



Milton Keynes University Hospital

NHS Foundation Trust



NHS trust for UK's fastest growing town enhances data capabilities with Adatis

Milton Keynes University Hospital has implemented Microsoft Azure data and analytics tools in partnership with Adatis. The data modernisation project has replaced a set of ageing data tools that were about to reach the end of life. In addition, Milton Keynes University Hospital can now support mobile data access and prepare the NHS trust for next-generation data technologies the organisation plans to adopt.

Situation.

Milton Keynes University Hospital NHS Trust is an acute hospital in the UK's fastest-growing town, providing both in- and out-patient care, accident & emergency, as well as specialist cancer and children's treatments. "We have over 500 acute beds and have grown from a district general hospital 40 years ago to a teaching hospital," says Aniruddha Dwarakanath, Head of Information and one of the main leaders of the data modernisation project alongside Hitesh Patel, Associate Director of Performance & Information. Their department of data analysts and developers ensure that internal stakeholders have the data they need to run the NHS trust and meet clinical demands. The department also has the responsibility to deliver reports on waiting times to NHS England. "Data plays a very important role at the trust, and our senior leadership is very data-focused," Patel says.

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Aniruddha Dwarakanath, Head of Information

The data analytics applications and infrastructure at Milton Keynes University Hospital had to be updated to meet changing demands from a highly data literate staff and to safely move the trust out of a set of ageing applications and infrastructure. The modernisation would reduce costs

and improve reporting. "The world is changing, and there is a need to have data fed to mobile end-user devices so that our colleagues can make use of the data we have as a trust. Before, we were collecting a lot of data, but we were not using it effectively," Dwarakanath says of the modern ways of working that have been adopted by clinicians.

In terms of moving Milton Keynes University Hospital away from legacy technologies, Dwarakanath says the Microsoft SQL Server and analytics tools had been in use for 15 years. "The support was being phased out, so there was a need to enhance the data capabilities, especially as the data reporting looked a bit dated.

"There was a degree of risk, as the extended support for Microsoft SQL Server came to an end in July 2019. In addition, moving to the cloud meant we could spread the cost. The cost of remaining with on-premises computing meant there would be a huge initial cost and then this technology would be outdated in three to four years time," Dwarakanath says; adding that remaining with an on-premise technology stack meant that Milton Keynes University Hospital would struggle to adopt the data technologies such as artificial intelligence (AI) and machine learning (ML). "There is an appetite in the organisation to use advanced analytics to benefit the patient outcomes."

Approach.

Milton Keynes University hospital has standardised its technology stack as part of a trust wide modernisation. "One of the main drivers for us was the ability to integrate with Office365 and Microsoft Teams," Dwarakanath says of the decision to use Microsoft Azure and PowerBI.

Adatis, a Microsoft Gold partner in data and analytics, was selected to develop and deliver Microsoft Azure data and analytics tools at the trust. Adatis ran an initial discovery phase to help Milton Keynes University Hospital decide how it would achieve its new data operating model and PowerBI reports. "We had a vision of what we wanted, but we had not worked out how to achieve that in a systematic way, and the discovery divided the project into manageable phases," Dwarakanath says. From the discovery, Adatis and Milton Keynes University Hospital began phase one, the deployment of the Microsoft Azure infrastructure; phase two involved developing the foundations of the reporting that Dwarakanath's department would deliver, and the third phase focused on the analytics.

"The infrastructure phase involved building the server subscriptions, virtual private networks (VPN), the data lake, Databricks and the data framework for loading the data across from the SQL servers," he says. In phase two, the data migration took place, moving the information from the legacy SQL Server platform and finally, the Microsoft PowerBI reports were developed. Dwarakanath describes the translation of business knowledge to the new Azure technology and the data migrations as the two most challenging areas of the project.

