The plan was clear from both sides: they knew what we wanted from them, and we knew what Philips was requesting from us."**

Continuing support during the Migration

The Radiologie Oldenburg team was pleased with the level of support they received after implementation. **"I have to say, it was really good,"** Dr Kunze said. "Telephone support went well: thanks to a dedicated application specialist, we could call someone from the support team directly, and maximum half an hour later, they call you back. The support team helped us adjust to the new system as much as possible." "We had a case with an image, that was acquired at a workstation with no patient ID," said Ms Decke. "We manually entered the information and then everything was sent to the PACS. We ended up with mismatching information, so we had to call the service desk to help us. **Thanks to the online access, we opened a ticket including all the information and after an hour or two, the Support team called me back and we resolved the issue together. That was then very simple."**



3. Improving clinical insight and collaboration

Quality and efficiency of reporting was key to Radiologie Oldenburg. While they wanted faster turnarounds on exams, they expected each report to deliver greater clinical value and insight.

Because Radiologie Oldenburg specializes in oncology and breast diagnostic screenings, it preferred an optimized workflow specific for its needs that offered an embedded lesion management application. Philips PACS is customized for its practice and includes interactive multimedia reporting together with native clinical applications, like lesion management. This allows for an effective and focused workflow by putting relevant information and intuitive diagnostic tools at hand.

To avoid manual importing of relevant findings and have a faster turnaround on exams delivering greater clinical value. Native interactive reporting was introduced in the workspace, eliminating the need for a separate reporting solution. Native voice recognition reduces typing and entering patient or clinical context. This is fully integrated in the workflow and improves the clarity of the report and shortens the time it takes to read it.

The radiologist can automate the insertion of image-related information into the report, such as key images, precise quantitative data, charts and hyperlinks to prior studies in Enterprise Viewer. Exam data can be inserted directly and remains connected back to the images themselves via active hyperlinks within the report. The resulting report the referring physician receives is clearer, tracked, insightful, and includes the ability to make simple volumetric comparisons.

One of the biggest differentiators in the new system was the inclusion of a referring physician portal, which helps distribution of reports and results run smoothly. **"That's what everybody wants,"** said Ms Decke. "Referrals want images to be there quickly to do their job. Patients want the report fast … and want to come in and go out quickly."

The referring physician portal encourages real-time collaboration using native chat and live screen-sharing between clinicians, and it supports sticky notes communication, including indication of critical results. With a single click, physicians can email a link to an exam to colleagues across town or across the country to expedite second opinions. "Result distribution needs to run smoothly and looking at the images online is much, much faster," said Dr Kunze. Thus far, he said referring physicians have been pleased with the new system's performance.

Ms Decke agreed, adding, **"It's simple, it's clear, we have other options, especially in terms of how we get the images. Everything is stored there. I think the referral portal is really, really great."**

Overview of interactive reporting

Interactive reporting saves time and reduces errors by:

- Populating DICOM and HI7 data to minimize reporting time and improve accuracy
- Including hyperlinks to prior studies, which can be inserted by voice command, eliminating long dictation of dates and minimizing the risk of errors
- Using a single user interface for reading images and dictating reports, which leads to improved proficiency and productivity while making better use of desktop real estate

"**I can click on it and the results just jump to me.** The anatomical registration works fantastically. I can see oncology patients' details much faster. The voice command and the hyperlinks facilitate the work immensely. Less prone to errors. That makes finding the measurement for an oncology patient much faster."

Dr Volker Kunze

Results:

The collaborative partnership between Radiologie Oldenburg and Philips has proven successful in terms of enhancing the patient, physician and staff experience.

Collaborating to create an integrated workflow that improves efficiency

Referring physicians

"In terms of processing images, that's totally easy and fast. That's what everybody wants. Referrals want images to be there quickly to do their job. Patients want the report fast … and want to come in and go out quickly." "

Melanie Decke

Maintaining relationships with referring physicians is essential to Radiologie Oldenburg's bottom line. They expect accuracy and quick turnaround. Radiologists now have **immediate access to relevant patient data and tools in an all-in-one, fully integrated with enterprise imaging platform** with an intuitive user interface. They can achieve faster turnaround time with confidence in the quality of the report with minimal radiologist intervention.

IT Manager

"At the beginning, I was afraid that the migration process would take forever, and we could lose a bunch of studies. But the migration went surprisingly good and smooth. You can't wish for more."

Dr Volker Kunze

The private, highly secure infrastructure maintains data security while migrating to the new system and the experienced **team achieved results quickly without interruption to current workload**. Less than one-half of 1% of over 1.2 million studies

Radiologist Senior Partner

"The system recognizes the images automatically, without great administrative effort, as images from the same patient. This is something that we've never seen before here and that's simply great."

Dr Volker Kunze

With concerns over burnout, organizations must focus on retaining experienced staff while fostering the loyalty of referring physicians. The Philips solution offers an **intuitive user interface, immediate access to patient data and a high-quality report**. Radiologie Oldenburg has received positive feedback on the physician portal.

With an integrated portfolio of healthcare informatics solutions, Philips works to simplify physician collaboration across the community of caregivers, healthcare institutions and networks, who are tasked with ensuring quality of care while optimizing operational efficiency. Our vision is to fully integrate diagnostics, generating and combining clinical data across radiology, pathology, genomics and longitudinal data. With the insights enabled by a single patient view, clinicians can see beyond to confidently perform first-time-right diagnosis and deliver more personalized treatment.

We're building a centralized information hub and collaboration suite spanning radiology, cardiology, pathology, oncology and operational informatics to enable cross-department and cross-hospital collaboration through sharing of meaningful insights. Philips wants to help doctors achieve a more precise diagnosis and help healthcare organizations achieve a lower total cost of ownership.

"Philips had a to-do list that we had to work through little by little, with time constraints and other details. The plan was clear from both sides: they knew what we wanted from them, and we knew what Philips was requesting from us."

Dr Volker Kunze

* Results from case studies are not predictive of results in other cases. Results in other cases may vary.

1. Stefan Santavicca, MS, et al. Radiologist-Practice Separation: Recent Trends and Characteristics. Journal of American College of Radiology. Nov. 13, 2020.
2. Taschetta-Millane, Melinda. The Radiologist Burnout Crisis. Imaging Technology News. March 8, 2023.

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00000412-00-01 * MAY 2024