

Plymouth NHS ICT Shared Service



- *Improved patient services*
- *Reduced costs*
- *Increased productivity*

Plymouth NHS ICT Shared Service delivers cross-organisational benefits

Using integration for clinical care transformation

Plymouth NHS ICT Shared Service has established an industry-standards-based approach that integrates the IT for the cross-organisational care services that it supports. This has enabled its users to protect existing investments, streamline care processes, reduce costs and improve clinical outcomes.

“We recognised the importance of integration to support the transformation of clinical care pathways many years ago and have been working closely with InterSystems to develop a generic architecture upon which we can base the cross-organisational information systems that are required today,” says Andy Blofield, Director of Plymouth NHS ICT Shared Service.

In preparation for the NHS National Programme for IT (NPFIT) the Trust chose InterSystems Ensemble®, a seamless platform for integration and the development of connectable applications. It used Ensemble to enable users to share information across more than 20 disparate existing applications. It is now redeveloping its integrated services in line

with the nationally defined Interoperability Toolkit (ITK) framework to extend application interoperability across its care communities. This enables it to meet its existing clinical information requirements and build a flexible platform that will adapt to meet future demands.

Background

Plymouth NHS ICT Shared Service supports 15,000 users across the Plymouth Healthcare Community, which comprises the Plymouth Hospitals NHS Trust, the Plymouth Teaching Primary Care Trust and 42 general practitioner practices. Its responsibilities include looking after patient and clinical administration systems as well as specialist software for laboratories and general practitioners.

The acute Trust utilises iSOFT products for many of its core solutions including patient administration systems, order communications and emergency department, around which the ICT Shared Service has developed a mature integration framework. The framework enables it to develop new composite real-time solutions.

Local interoperability and information sharing

When the Trust first began working with InterSystems there were more than 20 different clinical applications linked to a central patient administration system via a complex series of interfaces.

“We have always preferred a best-of-breed approach, buying the best clinical system we could and then interfacing it.”

Andy Blofield, Director of Plymouth NHS ICT Shared Service.

This included applications such as iSOFT’s iPM patient administration and iCM clinical management systems, which were linked

to departmental systems through iSOFT’s iIE, the integration engine component of iPM. In preparation for the NPfIT programme the Trust was required to transfer its iPM to a remote data centre in Maidstone, run by local service provider CSC. However, several of its applications relied on receiving ad hoc data queries from iPM, which would be difficult to manage from the data centre. As a result, the Shared Service team took the opportunity to find a new integration solution that could deal with this problem – one that was scalable, futureproof, resilient and cost effective.

After a thorough market review, the Trust selected Ensemble. In partnership with InterSystems, the Trust’s in-house integration team installed Ensemble and rapidly implemented the current interfaces, some taking only a few days. The in-house team then created an additional ten new interfaces themselves. These included links to a remotely hosted radiology system, an interface to iSOFT’s iIE to update iPM with data returned from the DBS, and links to maternity, infection control, critical care, microbiology and histopathology applications. They also established a local repository using the InterSystems Caché® high-performance object database to hold patient demographic and ADT data for access by several other clinical systems.

Value-added solutions built on the ITK standard

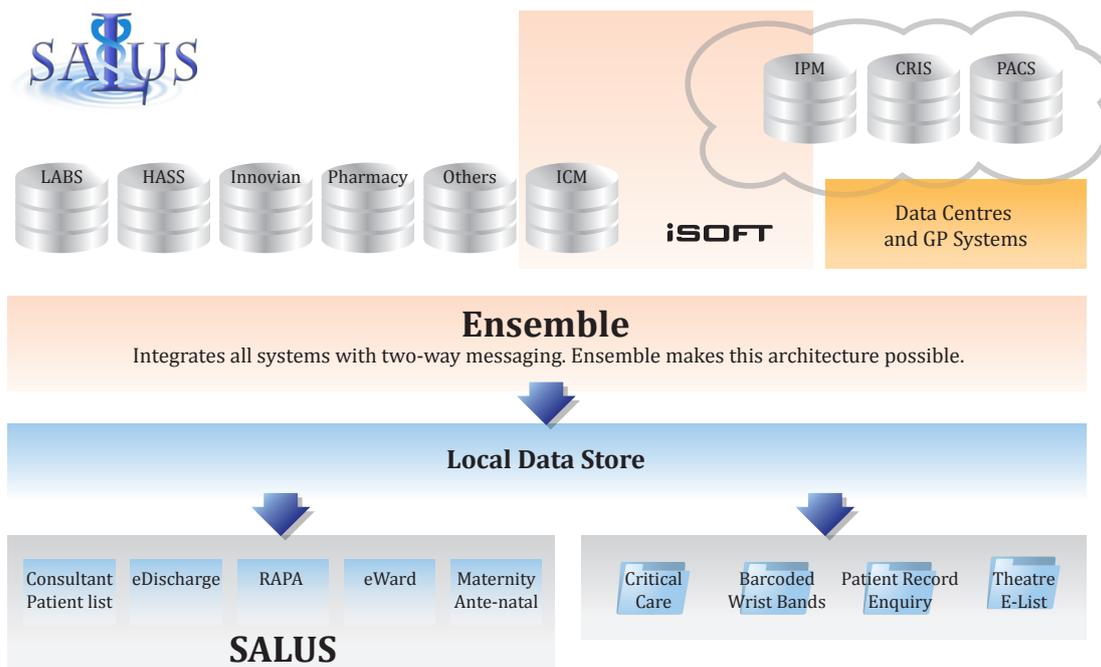
In March 2009 Christine Connolly, the Department of Health’s director general of informatics, first introduced the ITK and its philosophy of “connect all” rather than “replace all”. This was the original ethos envisaged for the national systems in the NPfIT, and it is now the Department’s de facto approach for the NHS in England.

