Medications data using a CareConnect #FHIR API

Bristol, North Somerset & South Gloucestershire (BNSSG) Connecting Care

INTRODUCTION

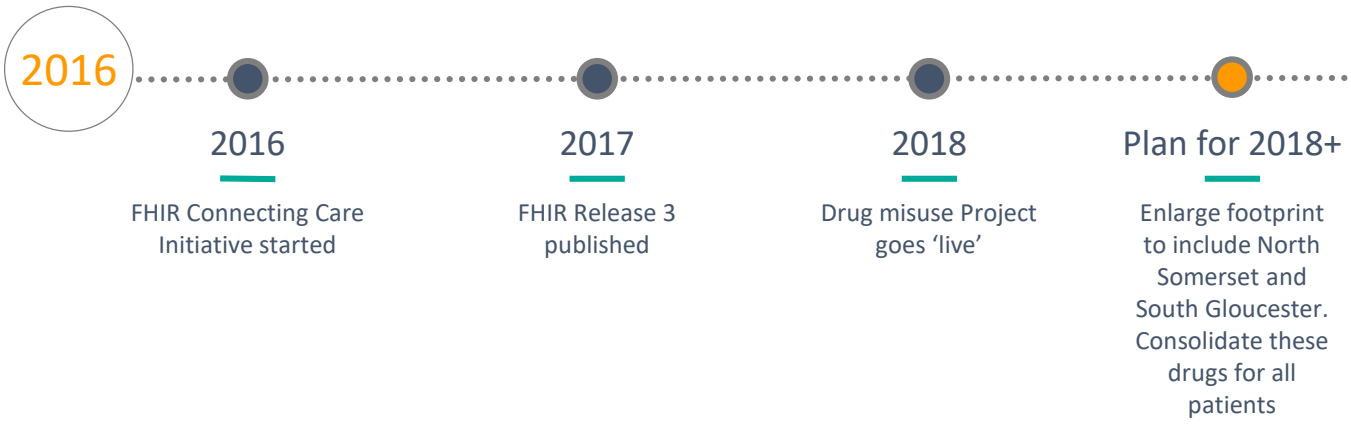
Clinicians often struggle to retrieve a patient's medications history to prepare a list of collated medications as the data is, typically, stored across a number of systems.

In Bristol, the Connecting Care Programme has developed a solution which involves adopting FHIR to address the needs of medication reconciliation.

The initial aim is to avoid substance misuse (specifically opioid substitution therapy drugs) within Bristol but there are far wider future aims

> "GPs now have a reliable, quick efficient way of knowing whether the patient in front of them is receiving opiate substitutes from drug workers outside practice-based care"

TIMELINE



27 organisations linked

across **85** sites

Accessed by **6,000** health professionals

KEY STEPS TO REPLICATE

- **Develop a clear vision**
  Ensure that all stakeholders understand and agree the over-arching purpose and objectives

- **Do not underestimate the benefits of a Project Sponsor**
  A project sponsor can unlock issues and ensure the executive board are informed and supportive of a project.

- **Work collaboratively**
  It is imperative to get both the IT and the Clinical staff on the same page. This project used an Agile approach which relies on flexible and rapid collective responses to change

- **Build a strong supplier relationship**
  Research the market and be clear about the important required attributes of your system. A committed and flexible supplier is key to successful, timely delivery

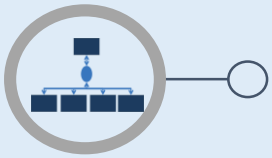
KEY THEMES

Medication, Prescribing, Opioid substitution therapy, OST, Drugs, Medication reconciliation, FHIR , controlled drugs, harm reduction, social care

KEY WORDS

Medication, Prescribing, Opioid substitution therapy, OST, Drugs, Medication reconciliation , Bristol, North Somerset, South Gloucestershire, FHIR, Drug dependency, Theseus, EMIS, controlled drugs, harm reduction, social care

CONNECTING CARE TECHNICAL SOLUTION



CENTRAL-REPOSITORY ARCHITECTURE

- Connecting Care is built on the Orion Health platform, enabling end users to view data through the portal.
- Appropriately authorised users search for a patient , to view a list of prescribed medication (current, past and any issues)
- The current implementation alerts users to controlled substances prescribed in the Substance Misuse Team's management system; Theseus.

