

INTEROPen Hackathon Event Memo

Some CASPA members attended the hackathon held on the 14th and 15th of October 2019 focused on the theme “Fixing Broken Care Journeys”. CASPA led the work stream 1, entitled “*Patient Care Coordination (admissions, discharges, withdrawals to and from care settings/transfers of care)*”.

This note provides CASPA members with a description of the work covered, what it means for interoperability between care homes and NHS, and next steps.

About the INTEROPen Hackathon Event

This was an event aimed to connect developers and other interested parties to work collaboratively to achieve the goal of interoperability within health care and across into Social Care. The aim was to design, develop and test solutions to provide patients and care professionals with access to the information they need, when and where it’s needed.

CASPA members were focused on stream 1 where the user stories cover the scenario of a person who receives care in the community being admitted into hospital, and then being discharged from hospital into the care of a social care team.

What is Fast Healthcare Interoperability Resources - FHIR?

In order to share the right information/data quickly and reliably about a patient between organisations across the global an industry standard must be in place. [Health Level 7](#), referred to as HL7 is the base of this standard. FHIR is then designed to simplify the implementation without sacrificing the information integrity.

There are different free FHIR servers available that easy to set up and give RESTful APIs to Create, Read, Update and Delete data.

What is a FHIR Profile/Resource?

HL7 have developed a set of Resources that each FHIR server will have. Examples of resources include “MedicationRequest”, “Observation” and “Encounter”.

These have structured data points within them but can be extended or sliced to provide different functionality of the base resource.

A profile is a set of constraints on a resource, which has 3 levels:

Level 1: The FHIR baseline profile

Level 2: Nationwide Profile, examples:

Patient resource would need NHS number for England and Wales

Removal of optional elements if deemed clinically “unsafe”

Level 3: Allows for specific use case and applying validations to a profile

These profiles are then bundled into a set which is maintained and used nationally and locally to provide the interoperability to share the data between organisations.

What is Care Connect and GP Connect?

CareConnect is a term coined by HL7 UK as the name for the collection of national FHIR profiles for the UK. Developed to STU3 standard the aim is to have a set of Level 2 profiles that is used in the UK.

The goals CareConnect draft are

- A. to publish an agreed set of national interoperability standards, called CareConnect FHIR profiles (for example to aid the exchange of structured medications records between systems)
- B. develop CareConnect APIs to support many use cases in the care system

GP Connect is a service that was built to allow GP practices and authorised clinical staff to share and view GP practice clinical information and data between IT systems, quickly and efficiently. Due to the way in which this has so far been developed there are many level 3 profiles that have been built to meet a local need for an area or practice.

Which Profile/Resource set should we be using?

The goal is to have a unified set of profiles that we all use, as you can see above we already have Care Connect and GP Connect running in parallel along with others. With GP connect having a lot of Level 3 profiles it makes it hard to have the national interoperability.

CASPA is already using CareConnect with the eRedBag project, where we will look to produce a Level 2 profile signed off and in use at the national level.

It will depend on what information you are fetching or have, however we recommend you start by using CareConnect over GPConnect for these reasons.

Location of storing and accessing data problem

At present the HSCN/N3 network is in place which is securing NHS and care services FHIR servers, making them accessible from the internet; there are plans to enable cloud/internet first solutions and changes are being made to enable this.

As part of the eRedBag project a link into the network is available to CASPA, enabling the pushing of an eRedBag to a hospital server within the HSCN for the pilot scheme.

As we look to scale up the eRedBag we need to make use of other infrastructure and patterns that the NHS have in place or are building.



NRL - National Resource Locator

The NRL has been built to act as a pointer system for FHIR records. A provider/service that stores a profile such as 'Patient - X' will register in the NRL the location of that 'Patient' profile for 'X' on the NRL pointing to their own FHIR instance.

When requiring a 'Patient' profile for 'X' it is preferred practice to check the NRL for the location of this profile. This may be stored on any number of servers. NRL returns the location of each record.

The NRL has an onboarding journey, which is a lengthy process and may put individual providers off.

LHCR - Local Health Care Records - commonly pronounced 'lycra'

The aim of the LHCRs is to provide a single consolidated and standardised view from across the different venues of care. These will be geographically defined and contain all the information from different services about a person's care. Currently five up and running as exemplars: Greater Manchester, Thames Valley & Surrey, Wessex, One London and Yorkshire & Humber.

The Health Information Exchange network seems to be being replaced by LHCRs.

The NHS is also building an app that allows direct access for a patient into their care records.

