INTRODUCTION

The Cheshire Care Record is an integrated care record solution that shares information across a range of health and care settings. The record is used to support clinical decision making and transfers of care. The former West Cheshire Record was extended across the whole of Cheshire in 2016.

The Cheshire Care Record uses Graphnet CareCentric v.3 software.

TIMELINE

- 2014: 5 partner organisations submit a bid to the NHS England Integrated Digital Care Fund which was approved.
- 2014: A decision is taken to extend the technology from the West Cheshire Record to support the project.
- 2015: Datasets from East Cheshire are integrated into the West Cheshire Care Record resulting in 98 datasets.
- 2016: Integrate pathology datasets for Mid and East Cheshire and extend the social care and community datasets.
- Plan 2017+: 14 organisations

INVESTMENT OBJECTIVES

"TO DELIVER A CARE RECORD SOLUTION ACROSS THE ‘CHESHIRE’ AND FURTHER, WITH A LONG TERM EXPECTATION THAT THIS WILL PROVIDE THE BASIS FOR THE DEVELOPMENT OF MORE TARGETED AND REFINED FUTURE SERVICE."

Approx. 1800 patient records accessed per month

Approx. 750,000 population
SOLUTION

- The Cheshire Care Record is a read-only integrated care record using Graphnet’s CareCentric v.3 software.
- Information about patients are drawn from a range of health and care settings including primary care, acute care, social care, community, mental health and cancer care. There are 98 datasets integrated.
- End-users can view this amalgamated information through the CareCentric portal, or through their existing system for EMIS, Adastra, Meditech, ExtraMed, Vision and CareNotes users.
- Information governance rules are in place to manage the access to the data.
- Additional organisations, other than those providing data, are able to view the patient record for example ambulance service and Out of Hours GPs, Hospices and the long-term care organisation: Continuing Healthcare

BUSINESS CAPABILITIES

RECORDS ACCESS

- Provides a read-only summary of the patient record from within the existing clinical systems, or through a web-based portal.
- The record includes access to:
  - Patient medications
  - Hospital attendances
  - Diagnoses
  - Community information
  - Key contacts (other carers)
  - Allergies
  - Immunisations
  - Test results
  - Social care information
  - Mental health information

TRANSFERS OF CARE

- Information can be viewed in the Cheshire Care Record when a patient is handed-on to other parts of the service for example via a referral, transfer or discharge.
- GPs, social and community care organisations are able to see the appropriate information such as future appointments and test results.
- This supports safe and effective continuation of care.

INFORMATION SHARING RULES

- A cross community Information Sharing Agreement governing access to patient records is in place.
- The agreement authorises data providers, data controllers and data viewers.
- A Cheshire Care Record is created based on implied consent and patients have to explicitly opt out if they don’t want a record to be created for them by informing their GP.
**TECHNICAL SOLUTION**

**CENTRAL-REPOSITORY ARCHITECTURE**

- Cheshire Care Record uses Graphnet CareCentric v.3.
- Patient data is pulled at least every 24 hours and stored in a central data repository.
- Data is pulled from GP, acute, community, cancer, mental health and social care systems.
- Health and care professionals view data through a portal, or through their core clinical systems.
- Audit logs are generated.

**SOLUTION FEATURES**

<table>
<thead>
<tr>
<th>FEATURE</th>
<th>IN USE</th>
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<tbody>
<tr>
<td>Coded data</td>
<td>✔</td>
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<tr>
<td>Free text data</td>
<td>✘</td>
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<tr>
<td>Bi-directional</td>
<td>✘</td>
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<tr>
<td>Real time</td>
<td>✘</td>
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<tr>
<td>Role-based access</td>
<td>✔</td>
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<tr>
<td>Clinical Portal</td>
<td>✔</td>
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<tr>
<td>Analytics</td>
<td>✘</td>
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<tr>
<td>Write access</td>
<td>✘</td>
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<tr>
<td>Notifications/Alerts</td>
<td>✘</td>
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<tr>
<td>Patient Portal</td>
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**HEALTH AND CARE IT SYSTEMS IN THE REGION**