SOLUTION FEATURES (current)

FEATURE	IN USE
Coded data	✔
Free text data	✔
Bi-directional	⊘
Real time	✔
Role-based access	✔
Mobile	✔
Write access	⊘
Notifications	⊘
Alerts	✔
Patient Portal	✔

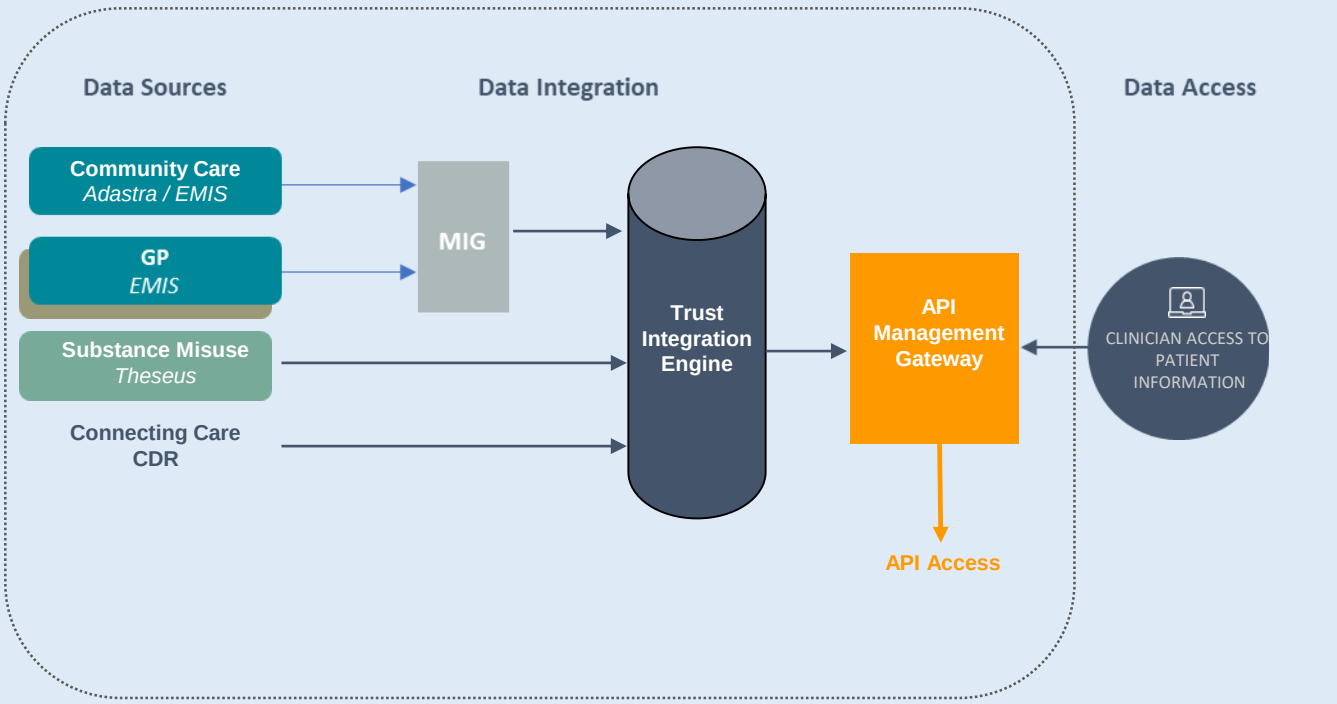
KEY SYSTEMS IN SCOPE

SITE	TYPE	VIEW	SHARE	IT SYSTEM
North Bristol Trust	Acute	Yes	Yes	Lorenzo
University Hospital Bristol	Acute	Yes	Yes	Medway
Weston Area Health Trust	Acute	Yes	Yes	Cerner
Bristol City Council	Local Authority Adults & Children	Yes	Yes	Liquid Logic
North Somerset Council	Local Authority Adults & Children	Yes	Yes	SWIFT Liquid Logic
South Gloucestershire Council	Local Authority Adults & Children	Yes	Yes	SWIFT Servelec
Bristol Community Health	Community	Yes	Yes	EMIS Web
North Somerset Community Partnership	Community	Yes	Yes	EMIS Web
Sirona Care and Health	Social Enterprise	Yes	Yes	EMIS Web
GP Practices	GP	Yes	Yes	EMIS Web
Brisdoc (Out of Hours)	GP / Social Enterprise	Yes	Yes	Adastra
ROADs / Bristol City Council	Substance Misuse / LA	Yes	Yes	Theseus