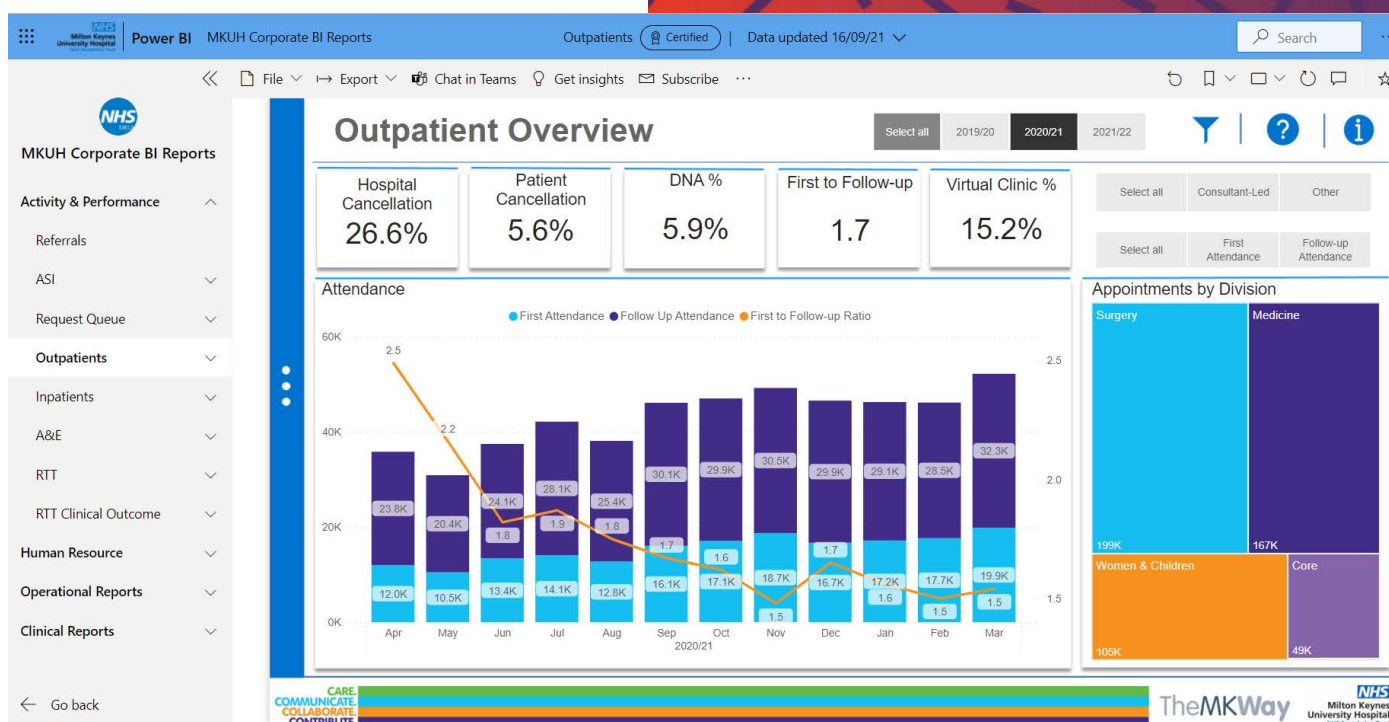


"Skills development was one of the most crucial parts of the project, and we asked Adatis to work in a very collaborative way. And that worked really well and helped us, as we now have the confidence to maintain the product for the future," Dwarakanath says. This collaborative way of working was not face-to-face; due to the Coronavirus pandemic, Adatis delivered the entire project remotely. "There was no choice about the remote working, but it worked really well, and there were no issues," Dwarakanath says of the second phase of the project that began in January 2021, as the UK went back into lockdown and was concluded in May 2021 following eight sprints of two weeks. This timing was crucial to Milton Keynes University Hospital to meet budgeting demands.



Outcome.

