CREATING A SUSTAINABLE MODEL FOR SMART DIGITAL HEALTH SYSTEMS

David Wyndham Lewis, Health and Life Science Partner at Atos, explores how smart digital health systems can create a sustainable model for future-ready healthcare

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On an average day, estimates show the NHS manages more than 1.3 million GP appointments, 304,000 outpatient appointments, 35,000 emergency calls, 46,000 A&E appointments and 288,000 community healthcare visits.

These astounding figures are likely to continue increasing with shifts in both cumulative care needs and demographics. Given the sheer volume of patients seen by the health service each day, productivity is fundamental to ensure that every patient can continue to receive the care and attention needed.

Introducing smart digital health systems

To tackle rising pressure on healthcare services, many providers are focusing attention on integrating digital health systems into their operations, enabling them to provide care more effectively and efficiently. This entails understanding a patient's care across multiple providers, far beyond the hospital setting. Undoubtedly, patient care is greatly improved when healthcare services are integrated across hospitals, primary care and community care.

By improving the end-to-end patient flow of information, patients will be triaged more effectively, seen faster, with conditions caught earlier and treated correctly.

For example, by ensuring every person is in the right tier of care at the right time, smart digital health systems minimise the need for patients to be transferred into acute care. For those that need acute care, these systems improve the efficacy, productivity and efficiency of the care provided, so they can be transferred back into independent living as early as possible.

While the deployment of smart digital health systems can be accelerated by investing in building entirely new smart hospitals, these smart technologies can also be retrofitted to improve existing hospital estates.

The blueprint for digitally enhanced hospitals

Atos, with its ecosystem of specialist partners, has developed a portfolio of circa 50 interoperable health-specialised technologies and services that can be seamlessly integrated across a healthcare system, creating a cumulative benefit to operational efficiency, patient flow, clinical safety and patient outcomes. Whilst this could feel like a daunting number, these broadly sit across three key and complementary areas:

- The technology that sits behind the walls of the hospital building provides personalised experiences to staff, patients and carers. This includes technologies like fibre optic and cellular networks, asset and location tracking, autonomous mobile robots, and intelligent energy systems.

- The technology that deals with interactions between the hospital building and the broader digital health system. This includes technologies like remote monitoring, telemedicine, digital front door and personal health records.

- The technology that improves the operating model within the hospital, including the design and operation of clinical pathways. This includes technologies like hospital operations, command and control centres, smart scheduling and rostering.

Although these technologies can be mixed and matched to suit each hospital's differing needs and existing infrastructure, their greatest value emerges when implemented together, as their collective impact drives transformation rather than simply introducing new methods of operation.

The National Health Service is uniquely placed to adopt these cohesive new ways of working and be the trailblazer for the digital health system movement.

The journey to better patient outcomes

While building an entirely new smart hospital is a significant investment and one that will take many years to complete, healthcare providers can, and should, start improving patient outcomes by implementing digital technologies early, where they can, and they do not fundamentally require the physical infrastructure of a new build.

Many of the smart digital health system technologies are focused on new ways of working, so it is important that these adjustments are embedded into organisational muscle memory before and while any physical upgrades are being made. This will also ensure that patient outcomes are improved as soon as possible.

When embarking on this smart digital health system journey, healthcare providers should focus their attention on the longitudinal transformation project that will most impact their staff and patients, focusing on the outcomes they want – such as improved outpatient flow – rather than on specific technologies.

To support healthcare providers along this path, Atos has created a Digital Health System Centre of Excellence (CoE), which is a collaboration between Atos, global digital partners and an ecosystem of 30+ SME healthcare-specific digital technology providers. The CoE enables healthcare companies to buy outcomes rather than individual technologies by providing the integration and interoperability required to ensure the technologies that make up a digital health system work together effectively.

Together with its partners, Atos works with healthcare organisations to map template architectures over their existing estate to determine where they need to invest and provides a template digital roadmap of what they need to implement to achieve their desired outcomes and in what order. These roadmaps prioritise technology that can provide gains across the whole workforce, such as combining smart scheduling, ambient listening and operational command centres to help drive team productivity and collaboration.

The future of patient outcomes

Healthcare providers can reach a solid baseline digital maturity by adopting each of these technologies, but this can be exceeded with the addition of AI and data analytics to unlock even greater improvement in efficiencies and patient outcomes. However, healthcare organisations and patients are rightly wary of their data being used to train and maintain AI models, and are cautious about where, geographically, their data is stored. Regulations like the GDPR are also still important, as the use of clinical data for treatment is one thing, but any secondary uses must be opted into.

Atos' enterprise architecture includes a secure data abstraction layer, which ensures any data that should be available for secondary use is securely available. It has been deliberately architected so it can be hosted either within the UK, meeting data sovereignty regulations, or within the organisation itself.

Smart digital health systems and smart hospitals will be revolutionary to the future of healthcare. They will not only help the industry overcome its productivity struggles but will also ensure that patient outcomes are dramatically improved without compromising data.

As a strategic integrator with significant global healthcare experience, Atos can facilitate this journey for healthcare organisations through a comprehensive ecosystem of technologies, partnerships and expertise gained from experience.

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