Impressive speed and efficiency

Evangelische Kliniken Gelsenkirchen reduces
dose by 30% using new DR detectors

Case study: Evangelische Kliniken Gelsenkirchen
Gelsenkirchen, Germany

AGFA ◆ *Agfa*

Case Study

INTERVIEW WITH:

ALEKSANDAR DOBRILOVIC
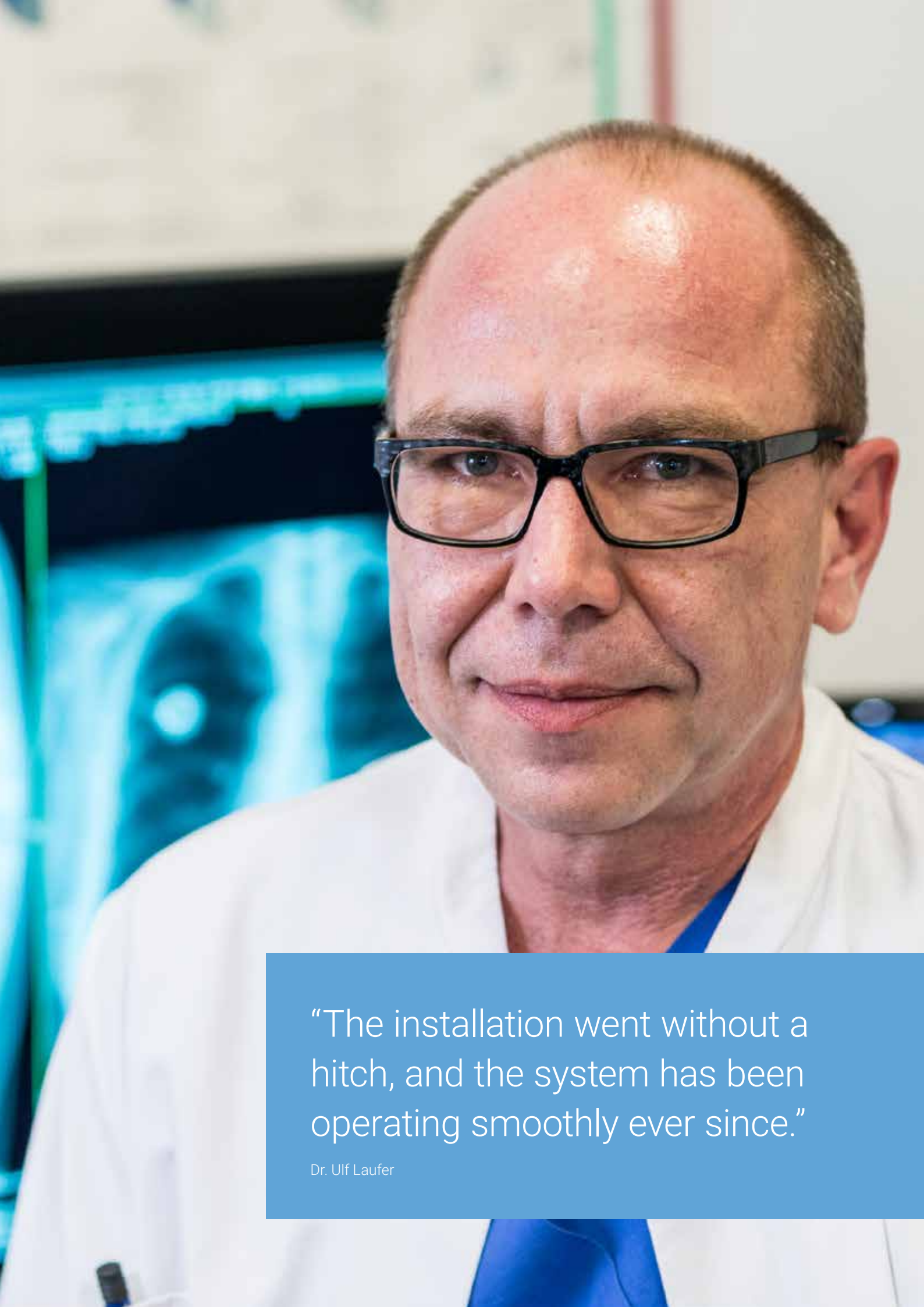MEDICAL TECHNOLOGY DIRECTOR

TANJA PUCH
SENIOR RADIOGRAPHER

DR. ULF LAUFER
HEAD OF THE DEPARTMENT FOR DIAGNOSTIC
AND INTERVENTIONAL RADIOLOGY AND
NUCLEAR MEDICINE

Healthcare facilities today face a shared challenge: to deliver increasingly high performance with the same number of staff and with the same, or a higher, workload. But in radiology, in particular, ensuring a high standard of patient care through fast and confident diagnoses has always been a key objective. Teaching hospital Evangelische Kliniken (EVK) Gelsenkirchen in Germany is rising to the challenge with new DR systems from Agfa.

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Dr. Ulf Laufer

Dr. Ulf Laufer, head of the department for diagnostic and interventional radiology and nuclear medicine, understands the importance of fast and efficient processes with state-of-the-art technologies – and for him as a radiologist, this means using direct radiography (DR) systems: "Up until mid-2017 we were working with Agfa imaging plates, but the time had come to upgrade." The upgrade involved not just image quality and management of radiation dose, but also work processes, with the aim of making day-to-day tasks easier for the radiology team. "The digital detector system allows us to work faster," says senior radiographer Tanja Puch. "There's no need to insert cassettes into a reader device any more. Instead the DR image is available immediately. By eliminating this step, we can work more efficiently. It makes the whole process easier for everyone."

