



HPLC set-up with system layout (flat screen). On the left, a Waters Micromass 996 with Photo Diode Array detection.

Janssen Pharmaceuticals outsources central management of 17,000 lab instruments

COMPREHENSIVE MAINTENANCE

contract reduces scientists' workload

Els van den Brink, Images: FOODnote

Janssen Pharmaceuticals Beerse, a J&J subsidiary, has outsourced the maintenance of all its lab equipment. The decision has big advantages; the equipment's maintenance status is clear, maintenance is more efficient, up-time is increased and costs are lower thanks to economies of scale with existing suppliers. But above all, outsourcing reduces the administrative workload for lab managers and analysts.

Not only has Beerse maintenance been outsourced, but also equipment from the Janssen-labs in Geel (raw materials production) and Merksem (clinical facility). After eighteen months and proven success, J&J is rolling this approach out to other European sites. In Belgium, 17,000 lab instruments are centrally managed – 14,000 of them in Beerse. Outsourcing doesn't just relieve the lab managers of a task, but also provides them with a complete overview of their equipment maintenance strategy so they can manage their equipment based on Key Performance

Indicators (KPIs). Scientists can call on a dedicated team of qualified engineers onsite who address acute problems affecting critical equipment.

KPIs

At Janssen, Senior Manager of Laboratory Services Jan Van Deun coordinates PerkinElmer's OneSource Laboratory Services-team. About 30-strong, they work solely for the Beerse, Geel and Merksem sites. Outsourcing maintenance has had a positive effect, Van Deun says. "All maintenance has been standardized, both in our GxP-critical and non-critical lab environments. The status of the equipment is completely transparent." He points out a dashboard on his tablet that enables him to view all the parameters. Things

"Maintenance has been standardized, both in the GxP-critical and non-critical lab environments"

have improved a lot since 2014, when this information was not centralized, but scattered across the various buildings and units on the site. There was no central database. "Every site managed their own supplier relations. Everyone worked in their own silo, there were no joint contract negotiations. It was 'every lab for itself', there was a total lack of standardization."

For obvious reasons, there were also no equipment performance indicators, Van Deun recalls. "To reduce maintenance costs, you need to centralize contract management as well as technical know-how and practices. You need to know the cost-effectiveness of all your equipment, high-end and low-end. Otherwise you can't make decisions based on KPIs and efficiencies of scale. In that respect, we've taken giant steps with our partner OneSource PerkinElmer."

Back to science

Efficiency and cost reduction were not the operation's primary goal, however. The main objective was to reduce the scientists' workload at the various labs. The less time they spend on maintenance, the more they have for pharmaceutical research. "It's important to ensure that our scientists can focus on their core activities. 'Scientists back to science' was our main reason for centralizing maintenance. We reasoned that there had to be a way for facility management to centrally serve the various business partners' labs. For our three entities 'Pharma', 'Consumer' and 'Medical Devices', that is. We were looking for the same approach for all three environments so we could offer all three the same quality. Standardization reduces costs and fits in with J&J's global approach."

Pilot study

The 14,000 instruments in Beerse are housed in 12 buildings. Valued at half a billion euros, this equipment costs 10 million euro a year in maintenance, Van Deun says. Centralizing the maintenance of so much equipment is a major effort, so it was done in phases. The first labs to convert to the new system were in non-regulated environments, like the R&D labs. "We started in a non-GxP environment and ran a pilot study. When we saw it worked well in early development, we started introducing it in other environments, such as Supply Chain and QC."

It took two years to get the system completely up and running. Not everyone welcomed the changes. Van Deun estimates that initially only 40% of the employees were in favor. "Some wanted to keep maintenance-related knowledge in house. Centralization means inserting another link between the end users in the lab and the equipment suppliers. Some people were afraid client relations would suffer." However, the initial skepticism has vanished, Van Deun says. "We offer lab owners transparency about the status of their equipment, the cost of maintenance and the party responsible for maintenance. In GxP environments, they can now supply the specific performance indicators right away and show that maintenance is compliant with the guidelines. Better yet, local GxP reports are translatable to the global level: the lab manager, who is usually responsible for several labs in different parts of the globe, can share the maintenance KPIs with other sites and quantify the maintenance costs across all sites."

Evolution

The maintenance team in Beerse consists of 18 people, including PerkinElmer's engineers and specialists from preferred suppliers. Additional partnerships with subcontractors ensure optimum service to the end users. The engineers are not only tech-savvy, but have also been trained in social skills so they

BENEFITS OF CENTRALIZED MAINTENANCE

- ▶ Financial and physical transparency in maintenance
- ▶ Quick and efficient response to issues by on-site service team
- ▶ Problems are solved in hours rather than days
- ▶ Guaranteed up-time, specified in service level agreement
- ▶ Management decisions can be based on equipment cost and optimization of maintenance strategy
- ▶ Economies of scale means lower prices
- ▶ More than just maintenance: includes hiring subcontractors and facilitates compliance.



Michel Carpentier, Senior Associate Scientist at Lead Discovery & Discovery Sciences (Beers Analytical Sciences Group) is putting samples in the Waters Acquity UPLC.



Every piece of equipment has a barcode for inventory management and is integrated into the facility management system.

can truly support the scientific researchers. “That’s really been an evolution,” Van Deun says. “In our service team, you need to be more than a frontline engineer. You need to be able to think ahead, technically speaking. So, you can’t just be good at the level of hoses and valves. You need to be able to put yourself in the researcher’s shoes and do what’s necessary to get the equipment working on time or to collect data from the IT data lakes. In the end, it’s all about making sure the scientists can do their work and focus solely on that process.”

The engineers regularly receive additional training. There are many liquid chromatographs and mass spectrometers in the labs, but scales or a synthesizer may also need repair.

“PerkinElmer also trains its people in non-core competences, for example Mettler applications. They need to continually expand their service level. That is absolutely essential, because the researchers themselves know less and less about the equipment. They depend on the preferred partners that support them.”

Comprehensive

The maintenance requirements are specified in performance contracts. The master service level agreement specifies the service a preferred supplier has to provide. “In case of business-critical failures they need to respond within 4 hours and come up with a solution within 8 hours. In non-critical failures, that response time is longer and a solution can take a few business days. If they fail to solve the problem in the set time-frame, the OEM [Original Equipment Manufacturer] is called in. J&J has a comprehensive contract with PerkinElmer. Dashboards and KPIs allow us to maintain oversight and provide us with transparent accountancy. It shows all financial transactions PE makes on behalf of J&J.”

RFID tags

To centralize maintenance, an accurate inventory of all equipment is needed. Every technical aspect must be correctly represented and each instrument must be tagged with a unique identifier, traditionally a barcode. Ideally, they should each get an RFID tag. This enables identification by radio waves, so a piece

of equipment can be detected from a distance. Maintenance of equipment – or asset maintenance, in the industry – relies heavily on precise identification, Van Deun explains. In the Lion Project, a huge construction project intended to integrate several older labs into one new building, all materials and equipment are RFID tagged before the move. “RFID is a great technology to invest in, because it saves so much work when you’re doing inventory. If the equipment is not RFID-tagged you need to inspect each instrument separately and check the barcode. An RFID scanner streamlines this process. You have total control during the moving process.”

RFID can help to optimize equipment management. “You can only control costs when you know what assets you’re talking about. RFID makes it easy to deduplicate excess equipment when you merge labs. That’s real synergy. And when there’s a piece of equipment in reserve, or one that constantly fails, or is no longer in use, you can simply discontinue the service contract. Manual inventory management is very time-consuming. Especially these days, with all that mobile equipment, you soon find yourself running around in circles. An RFID tag automatically informs managers of the whereabouts of their assets.”

Funneling

Jan Van Deun recently visited the Janssen location in Cork, Ireland, where the new maintenance concept will be implemented in the next 12 months. Next in line is Janssen Biologics in Leiden, the Netherlands. “This project is now going European,” Van Deun says, “and actually, it’s going global as well, in North America. We’ve noticed that this approach funnels maintenance. Efficiency increases when various parties schedule their maintenance work so it coincides. This minimizes equipment downtime. In the past, an engineer would come to fix a leak, say. Then later someone else would come to calibrate it. And then, weeks later, someone would show up to validate this. Equipment could easily be out of the running for a month, while the actual work took less than a day. For the lab employees, maintenance was difficult to organize. In terms of efficiency, cost reduction and minimization of downtime, this is no longer sustainable. Hence our decision to outsource and centralize our asset maintenance.” 



Facility Manager Jan Van Deun riding a ‘blue bike’ that Beerse employees use to quickly get from one place to another at the huge site.