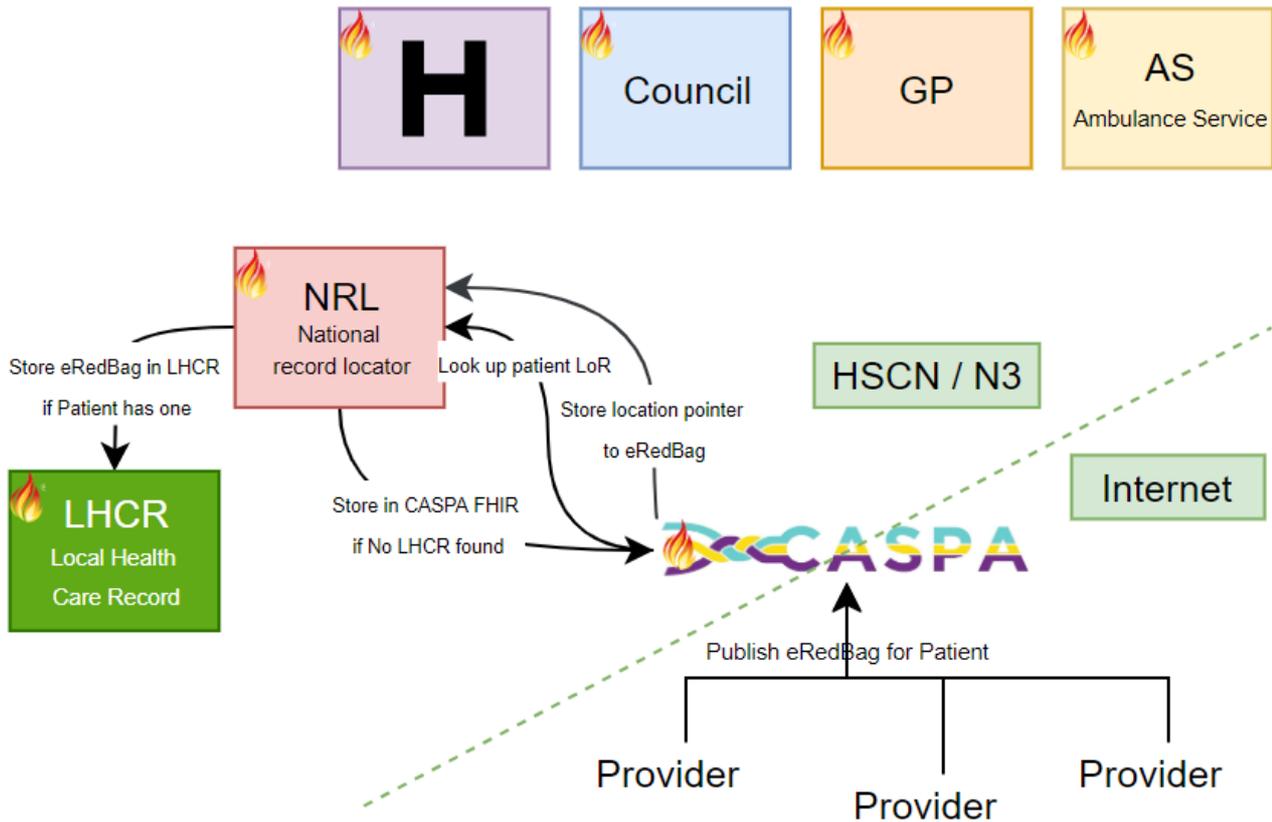
Due to the constraints of the NRL many providers may look to connect directly to the LHCR before the NRL.

How does this help CASPA?

One of the key parts of any information system is access to data, LHCRs have contracts and SLAs in place to ensure that the data stored on them is readily available and all scalability and storage issues are taken care of. LHCRs are also working with all different providers within their areas to provide/gain access.

