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CTP\_Input\_Data\_Use\_Case\_Consume\_GP\_Held\_Record

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Glossary of Terms

|  |  |
| --- | --- |
| Term / Abbreviation | What it stands for |
| Actor | Role or system involved in the system  |
| CTP | Clinical Triage Platform |
| Extend | A generalization relationship where an extending use case continues the behaviour of a base use case when certain conditions are met. |
| FYFV | Five Year Forward View |
| Generalize | A relationship which indicates when something is a subset of some other element.  |
| GP | General Practitioner  |
| GPSoC | GP System of Choice |
| Include | Also known as a “Uses” relationship is a generalization relationship denoting the inclusion of the behaviour described by another use case, where one use case has a dependency with another use case that it triggers or uses. |
| Input Data | Information sourced from systems and databases external to the CTP for use within the CTP. |
| PIA | Privacy Impact Assessment  |
| Post-Condition | The state of an element after the use case is acted on. |
| Pre-Condition | The state of an element of the system before the use case occurs. |
| Trigger | The event or action that starts the process. Usually the result of an input into the system or a time-based event. |
| UEC | Urgent and Emergency Care |

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# Introduction

UC02: Consume GP held Patient Data

**Type:** Business Use Case

**Level:** Medium Level (Mid-level business process with sub-processes)

**Type:** Base use case/extending/included/generalised/specialised

## Business Context

### Brief Description

The Clinical Triage Platform programme seeks to improve the triaging capability in Urgent and Emergency Care settings by providing tools and services to support next generating triaging capability better suited to address individual patient needs. Patients are currently triaged without a view of their medical history, leading to triage that is said to be too generic. In order to triage patients effectively and efficiently, the triage platform requires a Clinical Decision Support System (CDSS) that can support personalisation of the triage process by consuming and considering patient data from various sources.

The most viable source of patient data is the GP held Detailed Patient Record, which holds the most comprehensive collection of a patient’s medical history, current medications and at times may include a care plan for specific patient needs such as diagnosed chronic conditions.

In this use case we propose that the CTP CDSS will consume available patient information from the Detailed Patient Record held in the patient’s GP system.

The data that the CTP CDSS access will be transient, as patient conditions change from day to day. Therefore, there would be not benefit in holding patient data on CTP as the patient’s condition can change quickly and the data will become out of date. This means that in this use case is only concerned with real time access of the patient record, at the point of triage by a clinician.

### Business Goals and Benefits

Current 111 service providers have raised the requirement to access patient data during triage. They have stated that clinicians and patients would benefit greatly from the former having access to the patient’s history to help them understand the needs of the individual within the collective patient population.

The FYFV states that the patient population in England is too diverse for a ‘one size fits all’ care model to apply everywhere, and that the NHS has to keep up with changes in patient healthcare needs and preferences. This can be achieved by personalising triage by using available information about the patient.

There are many aspects to patient care, and accordingly there maybe patients with many different types of records about their care. These would include hospital discharge records, pathology test results, and information regarding diagnosed chronic conditions and the related management or treatment plans. Due to the nature of urgent care especially in the 111 and IUC CAS space, clinicians fielding calls from an ever changing base of patients will not be able to learn each patient’s full medical history within the brief time allotted to triage. It has been suggested that an intelligent responsive triage system that can consume the patient data could address this shortcoming and improve the ability to provide personalisation of triage for each patient interaction.

By allowing the system to consume patient data in a meaningful way, the burden for clinicians to wade thought lengthy patient records could be alleviated. A system that can accept patient records as input, apply some logic to it and subsequently modify the clinical assessment of the patient is anticipated to have the following benefits:

* A more appropriate disposition will be recommended
* Reduction in risk of under-triage and over-triage.
* Optimise the sign posting of patients to the most appropriate end point taking into consideration patient specific healthcare history and current concerns.
* Clinicians will potentially spend less time on triage, by utilising available system intelligence to better inform their triage decisions.

For this use case emphasis is on accessing the GP held patient data, although similar principles and considerations would apply to patient data sourced from any other systems.

### Business Area

The business area being modelled in this Use Case is the Consumption of GP Held Input Data. The Input data stream of the CTP programme also lends itself discussion in relation to understanding the interoperability requirements and standards required to facilitate local and cross-boundary access of patient records in order to effectively support patients across the nation.

