

Process improvements in the ED led to cost savings for the entire hospital

What would you do, if you were tasked with building a new Emergency Department (ED) in your hospital? Which processes would you optimize? Which areas would you focus on?

In 2004, Dr. Andreas Grundmeier, MD, was tasked with building a modern and efficient ED at the Kliniken Essen-Mitte in Germany. The new ED should be very close by to the ambulance service and the intensive care unit. But most importantly, it needed to secure a faster and more efficient patient diagnosis and overall patient flow.

Holistic approach

As part of this process, Dr. Grundmeier looked at the ED from a patient, financial and legal perspective.

“Several medical disciplines needed to be available at the ED as well as an efficient triage system, so that patients could be appropriately diagnosed and either admitted or discharged,” Dr. Grundmeier explains. “But we also needed fast access to the right results at the point of care.”

According to Dr. Grundmeier, previously, blood samples were sent to the central lab, which is approximately 500 meters away from the hospital, by car or ambulance. The test results were then faxed back to the ED. “It would take approx. 1 hour 15 minutes to get our Troponins. That was just not good enough.”

In the end of 2008, the new and modern ED at the Kliniken Essen-Mitte opened.

It was equipped with a Radiometer ABL837 FLEX blood gas analyzer with creatinine and later on the AQT90 FLEX immunoassay analyzer. The two analyzers gave the ED direct and fast access to blood gas, electrolytes and immunoassay results.

New standard operating procedures were also implemented.



ED: Focal point of the hospital

Today, according to Dr. Grundmeier, all patients who do not have appointments enter the hospital via the new ED, which has become the focal point of the hospital.

The primary goal of the ED physicians and Dr. Grundmeier is to make a risk analysis on patients entering the ED. Following triage, which is now handled directly in the ED without the need to wait for sample results being faxed back from the lab, the ED physicians determine whether the patient should receive outpatient treatment, be sent to the ICU or transferred to a different hospital in the region better equipped to treat the patient's actual condition.

Dr. Grundmeier says: “We have immediate access to CT scanning next door and our patients from the ED have priority. X-rays are done with waiting times shorter than 10 minutes. The same goes for CT scanning.”



Particularly with the AQT90 FLEX, we have seen concrete benefits: Results in only 18 minutes compared to 1 hour.





Increased patient flow, decrease in overall costs

"Today, when we send patients to another department or another hospital, we are 96-98% sure that we have made the right triage," Dr. Grundmeier continues. "This saves on overall hospital costs for new transfers, improves patient flow and ultimately shortens length of stay."

He continues: "It also has an impact on overall care and costs in other parts of the hospital. For every two patients who are not unnecessarily admitted to the ICU because a more accurate diagnosis is made in the ED, we – as a hospital - save money enough to run blood gases on 20 ICU patients. That's the kind of costs savings we're talking about."

Having acute care parameters available directly in the ED and the improved processes have meant that the average length of stay in the ED in the Kliniken Essen-Mitte is now down to two hours as opposed to the four hours six years ago.

Benefits of a solution felt by end-users

Securing a short turnaround and ease-of-use were paramount for Dr. Grundmeier when choosing point of care devices. "The Radiometer solution we chose fits that bill," says Dr. Grundmeier.

"Particularly with the AQT90 FLEX, we have seen concrete benefits: Results in only 18 minutes compared to 1 hour - 1 hour 15 minutes when sending to the lab; the hassle of sending the sample with an ambulance, get fax replies back, have nurses call several times to ask for results, etc. Now, nurses can see for themselves how long it takes before results are ready and can control the process."

The nurses handle the sample analysis, whereas the lab still oversees the maintenance of the two Radiometer analyzers in the ED. The nurses do not have to worry and are not burdened by additional tasks other than drawing the sample and doing the analysis in a few, simple steps.

"First, our nurses were opposed to the fact that we should have our own analyzers in the ED. But after having tested it, they simply loved the new set-up," Dr. Grundmeier says. "If nurses don't approve of a new solution, it will not work."

Customer details

Kliniken Essen-Mitte
Emergency department
Germany

Contact: Dr. Andreas Grundmeier, MD - Head of Emergency Dept., Intensive Care Unit and Emergency Management

No. of hospital beds: 696

No. of patients admitted each year: 16,000

Blood gas tests run: 15-20 per day

Immunoassay tests run: 3-5 per day

Analyzers: ABL837 blood gas analyzer and AQT90 FLEX immunoassay analyzer

Service: Full service contract

Processes optimized:

- Reductions in turnaround time
- Increase in patient flow in the ED
- Decrease in overall costs

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