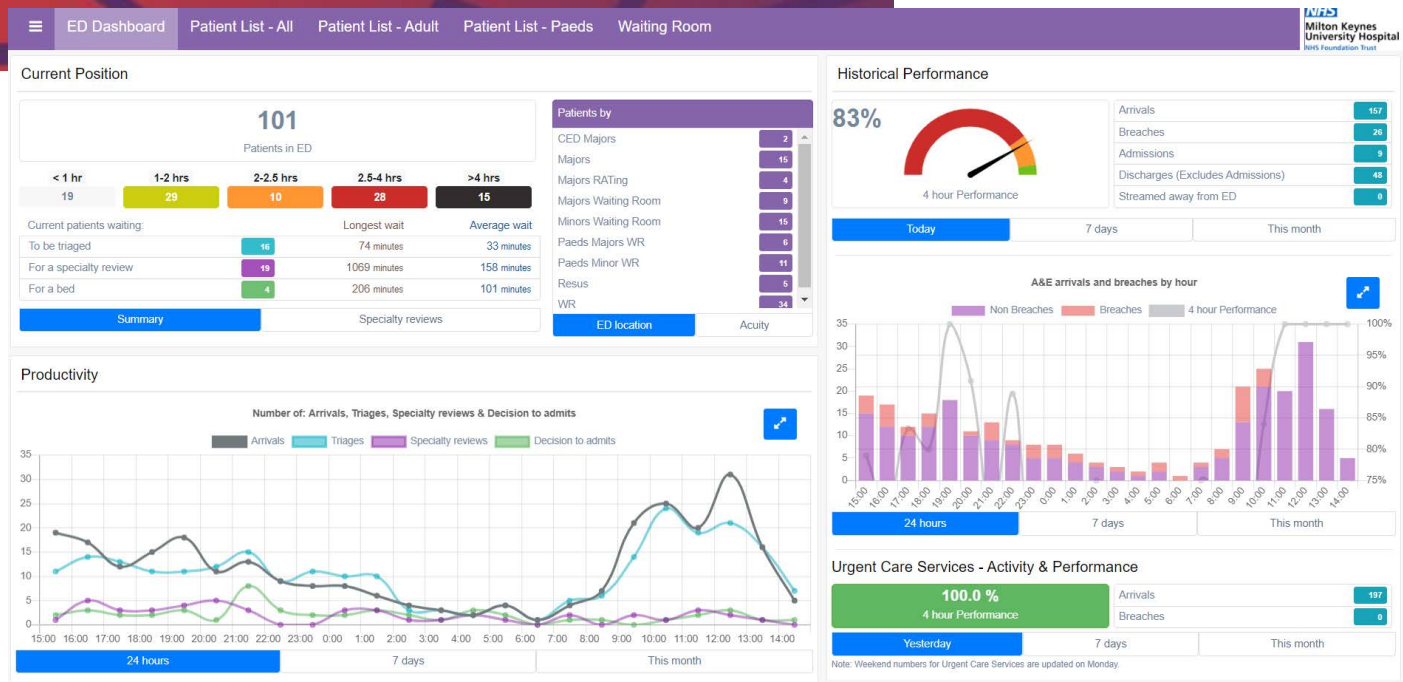
Following the eight sprints completed by Adatis, Milton Keynes University Hospital has a Microsoft Azure data warehouse architecture that includes Microsoft data lake, data warehouse, Data Bricks, Azure Web Apps and Azure Synapse Analytics services. This technology is the basis for corporate reports at Milton Keynes University Hospital. Corporate Reports form 80% of the information that Dwarakanath's team has to deliver to the trust and stakeholders, like NHS England. As a result, Microsoft PowerBI provide reports on A&E arrivals, patient referrals, outpatients appointments, inpatient admissions, RTT waiting times, HR information and more. Dwarakanath says: "PowerBI is a one-stop-shop for all reporting."



PowerBI Dashboard Showing Outpatient Overview

Dwarakanath says greater levels of data are being exposed via Microsoft PowerBI to end-users across the NHS trust and the ability to drill down into that information to an individual patient level. "To deliver these reports with speed and accuracy meant we needed one form of the truth and the new data warehouse provides that," Dwarakanath says.

Milton Keynes University Hospital is also able to deliver live reporting now. Live reporting is helping the trust manage staffing numbers more effectively in critical departments like A&E. This benefits both the clinical staff and, most importantly, the patient. "We have achieved this by combining multiple technologies and an integration into our patient records system," he says.



Live Emergency Department Dashboard



"Working in an Agile way was really important to break the work down and keep a focus on the whole project," Dwarakanath says of the adoption of Agile working methods in partnership with Adatis. Feedback throughout the project meant any necessary changes were made before project completion. Dwarakanath says: "A partner like Adatis helps you visualise a project, break it down to smaller tasks and focus on the delivery."

About Adatis.

Adatis are a leading Microsoft- specialist Data Analytics and Business Intelligence consultancy. We work in flexible, agile and collaborative ways to help organisations unlock the power and value from their data to enable them to improve business performance, better serve and engage customers, empower employees, find efficiencies, and remain compliant. Adatis are 120+ people across the UK, Bulgaria and India. We bring innovation and insight to

our enviable customer base across various sectors, including retail, travel & transport, public sector, insurance, education and many more.

Adatis offer professional services specialising in data analytics, from data management strategy and consultancy through to world class delivery and managed services.

With offices In London, Farnham an Sofia they have been delivering innovative and successful solutions for clients since 2006.



Data Science



Data as a Service



Modern Data Warehouse



Data Architecture



Data Analytics



Data Strategy

**We love helping people
unlock the power and value
of their data.**

If you are interested in finding out more please contact us on **+44 (0)1252 267 777** or via email at **enquiries@adatis.co.uk**

You can also check out our website at **www.adatis.co.uk** or come and see us at numerous global conferences and speaking events.