### System under Design (SuD)

A Clinical Decision Support System (CDSS) will form a core part of the CTP and will be used to support Clinicians and Non-Clinicians in triaging patients, taking into consideration known facts about the patient’s health. The CTP CDSS will primarily need access to patient information held on GP systems. The CTP CDSS and GP systems will need to communicate in a manner that enables system driven access to GP held patient data in a format that can be consumed by the CDSS, resulting in some useful output; such as:

* System generated alerts flags indicating potential risks relating to the patient’s health (e.g. indicating that a patient has a long-term condition that need to be considered in their triage)
* Update of the triage path for each patient using the data, e.g. prepopulating answers to certain questions using known information e.g. current medications; however, clinician may still be required to verify the information especially if it is relevant to the triage.

Using patient data to improve triage is not a new concept with some 111 service providers having previously provided patient data to their clinicians for triage purposes. Data sharing between GPS and 111 service providers has been achieved in the past but it has been limited to local solutions. The CTP approach is unique in that it is an endeavour to provide integration with GP data sets on a national scale, and it also introduces the consumption of patient data, which is an entirely new concept.

A standardized method of communication such as GP connect APIs will be used to facilitate access to GP held data for direct patient care. GP connect defines standards for accessing structured data using the FHIR protocols. Structured data can be consumed by the CTP CDSS and used to directly impact on the information required for clinical triage: <https://nhsconnect.github.io/gpconnect/accessrecord_rest.html>. GP connect look-ups are driven by the patient’s NHS number. Record retrieval will not be possible if the patient does not have a NHS number or if the NHS number is invalid or erroneous.

## Actors

### Primary Actors

Clinician

### Secondary Actors

Patient

GP system

## Triggers

Clinician requests patient consent to access the GP held Detailed Patient Record.

## Pre-Conditions

* Patient has gone through identification verification including retrieving their NHS Number.
* A Clinician is engaged in patient triage at that point in time, talking to a patient or their representative.
* The healthcare professional has relevant access and permission to access the patient’s record.

## Post-Conditions

### On Success

* Patient data is retrieved and consumed by the CDSS.
* Access and use of the data is recorded for auditing purposes

### On Failure:

* Triage continues without consideration of the GP held patient data.
* Declined or failed request for access to the patient data is recorded for auditing purposes.

### Guaranteed:

* The patient is triaged through the use of the CTP CDSS tool.

## ‘Includes’ Use Cases

Access Patient Record <<includes>> Obtain Patient Consent.

Consume GP Held Patient Data in Triage <<includes>> Call integration API.

Perform Personalised Clinical Assessment <<includes>> Consume GP Held Patient Data in Triage.

## ‘Extends’ Use Cases

Consume GP Held Patient Data in Triage <<extends>> Access Patient Record.

## Local View Use Case Diagram



**Figure 1 - Use Case Consume Patient Data**

# Flow of Events



**Figure 2: Input Data Sequence Flow**

| Basic Flow  |
| --- |
| **Flow Identifier:** Consent Given  |
| **Step** | **User Action** | **System Response** (optional) |
| Trigger | Clinician selects system option indicating that he/she wants to access GP held patient data. | * Prompt clinician to record patient consent and reason for accessing data.
 |
| 1 | Clinician requests permission to access GP held patient data from patient  |  |
| 2 | Patient gives consent |  |
| 3 | Clinician records consent in system | * Record that consent was obtained and the reason for accessing data.
* Calls the integration API to
	+ Retrieve and displays the GP held Patient Record.
	+ Retrieve and apply structured data items to personalize the triage.
* Updates triage based on patient data.
* Generates applicable patient risk flags and alerts.
 |
| 4 | Perform Personalized Triage | * Dynamically consume patient data in triage logic, in relation to responses provided by the patient during triage.
* Raise flags and alerts as and when required.
 |
| 5 | Clinician completes triage. | * Integration link is disconnected
 |
| **End** | **Use Case Ends** |  |

| Alternative Flows  |
| --- |
| **Flow Identifier: 2a** Patient is unable or unwilling to consent but there is urgent justification for accessing the patient record.  |
| **Step** | **User Action** | **System Response** |
| 2a: | Patient is unable to consent (e.g. Patient is cared for or has impaired speech, patient is delirious at that time) |  |
| 2a1 | Clinician determines that the patient is unable to consent, and opts to proceed without patient consent | * Prompt clinician for reason for proceeding without consent.
 |
| 2a2 | