

Case study



Overview

Nuffield Health is the largest not-for-profit healthcare provider in the United Kingdom. Established in 1957 the charity operates 31 Nuffield Health Hospitals. Its objectives are to advance, promote and maintain health and healthcare of all descriptions and to prevent, relieve and cure sickness and ill health of any kind, all for the public benefit. In order to fully comply with regulatory compliance and to provide the ultimate levels in continuity of service, Nuffield Hospitals Pathology Laboratories and Pharmacy departments are required to fully monitor their cold chain storage and processes.



Guaranteed Compliance with MHRA, UKAS, HTA and FDA CFR 21 part 11



Automated and secure record keeping accessible by all stakeholders



Improved reporting of potential non-compliances and reduced inventory risk



Remote monitoring and escalation through real people delivers maximum inventory protection

**Steve Rickard,
Operations Lead
Pathology**

“We had a large number of manual probes across the estate which relied on manually recording of results.

The ability to have 24/7/365 hour monitoring with no manual recording was a huge driver for us.”



It was important for Nuffield to have a reliable temperature monitoring system backed by an ongoing maintenance and ISO17025 calibration service to reduce individual site costs and provide uniformity in their approach to reporting and managing cold chain failures. Axon was perfectly placed for this project, with a wealth of experience and track record in data gathering, analysis, and remote alarming from monitored hardware, and was chosen as the sole provider of these services to Nuffield Hospitals.

Tutela hardware (Axon's bespoke scientific monitoring sister brand) was introduced into all 31 sites across the United Kingdom as it delivered greater functionality and integration at a cost that met their budget parameters. The Axon system now monitors, alarms and reports on 1,278 probes across the entire Nuffield Hospitals estate. The system monitors all Pharmacy and Pathology departments and all medical Laboratory disciplines including Category 3 containment.

The key decision-making factors were ;

- 24-hour 365 day a year alarm call centre (manned telephone, text and email)
- Remote support and diagnostics capability
- User-friendly web interface with intuitive remote system control
- Multi-site data collection to a single user interface (global capability)
- Alarm dashboard functionality
- Ultimate flexibility in the setup of the alarm notification with targeted and specific delivery

The powerful data gathering and manipulation tools developed by Axon drive intuitive web-based interfaces allows Nuffield to gain access to, review and download their monitoring data for each unit, room, department and across the whole estate, in real time.

The Axon platform meets the highest level of record security for its customers being fully compliant with FDA CFR 21 part 11 and allows comprehensive access to data at anytime, anywhere through the use of any device able to support a web browser.



Estate-wide Project Delivery and Roll-out

The Nuffield project covered a property estate of 31 Hospital locations across the United Kingdom. The installation, ISO17025 calibration, commissioning and OQ validation was carried out by the Axon project team and training to 300 key staff was conducted for each site by an in-house specialist.

The site schedule detailed the complete system specification plan containing all the information needed by the project team and were supported by annotated floor plans for each site and photographs of the site locations where appropriate. The project delivery team followed an evolved and proven quality process to deliver all site installation works efficiently and accurately. The whole process is controlled under ISO9001:2015 QMS.

The Benefits of IP and Ethernet based Monitoring Solutions

The Tutela hardware was delivered to sites pre-configured to minimise disruption to the Nuffield departments during the installation phase. Being IP based, installation required minimal involvement of IT resources and the dedicated Axon IT technical specialists managed the process in partnership with Nuffield IT projects teams.

The monitoring hardware is connected to the Axon servers via dedicated, secure IPSEC to IPSEC VPN tunnels where temperature data and alarm data traffic is transferred. The two-way communications mean that Axon can remotely administer requested alterations and run diagnostics where necessary. It also means that Nuffield have complete control of their data and highly sophisticated functionality (isolating alarms, changing alarm call details, SMS lists, altering setpoint parameters, applying user comments to the alarm audit trails etc.)

Because all data collected is fed to a single source server within the Axon data centre, the display of data back to Nuffield Health can be tailored and presented in any format. This complies with both the global management needs originally specified as well as individual operational units requirements, all accessed through one suite of web based interfaces.



Managing Big Data Securely

Currently Axon manage and service data from 1,278 probes across all Nuffield sites. The data harvested from the Tutela hardware is backed up on the Axon servers (with off-site mirrors in separate geographic locations) for up to 30 years.

Data management is underpinned by a ISO9001:2015 management system and ISO27001 secure data centre processes. This functionality is paramount to the ongoing operation of Nuffield Health's Pharmacy and Pathology Laboratory practices with back up and disaster recovery built in and considered at every stage.

Axon Empowers Performance Benchmarking

The wealth of accurate data continually harvested, processed and analysed by the Axon system from the Nuffield estate allows precision benchmarking at a variety of levels of granularity – fridge supplier, model, department and location. Only this level of granularity can empower a truly preventative maintenance programme, where potential failures are predicted and acted upon, before they incur product loss and cost or elicit non-compliance. The addition of automated heat mapping within each fridge is currently under test and expected to be deployed soon.



Delivering Compliance & Financial Security

The monitoring system delivers 100% compliance with the strict regulatory requirements regarding continuous monitoring in the laboratory.

Both Laboratory and QA teams have adapted easily to the web based interface, and are delighted that they can also remotely log in and view alarms and corrective actions with full traceability at any time. This has enabled prompter reporting of non-conformances from the laboratory team, improving efficiency and compliance. In addition, the reliability and stability of the monitoring system from Axon has generated greater confidence within the laboratory team, that optimum environmental conditions are maintained for their inventory.

Driving Analytics and Stakeholder Visualisations

Instead of harvesting data and having it analysed by the provider and presented as a report and/or spreadsheet, Axon have developed a suite of web based dashboards that allow managers, at a wide variety of function and seniority, to view performance at multiple levels in real time.

These performance dashboards show the estate performance in real time including case availability, environmental conditions, energy profiles and key specialist contractor performance. The platform empowers JLP management with the most detailed profile of the retail environment ever seen.