OPEN STANDARDS

STATUS	SNOMED	Read	XDS.b	HTML	ITK	HL7	HL7 FHIR
IN USE	✔	✔	✔	✔	✔	✔	✔

HIGH LEVEL MEDICATIONS SHARING ARCHITECTURE

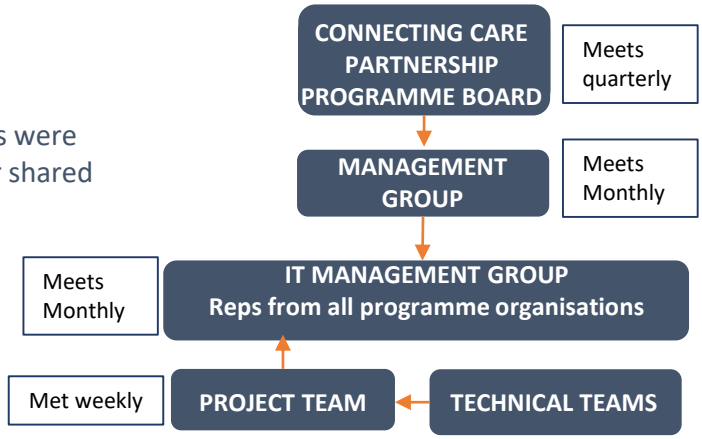


LOCAL CONTEXT

The project's primary aim was cutting drug related deaths and near misses across Bristol due to opioid substitution therapy drugs over-prescription. Without joined up systems, it is impossible for prescribers to get a real-time accurate overview. Those most at risk from the 'gap in care' around controlled drugs are often the homeless and the most vulnerable. This project aimed at providing greater patient safety to those at risk.

GOVERNANCE

Clinical and Information Governance colleagues were brought on board early. This developed a clear shared consensus around the project's aims.
The Governance structure can be seen (right)
Regular engagement was via weekly project webex meetings & fortnightly newsletters to users



IMPLEMENTATION

This was a very rapid project; from design to go-live took just seven weeks. Across this locality, all the GPs and the 3 Community Providers used the EMIS system. In essence the project was, therefore, about linking two separate systems via FHIR. The project used agile methodology coupled with feasibility studies. Clinicians came together to produce a series of user profiles.

The Care Connect interface linked Orion Health's integrated digital care record and the Cyber Media drug and alcohol system, Theseus, which is used by Bristol City Council. The Connecting Care platform is able to connect 27 organisations across 85 GP Practices, NHS Hospitals, Community, Mental Health and Out of Hour Services, Social Services, Paramedics, Charities and Hospices.

OPIATE DEPENDENT PATIENTS

Some treatment teams within Bristol, including the Rapid Prescribing team, generate and record prescriptions of controlled drugs in a Bristol City Council system called Theseus whilst GPs and Community care uses a system called EMIS Web.

The Connecting Care team have been working with Bristol City Council to make this controlled drug prescription information visible to prescribers across primary and secondary care via the Connecting Care portal. From the beginning of September 2018, Bristol controlled drugs information is available to view in Connecting Care to appropriately authorised users.

Opiate dependent patients who are not registered with a GP in BNSSG, and who have been released from prison on an OST (Opiate Substitute Therapy) script, are taken on by Rapid Prescribing and start to receive an OST script from them. This script was generated from the Theseus system which is not visible to other prescribers .

If these patients go to the Homeless Health Service, or in General Practices, GPs sometimes issue a "bridging script" prior to patients being formally referred to ROADS (Recovery Orientated Alcohol & Drug Service) Shared Care. This is because there is often a long wait (4-6wks) when patients might go back to using drugs and committing crime.

There have been occasions when patients have been given duplicate scripts for methadone because the GP has not been able to see Rapid Prescribing scripts in EMIS. By making Theseus prescribing by the Rapid Team visible in Connecting Care, this risk of duplicate prescribing is avoided.

EXPECTED BENEFITS

This new controlled drugs information, together with the medications information from the GP system (and soon hopefully the acute hospitals and community pharmacies), will begin to create an overview of drugs prescribed for an individual. Sharing this information with authorised staff as soon as it is entered into Theseus will help to:

Increase Patient Safety

- 'Close the gap' in controlled drug prescribing knowledge and help prevent potential duplicate prescribing events and reduce the likelihood of death or serious incidents to reduce patient harm.
- Benefit both organisations (reduction in duplicate prescribing) and individuals (reduction in duplicate prescribing)
- Improved messaging technology means that it should be easier to link with the two other controlled drugs databases in North Somerset and South Gloucestershire to access their information in the future.

Reduce Costs

- A report by PwC, commissioned by the Department of Health "A review of the potential benefits from the better use of information and technology in Health & Social Care", states - the cost of Adverse Drug Reaction (ADR) related admissions is £1.9Bn per annum. Indeed an assumed 6.5% of hospital admissions are thought to be a result of adverse reactions with an average stay of eight days.
- It is reasonable to assume, based on the high levels of utilisation of medication and allergy information in the system, that Connecting Care will support a significant reduction in adverse event related admissions.