FROM CR TO DR – FOR GOOD REASONS

After researching the market for DR systems, EVK Gelsenkirchen once again opted for a solution from Agfa. In May 2017, three DR Retrofit systems from Agfa were installed at the hospital: in radiology, the intensive care unit (ICU) and the associated outpatient medical center. The ICU was equipped with the ultramobile version of the DR Retrofit, which uses a mobile tablet PC as a workstation. "We were especially impressed by the amazing flexibility of the system," says Puch.

"The most important criterion was the new DR 14s detector," recalls medical technology director Aleksandar Dobrilovic. "The detector is very lightweight, splashproof, and has a long battery life. Thanks to the MUSICA image processing software, it also offers high image quality with a low radiation dose."

The transition from imaging plates to DR detectors began in the outpatient medical center. "We worked with Agfa and its distributor Allmedt to analyze the processes in place and discussed them with users. This detailed preparation meant that the transition and staff familiarization with the new system went very smoothly," reports Dobrilovic.

The staff in the outpatient center were very enthusiastic about the DR 14s detectors right from the beginning, and this high level of satisfaction has been maintained in the hospital as a whole. "The first time we used the detector, it was a new experience," says Puch. One of her colleagues was initially skeptical. "But right from day one, we found we could examine patients much faster than before. The ice was broken, and now she is one of the biggest advocates of the new technology."

FASTER WITH DR

In radiology, the detectors were assigned to the X-ray workstations. The radiographer uses the RIS worklist to select the patient and can then view the exam with the relevant parameters, which can be confirmed or adjusted. The X-ray images are available to view on the monitor immediately after the exam. "We perform up to 1100 X-rays a week, so you can imagine how much time we save compared with using CR," says Dobrilovic.

For imaging in the ICU, the ultramobile DR solution comes into play. Both the patient's details and the MUSICA image processing software are available on

a tablet PC. The patient is positioned on the detector, and the image is acquired with a mobile X-ray machine. "Thanks to WLAN, the images are available on the tablet in a matter of seconds, and we can perform quality control straight away. If necessary, we can do a retake without having to position the patient again," explains Tanja Puch.

The easy-to-use system greatly reduces physically fatiguing work for the radiographer. "Patients in the ICU are normally immobile," says Dobrilovic. "With CR there were often problems with image acquisition, but now this is a very rare occurrence. The radiographers can also work much more quickly and easily."

This speed has two positive effects: it allows more patients to be examined in a shorter amount of time and it reduces the burden on staff, freeing them up for other tasks – which directly benefits patients. "Because we are less pressured for time, we can devote more attention to them," says Puch.

HIGH IMAGE QUALITY AND DOSE REDUCTION

Above all, Dr. Laufer is impressed by the high image quality offered by the DR technology: "It's noticeably different from CR images, because the image impression is more consistent. The images from the ICU, in particular, are easier to evaluate. When you consider the tricky conditions in which the images are acquired, MUSICA does an excellent job of presenting the available information."

Dose reduction is a sensitive issue. As Dobrilovic explains: "By modifying the exposure parameters and the cut-off dose, we were able to reduce the radiation dose by around 30% without compromising on image quality. Even our expert was pleasantly surprised at how low a dose could be used to perform the individual exams."

"In fluoroscopy we plan to use the DR 14s detector for free exposures and bedside lung imaging," adds Dr. Laufer. The innovative image processing solution MUSICA also opens up a range of possibilities. "With the DR detectors we achieve even better quality for lung X-rays compared with CR," says Puch. The reason is simple: lung images are normally acquired with an anti-scatter grid, which is difficult to use at the bedside. The image processing software MUSICA Chest+ eliminates scatter computationally to create optimized images.

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Aleksandar Dobrilovic

GOOD SUPPORT MEANS
A HAPPY CUSTOMER

Asked for their conclusion, the team in Gelsenkirchen express their satisfaction with the new DR systems. Dr. Ulf Laufer explains: "The installation went without a hitch, and the system has been operating smoothly ever since. The relationship also functioned extremely well, which unfortunately isn't always the case. Some minor difficulties at the outset were resolved within a time-frame that was acceptable to us."

Tanja Puch adds: "We received very good support, and there was a knowledgeable team on hand who were always available to give us help and advice. Whenever we had any problems or questions, they were always there."

For Aleksandar Dobrilovic, the most important thing initially was whether the new DR systems worked smoothly – and they do. "But it's in exceptional situations that a vendor really proves their worth, and unfortunately we have experienced a few of those exceptional situations. I was very impressed with the Agfa DR systems, and I can say that Agfa promptly delivered the quality I expected."

EVANGELISCHE KLINIKEN GELSENKIRCHEN

DR Retrofit with **high flexibility**

Saves time compared with CR systems

Reduced dose with high image quality

Satisfaction thanks to effective support

Aleksandar Dobrilovic, Tanja Puch and Dr. Ulf Laufer (left to right)

EVANGELISCHE KLINIKEN GELSENKIRCHEN:

- Evangelische Kliniken Gelsenkirchen is the academic teaching hospital of the University of Duisburg-Essen and has 433 beds. The hospital's 15 departments handle approximately 17 000 admissions and 54 000 day cases every year.

- The department for diagnostic and interventional radiology/nuclear medicine is very well equipped, with 1.5 Tesla MRI, 64-slice CT, digital subtraction angiography, fluoroscopy, various X-ray workstations, two Bucky workstations and a mammography system with biopsy table. The team of seven radiologists and twelve radiographers performs more than 20 000 X-ray examinations every year.

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