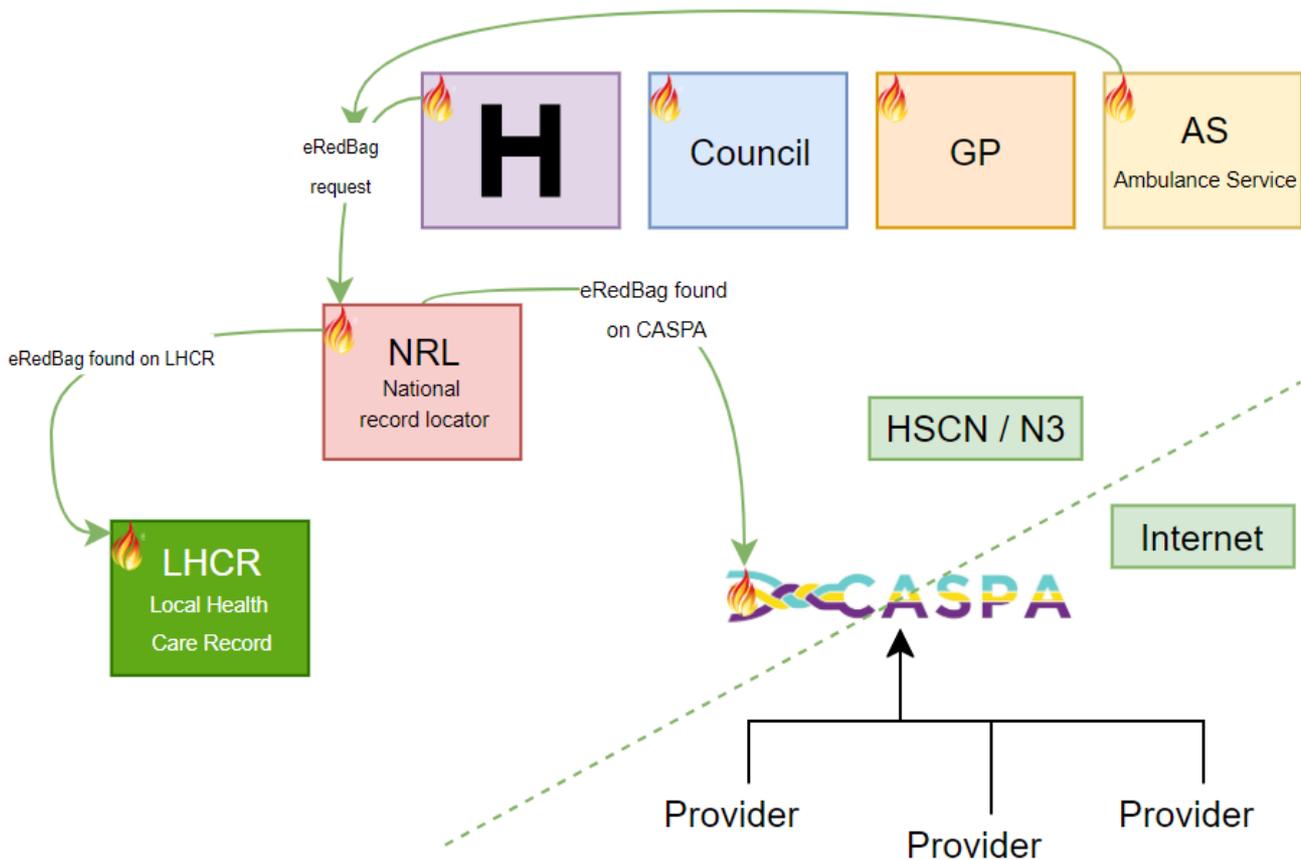
For CASPA, being able to store Profiles in the LHCR would mean that these become available to all systems that have access to that LHCR instantly. Looking up to see if a person has a LHCR record would be done in the NRL and once we have the location of that latest LHCR we could publish any piece of information, using the appropriate profile for that person.

Example for how the eRedBag might work using LHCRs



1. A CASPA member would POST to a CASPA end point the information required for the profile
2. CASPA would look up on the NRL to see if the person has a LHCR
 - a. If person has a LHCR:
Profile stored in LHCR
 - b. If a person doesn't have a LHCR (this should reduce over time)
Profile stored in CASPA FHIR server
3. NRL pointer added to location of eRedBag Profile

Example for how the eRedBag might be fetched when Patient admitted to hospital



1. Hospital / Ambulance Service check NRL for eRedBag profile
2. NRL finds a record and provide link to either:
 - a. LHCR server
 - b. CASPA server

Once we have built the flow for eRedBag we can use the same process to update/provide all sorts of Profiles, eg: Weight, Height, NoK, Blood Pressure, Care plans. Making the information available to GP's, councils and other health care systems instantly.



Organisation Data Service (ODS)

In order to exchange data with other NHS systems, a system needs to be addressable, which is done using an ODS identifier. More information about the ODS including resources for developers is available here: <https://digital.nhs.uk/services/organisation-data-service/guidance-for-developers>.

The Next Steps for CASPA

Interested CASPA members will continue the demonstration work ongoing with Sutton CCG, but will also identify other CCGs with whom to implement interoperability demonstrators.