



Erasmus Medical Center *Rotterdam, The Netherlands*

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The Erasmus Medical Center is the biggest university hospital in The Netherlands and is striving to become one of the best medical research institutes of the world. The laboratory is one of the largest in the country and as an academic center of excellence, it serves as a teaching site to educate doctors in the area.

The Erasmus Medical Center is specialized in many disciplines such as cardiology and bone marrow transplantation. Erasmus MC is one of the three liver transplantation centers in The Netherlands.

Since 1997 Roche and Erasmus MC have entered into a long term partnership which lasts to this day.

Erasmus MC is ranked one of the top ten best medical institutes in Europe

- Almost 12,000 employees with around 1,320 beds
- 5 – 6 million tests per year (Clinical Chemistry, Immunology and Hematology)



Quality, reliability, flexibility and speed – ingredients to complement an academic environment

The hospital is currently in the process of a major relocation to a brand new site, the laboratory just recently moved into the new building. The opportunity to redesign their processes was optimal and after a rigorous tendering process the **cobas** 8100, **cobas** 8000, **cobas** 6000, **cobas p** 612 and **cobas p** 701 instruments were chosen to run at the heart of this high volume laboratory.

The features of the **cobas** family that made it stand out from the rest were quality, reliability, flexibility and speed.



Migrating from manual systems – habits worth breaking

Robert de Jonge is a clinical chemist with routine responsibility for the lab and is the acting deputy head of the department a.i.. He has been closely involved throughout both the tendering and installation processes thus he has a clear view about the advances that choosing **cobas** 8100 has made to the daily life of the laboratory.

One of the major challenges was to persuade the staff that, although an individual manual process could be completed faster than with automation, this didn't take into account the inevitable diversions such as telephone calls, visits to the restrooms, etc. Also, automation means that you can be doing something else while a basic process is underway. Moreover, automating manual processes will contribute to smaller standard deviations.



Physically going to the cold room to look for individual tubes for whatever reason was instinctive to many of them – but they had to be reminded “no, don’t look for the tube, it will come out automatically”.

Predictable turn around time

It is an example of improving the standard deviations, which are usually high with manual systems. A tighter standard deviation means greater predictability of results. Robert remarks:

“I would rather be really predictable with a 1 hour average turn around time than not predictable with 45 minutes or an hour”



Another area of automation that has taken some technicians time to adjust to, is the sample storage and retrieval. Physically going to the cold room to look for individual tubes for whatever reason was instinctive to many of them – but they had to be reminded **“no, don’t look for the tube, it will come out automatically”**.

Now there is no requirement to physically see and handle individual tubes, as **cobas** 8100 takes care of all of it. All of this has resulted in extra speed throughout the laboratory which can now handle up to 1,100 samples per hour.

Long-term relationships – the importance of partnership

The tender for the new laboratory was an open process, and although the Erasmus MC and Roche have been working together since 1997, there were no assumptions made about Roche’s suitability for the project.

“We looked at everything: we looked at other systems and listed all our requirements and it was Roche that met our needs most accurately.”

Of course the final decision was then made easier because the Erasmus MC had such a strong previous working relationship with Roche: more of a partnership than a traditional commercial arrangement between customer and supplier.



Smooth installation and comprehensive support – making “change” easy

Laboratory technicians require precision and that extends to the routines of their daily tasks, so change can sometimes be difficult. The process of tendering goes beyond the scope of simply providing machines and now covers the complete relationship of the staff in their new environment. The Erasmus MC was looking for a partner that could help the laboratory to plan and implement these changes, to train the staff and generally keep the project on track. Having chosen Roche, it was reassuring for Robert to see how smoothly the installation proceeded.



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Intelligent sample handling capability – a key element of efficiency

An important requirement of the new system was to have a single point of entry for every sample entering the laboratory, so that demanded an intelligent and integrated sample sorting system. The pre-analytical **cobas p 612** is an instrument designed to achieve these requirements. Every sample enters the system via the **cobas p 612** and is designated where and when the sample should be processed. In this way, emergency samples that require results in an hour are fast tracked into the system and other samples that may need aliquoting for microbiology or virology are sent in the appropriate direction.



By doing so, the **cobas p 612** can be used as a central and single point of entry for not only the central laboratory, but also for all connected laboratories.

The Erasmus MC calls this their 'laboratory triage system' and the end result is a smooth flow of samples through the laboratory. The **cobas 8100** four-lane, bi-directional sample track feature makes a great contribution to this by bringing real speed to the sample-handling process.



The integrated post-analytical system **cobas p 701** allows easy retrieval of samples throughout the day, e.g. for add on testing.

“The whole track and trace system is fantastic. Thanks to the cobas p 701 we no longer have to write a retest on paper and go to the fridge. It’s all automated.”

Quality and reliability – building trust, saving time, saving money

The real benefits of our cobas solutions became clear to Robert de Jonge when he had feedback from the physicians at the Erasmus MC. It was then that he realised the direct link between the laboratory output capabilities and high quality patient care. Doctors advise him and his team that confusion is the enemy of excellent patient care. If there is an unclear result, the patient has to remain in hospital while the situation is resolved. However, if everyone is confident that the right result was initially supplied, both time and money are saved by avoiding re-testing and allowing patients to be discharged sooner after treatment.

The reliability of the whole integrated system is critical for an academic institution like the Erasmus MC.

“If you want to build a reputation for predictability, then reliability is a key factor. You need systems that work, which are not malfunctioning or breaking down and can be running continuously. I’d rather have a really reliable, predictable system than a top speed system.”



“When you see Roche install the cobas 8100, it’s almost like plug-and-play. They have so much experience with it and this extends to the quality of the support we receive.”

Flexibility for the future – modular and scalable

When planning the move to the new building, an important factor for the Erasmus MC was the requirement to maximize their options for the future. They didn't want to be tied into a system that couldn't cope with their expected growth. The modular nature of the cobas solutions ensures that the laboratory can easily expand, in a controlled way, over time.

A good example of this is the anticipated addition of a bulk loader. Robert explains the concept:



“The idea is that the tubes are delivered in a basket and they are emptied in to the bulk loader. From there you only have a simple manual step between the cobas p 612 and the cobas 8100.”



A further example is the Add On Buffer in the **cobas** 8100, which provides flexibility of sample storage. Samples can be stored here for approximately three hours, maybe from the emergency or intensive care ward, which enables any further add-on tests to be processed immediately. Alternatively, samples can be stored in the **cobas** p 701 for much longer. In the Erasmus MC lab this storage period is for four days.

A plan for growth

Robert believes that the partnership between the Erasmus MC and Roche will continue to prosper and he's optimistic for the upcoming phases of the hospital relocation. He is confident that whatever challenges this could bring, Roche will be there to help him and his team overcome them.



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