# NHS Staffordshire and Stoke-on-Trent ICB

**Client**
NHS Staffordshire and Stoke-on-Trent ICB

**Industry**
Healthcare

**Project**
Population health enablement

**Focus**
Interoperability, integration, engineering

**Success**
Increased interoperability and enabling population health management

**Background**

Staffordshire and Stoke-on-Trent Integrated Care Board (ICB) is dedicated to enhancing healthcare delivery across the region by fostering collaboration among healthcare providers, local authorities, and community organisations.

The ICB aims to ensure that residents receive high-quality, integrated care services tailored to their needs. By leveraging innovative digital solutions and data-driven approaches, the ICB addresses the unique health challenges of the community, promoting preventative care and improving health outcomes. The ICB's initiatives focus on creating a seamless patient experience, reducing health inequalities, and fostering a sustainable healthcare system that can adapt to the evolving needs of the population.

**The need**

Staffordshire and Stoke-on-Trent Integrated Care Board (ICB) required a technical partner to support their Population Health Management (PHM) initiative by developing a robust system for extracting and managing General Practitioner (GP) data from EMIS and SystmOne. The ICB's objective was to utilise this data to improve health outcomes and optimise care delivery across the region.

The partner needed to create a secure, efficient integration with the GP data systems, ensuring seamless data extraction and synchronisation with the ICB's PHM framework. This integration was crucial for maintaining up-to-date patient records and supporting data-driven decision-making within the healthcare ecosystem.

Key requirements included the ability to securely access and extract GP data, map this data to the ICB's existing PHM data models, and ensure compliance with relevant data protection and security standards. Additionally, the solution needed to be scalable and flexible to accommodate future expansions and adaptations as the ICB's PHM needs evolved.

The integration had to be decoupled from existing ICB software products, established as a standalone middleware API service. This approach would allow for easy and flexible integration into multiple ICB products and services, ensuring long-term sustainability and adaptability of the solution.

**The solution**

Staffordshire and Stoke-on-Trent Integrated Care Board (ICB) collaborated closely with 6B to develop and deploy a robust, scalable, and future-proof data extraction solution tailored to the needs of their Population Health Management (PHM) programme. The objective was to implement a solution that not only adhered to current regulatory standards and best practices but also provided the necessary adaptability to evolve alongside the healthcare landscape for years to come.

Drawing on our extensive experience working with a wide range of

healthcare organisations, 6B implemented a reliable, well-established primary care data extraction service. This solution was built upon proven methodologies and supported by a deep understanding of the unique challenges associated with handling sensitive patient data at scale.

The system was designed for rapid deployment across multiple GP practices. Installation was straightforward and efficient, requiring minimal disruption to ongoing clinical operations. The setup also included the configuration of GP practice reporting groups, which enabled streamlined data management and simplified extraction workflows for both present and future reporting needs.

To minimise any potential interference with day-to-day clinical activity, all data extraction processes were designs to be carried out outside of regular GP practice hours. This approach ensured zero impact on practice staff and patients, allowing for uninterrupted delivery of healthcare services while still facilitating timely access to critical data. The solution was engineered with security and compliance at its core. It followed industry-leading practices in data protection and information governance, fully aligned with internationally recognised standards such as ISO 27001, NHS Digital's Data Security and Protection Toolkit (DSPT), and Interface Mechanism 1 (IM1) policies. All extracted data was encrypted both at rest and in transit using advanced AES 256 encryption. Additionally, a robust two-way pseudonymisation process safeguarded patient identities throughout the data lifecycle.

**6B**

The service enabled the extraction of rich, detailed datasets, encompassing full patient records. This included demographics, clinical events, prescription histories, and complete medical backgrounds. To support ongoing analysis and insights, delta extractions were also conducted to capture and reflect any updates or changes to patient records. All data from SystmOne and EMIS systems was standardised and converted into a consistent HL7 FHIR format, facilitating interoperability and integration with downstream PHM systems.

An intuitive web-based application was provided to monitor onboarding progress across practices. The system included automated retry mechanisms and proactive notifications, helping administrators quickly identify and resolve any potential issues during setup.

After each data extraction, a rigorous validation and testing process was conducted to ensure that the extracted data met quality standards and compliance requirements. An online portal allowed stakeholders to track and manage the status of data corrections, new feature requests, and other support tickets, ensuring full transparency and accountability throughout the lifecycle of the project.

Through the implementation of this comprehensive, secure, and highly efficient data extraction solution, the ICB was empowered to manage and utilise sensitive patient information with confidence.

**The Impact**
The implementation of the data extraction solution by 6B is set to deliver significant benefits for the ICB. As the solution rolls out, it ensures real-time access to comprehensive GP data, enhancing the ICB's Population Health Management capabilities. The integration is improving the accuracy and efficiency of patient data management, leading to better-informed decision-making and optimised care delivery. The seamless, secure data extraction process minimises disruptions to GP practices while maintaining stringent data governance.

Ultimately, the extraction solution from 6B is set to transform healthcare delivery across the region, promoting preventative care and improving health outcomes for the local population.

Ready to get started with your project? Contact our Business Development Executive **Sarah Luther** today:

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