



Evy Connie Ottesen, chief technician in biochemistry department Hillerød Hospital

- » Fewer mistakes are made
- » Free up hands
- » Crucial that the samples arrive in a steady stream
- » Benefits the patients
- » Reduce the number of bed days
- » Optimize the response time

28.11.2014

RAPID TRANSPORT OF SAMPLES – the final piece in automating blood analysis

“In the Clinical Biochemistry Department, it’s critical that we provide results as fast as we can – especially to the ICU. That’s our mission”, says Ottesen. “The Tempus600 has been a good investment because it works so quickly – and because nothing else is transported in the pipeline. The system is dedicated exclusively to blood tests. You could say that the Tempus600 suits our mission to a T.”

Before the system was installed in the spring of 2012, the medical technicians at the hospital used a good deal of their valuable time getting samples from the ICU and bringing them to the lab themselves.

Today, most of the requests for analysis require results within an hour. Without the Tempus600, Ottesen believes it would have been necessary to hire extra porters to transport the samples in order to satisfy the requirements.

“When we have to provide analysis results within an hour”, she explains, “we are pressed the entire time. Sometimes an analysis can actually take 20 minutes or more. With centrifuging, that means half an hour is already used up. And then there’s all the processing time when the samples arrive, including decapping.”

Improved patient safety

The hospital installed the Tempus600 when an ultra-modern automation facility was being installed in the lab. The

performance specifications for the facility were being drawn up when Evy Ottesen read an article about a Tempus600 at Kolding Hospital in a journal for medical technicians.

It seemed natural to her that the Tempus600 would become an integrated part of the new automated facility at Hillerød. The resulting solution would mean that no one would handle a blood sample except the person who drew the sample and fed it into the pipeline.

“It improves patient safety when technicians and porters aren’t running around with samples in their hands and pockets”, says Ottesen. “Fewer mistakes are made when an automated system handles samples than when human beings do it. And even though it’s difficult to measure, I’m certain that the Tempus600 has freed up resources, so that our medical technicians can now devote more time to things like quality assurance.”

” The Tempus600 is a key reason for the success of the automation effort. Its system has helped to optimize response time – and that’s been the most important benefit of all.

She emphasizes the advantages of sending the samples in ordinary sample tubes, rather than having to pack and unpack them at each end. The tubes are placed in a special rack, and after a journey of a few seconds they end up in a tray in the lab, where they are automatically transferred onto a belt. Here a camera reads the bar codes on the samples, and then the tubes enter the analysis queue.



In the analytic facility, all the pre-analytic processes are automated – including registration, centrifuging, decapping and pipetting – as are the actual chemical, immunochemical and coagulation analyses.

A steady stream of samples

Based on a lean analysis, Hillerød Hospital decided to install two Tempus600 systems – one running from the ICU, where rapid treatment can often make a difference between life and death, and one from the multidisciplinary outpatient clinic, where many blood samples are drawn.

The latter system provides outpatients with improved flexibility, since the analysis time is independent of whether the sample is taken in the multidisciplinary clinic or in the outpatient clinic of the Clinical Biochemistry Department.

“It’s been crucial that the samples arrive in a steady stream”, Ottesen says. “The Tempus600 is a key reason for the success of the automation effort. Its system has helped to optimize response time – and that’s been the most important benefit of all.”

From intensive care, the samples are typically sent through the pipeline as soon as they have been drawn. Without a pipeline system, ICUs usually have to be content with waiting until they have several samples before delivering the samples on foot a couple of times an hour. That means not only waiting time, but also lengthier response times.

Every minute is critical

“Every minute counts in these situations”, Ottesen declares. “It’s critical for the analysis results to be delivered quickly, so that the doctors can proceed with the right treatment as soon as possible – which means that the patient can get well faster.”

Ottesen is convinced that the time saved with the Tempus600 is often significant for treatment, and hence for the number of bed days. Not because the system provides better conditions for the analytic work, but because it minimizes the time elapsed between sample-taking and analysis.

” Sometimes, the results are already available by the time the doctor first sees the patient

Continuous, rapid delivery of samples to the lab also means that samples can be drawn from acute patients in the order of the patients’ arrival. Previously, doctors sometimes had to stop and assess which cases were most urgent and should therefore jump to the front of the queue. That time is saved now too.

“The great advantage of the Tempus600 is speed”, Ottesen says in conclusion. “Nothing can beat that. And then it’s great that the system is so simple. There aren’t any junctions or bottlenecks – just a straight line from A to B. Period.”