The Trust and InterSystems have worked together to turn this vision into a practical reality to make a real difference to clinicians’ working lives. InterSystems was the first to gain full ITK version 1.0 specification accreditation and it decided to include that capability in its standard Ensemble platform. Plymouth will make full use of the ITK capability in Ensemble to streamline its integration platform in support of all its clinical systems.

Plymouth Shared Service has integrated its patient-centric applications into a unified view promoting patient care and saving valuable clinical time, naming the service Salus, after the Roman goddess of health. This provides real-time links to external systems with its modules that include Risk of Admission Patient Alert (RAPA), Discharge Summaries, Consultant Patient List & Handover and eWARD.

eWARD is a good example of the practical value Salus delivers, providing an operational view of patients on a ward using information collected on a variety of systems. eWARD enables both clinical and ward staff to see:

- Which patients have care coordinators in the community, supplying them with contact information
- Which patients have had three or more unplanned admissions in the last 12 months
- Which patients have been marked by clinicians as being recorded on iPM on the wrong ward or under the wrong consultant or specialty thus improving communication and data quality and allowing ward staff to quickly correct the information
- The status of a patient’s discharge summary, informing staff when a summary has been sent to pharmacy but pharmacy are awaiting the drug chart



Plymouth ICT Shared Service – working for Plymouth Hospitals NHS Trust and NHS Plymouth

Another Salus module is RAPA, which provides seamless real-time communication between community and acute staff for patients with long-term conditions who are under the care of a community support worker. It alerts care coordinators immediately via email and SMS messaging when one of their patients is admitted to hospital, transferred between wards or discharged.

Susan Bracey, Head of Software Development and Integration said, “Community staff now contact the wards when their patients have been admitted to hospital, discharging them early if this is in the best

interests of the patient, and updating the ward staff on any current care plans. In the past, patients would often remain in hospital whilst ward staff tried to organise community care to support their discharge, unaware that community support and care plans were already in place.”

RAPA has quickly established several additional uses, from improving safety for children identified as at risk, to saving money by reducing the time patients spend unnecessarily in hospital wards awaiting discharge. As community nurses are alerted immediately when their patients are admitted they can prevent unneeded visits to the patient’s house, cancel agency care that otherwise would have incurred a day’s full charge, and prevent unnecessary use of the police when the patient cannot be contacted at home.

Bi-directional alerts inform hospital staff of patients who may have special care requirements, such as renal patients, diabetics, or those known to the safeguarding children team or alcohol liaison nurses. GP surgeries also have access to RAPA information enabling them to target those patients who need more help in the community, supporting patients at home and reducing the number of hospital admissions. Bracey added, “The system has generated a lot of interest within the hospital, with many clinical areas wanting to know when their patients are admitted. This enables them to monitor more closely the safety of their patients and we have recently enhanced the system to support this requirement.”

“Using InterSystems Ensemble, we have the capability to interface any system to any other system. Having seen the benefits of a professional trusted integration engine like InterSystems Ensemble, we wish we’d installed it years ago.”

Andy Blofield, Director of Plymouth NHS ICT Shared Service.

Future benefits delivered quickly and iteratively

Plymouth ICT Shared Service's strategic use of integration enables it to support existing services and continuously innovate. Blofield says, "We are utilising the Ensemble interoperability framework to underpin the local development of a portal, integrated to the Electronic Staff Record for role-based access and utilising single sign-on to provide a single point of access for staff to all local healthcare applications at the point of care."

In addition, a real-time bed management solution, Patient Care Manager, is being developed to provide the organisation with the information it needs for the effective management of its patients. Blofield added, "The platform and architecture are already in place with SALUS and the inclusion of bed-level management will complete the suite of products required to fully support the patients' pathway and to support the needs of our clinical and operational staff."

The solution at Plymouth is arguably amongst the most advanced in the country, being adaptable enough to cope with all foreseeable future needs in a cost-effective and intuitive manner. "Having a strategy firmly based on interoperability standards has enabled us to integrate our stakeholder organisations systems and services using a controlled, step-based approach that delivers benefits quickly and iteratively whilst providing the flexibility to develop generic solutions to specific problems that may then be utilised by others with minimal effort," Blofield concludes.

Overview of Salus benefits

- "Connect all" not "replace all" – ITK enables new solutions to be built easily on top of existing architecture and at minimum cost.
- eWARD – a real-time ward view that provides up-to-date status information on all admitted patients.
- RAPA module prevents inappropriate admissions:
 - Community patients spend less time in hospital, freeing beds and reducing costs – previously patients would have to wait until staff had organised community care.
 - Increased inter-organisational data sharing – with reciprocal data sharing with community nurses for at-risk patients, alcohol dependency and children with suspect injuries.
- Built-in InterSystems Caché database repository enables unique NHS numbers to be updated and duplicates or deceased patients to be removed.

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