Introduction
Sandwell and West Birmingham Hospitals NHS Trust were formed in April 2002 following the merger of Sandwell Healthcare NHS Trust and City Hospital NHS Trust. With the transfer of Sandwell’s community health services in the April 2011, the Trust now provides a wide range of acute and community services to a population of 540,000. These services are carried out from a number of sites, including the General Hospital in West Bromwich, City Hospital in Birmingham, Rowley Regis Community Hospital and Leasowes Intermediate Care Centre.

Sandwell General Hospital provides a broad range of services including A&E, an Emergency Assessment Unit and a Cardiac Care Unit as well as specialist services. The Trust hosts the Midland Eye Centre, a super-specialist facility across the region, a Pan-Birmingham Gynaecological Oncology Centre and the Sickle Cell and Thalassaemia Centre.

The Birmingham Treatment Centre at the City Hospital site provides facilities for diagnosis and treatment and includes an Ambulatory Surgical Unit with six theatres, extensive imaging facilities, an integrated breast care centre, teaching accommodation and outpatient facilities.

Solving information exchange challenges
Sandwell and West Birmingham Hospital NHS Trust wanted to improve patient care and realised that a key requirement to achieving this was in enabling its numerous IT systems to talk to each other. This would allow data to be integrated and managed to improve both the patient and clinician experience, such as enabling clinicians to be alerted to events e.g. when a patient is admitted to the emergency department.

The Rhapsody platform was recommended by a neighbouring Trust for its proven ability to deliver results.

Easy to use and rapid deployment
Rhapsody was deployed rapidly and the team at the Trust required no formal training to get started. Staff utilised Rhapsody’s drag and drop configuration tools and easy to use features to set up a number of simple rules based alerts for clinicians all around the Trust.

Rhapsody is now interfaced to a number of systems across the Trust and used to generate and send email alerts to the relevant clinician’s regarding radiology and pathology results. When results are received via HL7, Rhapsody searches segments for specific codes which when located, trigger an email alert response to the appropriate teams for further action and investigation.

Rhapsody is currently also integrated with a multitude of other systems such as the local CDA, ICM, CRIS, Telepath etc. all of which were implemented and interfaced to Rhapsody without the use of consultancy services.

Setting up an ‘award winning’ alerting system
Within the Cancer care facility at the Trust, Rhapsody is configured to receive an admission message from the Trust’s existing PAS system, this is used to populate a lookup table that lets Rhapsody flag up a particular patient to notify clinical nurse specialists via either NHS emails or text messages. Clinicians are alerted whenever one of their patients has been admitted to hospital. Six cancer clinical nurse specialist teams within the Trust are currently using this system to manage patient care.

These alerts have been used to flag up colorectal cancer patients and those diagnosed with upper gastrointestinal cancers since May 2010 and urology and lung cancer patients have been flagged since April 2011. In total 1023 alerts have been triggered.
Upon receiving an alert, the clinician can go to the A&E or the ward when their patient is admitted and assist in getting a supported discharge plan in place. This has had a positive impact on length of stay and reduced usage of hospital bed days.

Rhapsody alerts have also benefited outcomes in other clinical settings, such as supportive care pathways, pressure sores, CNS, bone metastases, mortality alerting, pneumonia, patient appointment reminders, haematology trials and radiology and pathology cancer alerts.

**Awards, cost savings and improved patient care**

The Trust has won numerous awards and accolades for the benefits achieved as a result of managing cancer care alerts using Rhapsody, including the EHI award for ‘IT-enabled change’ in 2011.

The results achieved and benefits realised since implementation have certainly been impressive. Two years of admissions data demonstrate that length of stay has reduced from 20 days to four days. And across two tumour sites running the alert system for eight months, the reduction in length of stay associated with emergency admissions has released in excess of 3,700 bed days, creating a saving of over £900,000.

Integrating data through Rhapsody has helped the trust improve patient care in other ways. For example, patients are no longer undergoing unnecessary or duplicate tests and are now reassured that a cancer nurse specialist upon admission will see them. The patient experience overall has been greatly improved particularly for inpatients who can seek support and reassurance from a qualified clinician who understands their ‘needs’.

**Future integration to further improve patient care and productivity**

Rhapsody currently sends and receives 75,000 inbound messages and about 175,000 outbound messages a day at the Trust. Sandwell and West Birmingham Hospitals NHS Trust has plans to continue using Rhapsody and maximise usage going forwards, to create a paperless environment. In addition, they intend to complete plans to implement a new A&E system, radiology system and check-in desks, which will be integrated with Rhapsody to transfer real time data across departments.

**References**


http://www.ehi.co.uk/insight/analysis/917/ehi-awards-2011:-on-the-alert

“*Our cancer care alerts via Rhapsody have enabled us to manage care for cancer patients more effectively and be recognised as a Trust which is leading the way in this area.*”

Rob Jones, Interface Developer
Sandwell & West Birmingham Hospitals NHS Trust