<table>
<thead>
<tr>
<th>SITE</th>
<th>IT SYSTEM</th>
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<tbody>
<tr>
<td>East Cheshire Borough Council</td>
<td>LIQUIDLOGIC</td>
</tr>
<tr>
<td>Mid Cheshire Hospitals NHS Foundation Trust</td>
<td>SILVERLINK</td>
</tr>
<tr>
<td>East Cheshire NHS Trust</td>
<td>CSC</td>
</tr>
<tr>
<td>East Cheshire Community</td>
<td>EMIS</td>
</tr>
<tr>
<td>The Christie NHS Foundation Trust</td>
<td>SYSTEM C</td>
</tr>
<tr>
<td>Cheshire &amp; Wirral Partnership NHS FT</td>
<td>CARENOTES</td>
</tr>
<tr>
<td>Countess of Chester Hospitals NHS FT</td>
<td>MEDITECH</td>
</tr>
<tr>
<td>Clatterbridge Cancer Centre NHS FT</td>
<td>MEDITECH</td>
</tr>
<tr>
<td>West Cheshire and Chester Council</td>
<td>LIQUID LOGIC</td>
</tr>
<tr>
<td>36 GPS: Western Cheshire CCG</td>
<td>EMIS</td>
</tr>
<tr>
<td>23 GPS: Eastern Cheshire CCG</td>
<td>EMIS, MICROTEST</td>
</tr>
<tr>
<td>18 GPS: South Cheshire CCG</td>
<td>INPS</td>
</tr>
<tr>
<td>12 GPS: Vale Royal CCG</td>
<td>EMIS</td>
</tr>
</tbody>
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**OPEN STANDARDS**

<table>
<thead>
<tr>
<th>STANDARD</th>
<th>COMPLIANT</th>
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<tr>
<td>HL7 v.3</td>
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**HIGH LEVEL TECHNICAL ARCHITECTURE DIAGRAM**

- Data Sources
  - Primary care: EMIS/MICROTEST/INPS
  - Community Care: CareNotes/EMIS
  - Mental health: CareNotes
  - Acute Care: PAS, EMR
  - Social care: Liquid Logic

- Data Integration

- Data Storage

- CENTRALISED DATA STORE

- CHESHIRE CARE RECORD

- SHARED CARE RECORD ACCESS

- CLINICIAN ACCESS TO PATIENT INFORMATION
IMPLEMENTATION

Implementation of the Cheshire Care Record began in April 2015. During the 2-year implementation period, the West Cheshire Care Record hosting environment was expanded to meet the additional requirements. New integrations’ were set up for the additional organisations, and individual provider organisations worked with the supplier to set these up. The providers owned the data governance requirements, training and communication.

GOVERNANCE

The Cheshire Record Programme Board reports progress to the Pioneer Panel.

The Cheshire East Council held the Tech Fund and partners’ matched funding. Each partner drew from this funding pot as required to implement the project.

The information governance group met monthly during implementation and now meets bi-monthly during ongoing day to day operations.

FUTURE AMBITIONS

In the future there are specific milestones and plans to:

• Give access to ambulance services (North West Ambulance Service) – May 2017.
• Add pathology datasets from Mid and East Cheshire – May 2017.
• Add Social Care assessments – April 2017.
• Add children’s health dataset, enhance existing social care, community and mental health datasets.
• Pilot a patient portal.
### SOLUTION BENEFITS

The Cheshire Care Record programme identified 43 potential direct and indirect benefit scenarios due to the use of record. A selection of these are provided below:

