

ILUX helps renal services provider Diaverum to transform patient care across 20 NHS clinics with integrated systems, interoperability and secure data sharing

Diaverum is one of the world's leading providers of renal care and the largest independent service provider in Europe. Its operations currently span 20 countries around the world and serves a patient base of more than 29,000 people. In 2007, Diaverum launched its UK operation in partnership with NHS England and currently provides care to over 1,500 patients in 20 clinics across the country.

The challenge

To deliver seamless patient care and accurate, timely data to clinicians, dialysis services are increasingly reliant on technology and integrated systems. Back in 2007, Diaverum was embarking on the launch of its first satellite renal clinics for the NHS.

Diaverum was seeking to improve the incumbent technology and system processes, which were often beset with paper processes and system failures. "We are reliant on IT and technology," said Michael Hartnett, Managing Director of Diaverum, "there's a large amount of data generated for each renal patient and it has to be with a wide variety of people in a timely way, in terms of ensuring the safety and effective treatment of patients."



Key benefits

- **Holistic view of patient data** – timely, effective clinical pathways and interventions
- **Improved patient care** – reduction in administration, allowing more time at bedside
- **Secure data transfer for analysis** – enabling overnight batch transfers to NHS and Diaverum
- **Reduced IT costs** – from high-performing IT, applications and data integrations

System components

- iSYMED Dialysis systems
- HP ProLiant servers
- Lenovo desktops
- Draytek routers
- Cisco switches, routers and Wi-Fi access points
- HP switches
- 3CX VoIP system
- Yealink VoIP handsets

Fundamental to success was improving the patient experience. Dialysis can be a tedious experience for patients, with dialysis often being required 3 times a week and each session lasting 4 hours. Diaverum was keen to advance the delivery of its renal services, with improvements being targeted not only to its dialysis machines and IT systems, but also to its ancillary services to improve the patient experience, such as the provisioning of free patient Wi-Fi and TVs, and educational information via the use of digital signage in waiting rooms.

For its clinicians, there were a number of areas requiring improvement. Key among these was the need to reduce paper processes, enable more time at the bedside, and importantly, facilitate the safe, secure transfer of patient data – from each Diaverum renal unit to each parent trust’s renal management system, NHS Labs pathology, UK Renal Registry and to its patient mobile app.

The solution

ILUX began its involvement by meeting with senior stakeholders from each part of the clinic’s operation; these included Diaverum management, NHS consultants and clinic managers. “I was impressed with ILUX’s vision on how they could help us meet our strategic challenges,” said Michael Hartnett. These initial conversations enabled ILUX to identify the issues and bottlenecks in the current system and pinpoint where improvements needed to be targeted.

“We pride ourselves on getting to know our customer’s challenges inside and out,” said James Tilbury, Managing Director of ILUX. “By carrying out a full audit of the current systems and understanding all of the clinical processes and their data requirements, we could start to build a strategy that had integration and interoperability at the heart of it.”

From this research, it became clear that the current systems were not fit for purpose and were becoming so detrimental that it was more beneficial to cease their use and start planning for a completely re-engineered solution.

To commence the system redesign, ILUX began capturing the required data flows and appointed

an interoperability resource to facilitate a closer working relationship with NHS and Renal Registry IT teams. The data flows were mapped across all required applications and infrastructure, formulating an export schedule. Crucially the re-engineered data flows would enable the clinic’s consultants to gain real-time visibility of patient dialysis data – something that had not been achieved previously. Additionally, it also enabled a nightly batch process to be run which relayed the clinic’s data in encrypted form to the trust’s renal management system and a standardised data set of key attributes to the Renal Registry.

Rachel Hucknall, Operations Director summarised: “There are understandably lots of concerns over data sharing within the NHS and confidentiality of data, and ILUX have managed to deal with all of that in a very safe and secure way.”

The next step on the clinic’s transformation was the modernisation and integration of the medical devices and IT hardware. These included a new patient smart card system which stores the patient’s prescription and is used with the digital patient weighing scales and iSYMED dialysis systems, transferring pre-programmed patient dialysis details and treatment settings.

In parallel, all servers, desktops, and IT infrastructure were replaced, with free Wi-Fi being installed for patients. To provision for business continuity and disaster recovery, ILUX’s XVault cloud-backup and recovery service was deployed, enabling fast recovery in case of any system failures. Underpinning the new system, 24/7 IT support was also put in place, providing the clinics with a fully dedicated support team.

Rachel Hucknall, Diaverum Operations Director said: “The interoperability factor was particularly important. We work very closely with a number of NHS trusts. Some of the issues we had in the past related to IT systems not talking to each another. One of the areas ILUX has been fantastic at is that integration between our systems and NHS systems.”

The final milestone was the realisation of live connections. This development enabled all of the clinic’s consultants to gain access to the NHS trust’s systems via Diaverum’s hardware, allowing remote access to the N3 network and their applications.

The outcome

By undertaking the IT service redesigns recommended and implemented by ILUX, Diaverum has dramatically improved its renal services across its clinics. For patients, this has resulted in improved care and experience – enabling treatment to be more personalised and time spent in the clinic more enjoyable, with access to free Wi-Fi to keep in touch with loved ones, do work, and use services such as online shopping and movie watching.

Diaverum's Operations Director, Rachel Hucknall said: "ILUX have helped us improve the patient experience in three ways: with digital signage in waiting rooms, having free TVs available for every patient, and free patient Wi-Fi. The IT provision that we have in Diaverum is a real 'wow' factor for the patients and it's really enhanced their experience."

For clinicians, the benefits have brought less errors through the reduction of paperwork and manual data entry, more time at the bedside to treat patients, and access to a wider range

of data, providing a holistic view to make interventions where necessary. Liz Simpson, Clinic Manager at Diaverum Redditch added: "Dialysis information that we create from a treatment is stored, transferred and sent safely to our parent hospital trust, meaning they've got it there and then. It creates a safer, more professional aspect to patient care."

The interoperability of systems and data integrations have enabled greater sharing of data between clinics, the NHS and renal registry – helping clinicians and kidney researchers alike to derive insights on the local and national picture and design even more effective treatments.

"ILUX has really helped us to gain a competitive advantage with our overall business strategy using technology," said Michael Hartnett. "Most of our clinics now have integrated systems, and the level of manual data entry our nurses have to perform has reduced significantly. We've gone from being seen as inadequate in certain areas of our technology to being best in class."



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Contact us on 01480 501500 or email us at info@ilux.co.uk to discuss your specific requirements.