PATIENT SAFETY

Medicines reconciliation is where a patient's prescribed medication is checked against current medications to ensure there is no conflict. Creation of this interface will assist with this reconciliation and so support safer patient care. Research has shown that when patients are transferred from one care setting to another between 30% and 70% of patients may have an unintentional change to their medication. These unintentional changes can cause patient harm.

CLINICAL EFFICACY

"I have had several patients, recently released from prison, who I have been able to clearly see are receiving scripts from rapid prescribing, but in many ways the more useful information is the group where I have been able to verify that they are not receiving a service from rapid prescribing. These are usually the recently released offenders who have been released, gone on a bender for several weeks, not turned up at probation or rapid prescribing, and have not received any OST. These are the most at risk group. I have then been able to prescribe safe in the knowledge that this will not be duplicate prescribing."
Lead GP - The Homeless Health Service, Bristol

SUCCESS FACTORS

VISION

CLEAR OBJECTIVES

- The medication project for homeless and/or vulnerable patients within Bristol was always seen as a very focussed project on the way to a far wider strategy of bridging more gaps in prescribing
- This clear objective meant communications could be open and this fostered support as the project developed.
- Building momentum by taking a small but meaningful first step it will be easier to widen the project to North Somerset and South Gloucester and then scale up to cover the wider population in the future.

COLLABORATION

COLLBORATIVE WORKING

- The project was developed via Agile. This approach requires both a level of digital maturity as well as a commitment to collaborative working. Agile, by its nature, is based on a flexible and rapid response to change.
- As with any information sharing, it is important IT and the clinical staff on the same page. IT staff need to support clinicians in the secure sharing of patient data with the right teams, correctly and appropriately to realise benefits to individuals, teams and organisations

SUPPLIER

STRONG RELATIONSHIP WITH SUPPLIER

- The NHS South Central and West Commissioning Support Unit's Connecting Care programme spent a lot of time in the tech community helping to develop FHIR technology. This helped them to develop an understanding of the options as well as building relationships with potential suppliers.
- Orion Health and Cyber Media, who provide the technology that underpins the project, are members of INTEROPen community and were involved in developing the interoperability standards . This reassured the team that the work would be 'open interface' and flexible for future developments.

FUTURE AMBITIONS

The current project was focussed primarily on substance misuse incidents in Bristol. However, there is a clear path of future ambitions:

- The initial priority will be to expand the geographic footprint so that both North Somerset and South Gloucester show the same data set within Connecting Care
- The current system primarily aims to avoid vulnerable patients getting multiple prescriptions. A future wider aim is to consolidate medicine information for all patients
- Once this task is completed, the aim is to use the system to look at developing a wider population health management approach.

LESSONS LEARNED

ENSURE YOU HAVE A COMMITTED SPONSOR

Challenge: Without a committed sponsor, a project will struggle to gain real traction

Lessons Learned: A strong executive project sponsor can provide clear direction for the project and how it links with the organisation's overall strategy, secure project resources , ensure the project is on time, on budget and on scope, provide feedback on status reports and make sure they reach the necessary stakeholders and champion the project at the executive level to secure buy-in.

DEVELOP A SHARED VISION

Challenge: There was a very clear, shared vision of the purpose of the initial project as well as a clear vision of future development areas

Lessons Learned: Communication is critical for developing and sharing a vision. The project ran a 'kick off' meeting which established goals and expectations. It then developed clear lines of governance as well as newsletters to share progress. These steps meant that stakeholders were clear about both the immediate and longer-term goals. The team also developed user stories and a prototype which established the case for change as well as the benefits of the future state for users. This meant that the goals were visual and easily understandable for front line staff..

MAINTAIN AN OPEN SYSTEM

Challenge: The long-term goal is to create a consolidated list of medications for all patients across the health economy using open standards

Lessons Learned: To fulfil this aim, it was essential that an interface was developed which could be re-used. The Care Connect FHIR API developed by INTEROPen allowed the system to interface with the 'Orion' Health Clinical Portal and the Council's 'Theseus' substance abuse management system. Critically, it also allowed the future expansion. The work done on data standardisation meant that there was an established idea of what was wanted. This, coupled with a strong supplier relationship, meant that stakeholder requirements were defined prior to work starting and that the necessary outcomes were achieved

FURTHER INFORMATION

CONTACT

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INFORMATION CORRECT AS OF 01/11/2018

LINKS

https://www.bristolccg.nhs.uk/media/medialibrary/2016/11/stp_annex_c_06-2016_mItiDgU.pdf

https://www.connectingcarebnssg.co.uk/