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>PATIENT</th>
<th>CLINICIAN</th>
<th>OPERATIONAL</th>
</tr>
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<tbody>
<tr>
<td><strong>DUPLICATE TESTS</strong></td>
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<tr>
<td>Increase in number of same day/24hour/48 hour discharges through speedier access to GP/Mental/Social/Cancer Care patient information</td>
<td>Patient experience improves as action can be taken without delay</td>
<td>Saves time retrieving patient information</td>
<td>Reduced bed occupancy and associated costs 50% Increase in same day, 24/48 hour discharges*</td>
</tr>
<tr>
<td><strong>TIME SAVING</strong></td>
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<td>Out of Hours Team reduce time to retrieve Social/Mental Health/Hospital/GP/Oncology patient information</td>
<td>Patient outcomes improve as staff have up to date information</td>
<td>Saves time retrieving patient information</td>
<td>Reduction in duplicated administrative work and reduction in number of home visits required 6% of time saved****</td>
</tr>
<tr>
<td><strong>CARER IDENTIFICATION</strong></td>
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<td>Community staff can identify patient carers and find the outcomes of hospital and cancer related visits quicker</td>
<td>Patient experience improves as can be treated sooner</td>
<td>Less time spent on administrative tasks</td>
<td>Community staff spend time on patient care instead of administrative work Average of 30 minutes saved**</td>
</tr>
<tr>
<td><strong>EMERGENCY CARE</strong></td>
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<tr>
<td>A&amp;E and EAU staff can save time locating information about patients who are confused and unable to present information about themselves</td>
<td>The patient experience improves as there is less pressure for patients to remember key information</td>
<td>Saves time diagnosing patient information</td>
<td>Increased efficiency so better able to triage patients within target wait times 1 hour a day saved in A&amp;E and AEU***</td>
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* : Workshop with ECH Frailty team
*** : A&E and AEU audit
** : Community care staff audit
**** : Workshop with MCH Out of Hours team

A joint business case was signed off by all partner organisations. Financial sponsors are looking to demonstrate that the solution delivers 1.5 times the investments being made. The project found tracking benefits by individual time and motion studies challenging and is now measuring benefit by monitoring usage and equating an average saving for each time the record is accessed.
SUCCESS FACTORS

INDEPENDENT PROJECT MANAGER
• The project manager was independent from any of the partner organisations and dedicated solely to the project.
• Enabled facilitation and resolution of differences particularly around challenging topics like information governance.

MEMORANDUM OF UNDERSTANDING
• A memorandum of understanding was agreed at the start of the project between the senior management of all partner organisations.
• Set out the funding provision, local resource commitment and roles.
• Provided clarity and agreed ways of working going forward.

EFFECTIVE DESIGN PROCESS
• The central project team worked iteratively with the central design authority and individual organisations to define the requirements for each data-feed.
• They held individual discovery meetings followed by focused workshops with all stakeholders.
• Decision-orientated workshops promoted decisiveness.

UNDERSTAND THE LOWER-LEVEL DATA REQUIREMENTS
• Clinical participation in the design process for usefulness.
• For example social care assessments need to include the right quantity of data to be useful for GPs. It was more important to include contact information, than lengthy explanations.
• It was also important to include data-feeds that were regularly populated by the provider.

USE OF EXISTING INTEROPERABILITY PROGRAMMES
• The Cheshire Care Record expanded West Cheshire's set up: procurement, services, information governance and data integration.
• Using a neighbour’s infrastructure reduced effort and complexity through economies of scale.
• They also benefited from the local knowledge and communication material.
LESSONS LEARNED

Challenge: The project anticipated usage would increase rapidly following local engagement talks at sites. This has not been the case and there is an uneven uptake of the Cheshire Care Record. Possible reasons are:

- Health and care professionals perceive that it will take too long to get patients to consent to view the record and do not attempt to use it, when findings shows that patients generally consent and in fact expect that the data is being shared already.
- Staff adhere to standard operating procedures and need accessing the Cheshire Care Record to be build into these procedures as they are reluctant to deviate from these for safety reasons.
- The incremental approach meant not all datasets were available at the point of communication and so some health and care professionals waited for later datasets to be integrated before commencing use.

Lessons Learned: A soft approach to communication may not always be effective as changing routines are difficult. A more assertive and comprehensive engagement may be required. Ensure that senior stakeholders champion the project and investigate ways that using the record can be embedded within core training, for example as part of the induction.

STANDARDS

Challenge: The standard HL7 messages in place at each organisation still required a degree of interpretation. Messages such as activity, pathology and radiology needed amendments for each organisation.

Approach: A decision was taken for Graphnet to standardise the data that should be used across the different organisation. It was agreed that new data feeds should always be standardised.

INFRASTRUCTURE

Challenge: The solution is hosted at one of the partner organisation’s sites but supported by Graphnet. There was a large dependency on effective communication to resolve issues which on occasion delayed resolution.

Lessons Learned: Consider hosting the solution virtually with the supplier to reduce the dependency on multiple teams and increase the speed of resolution.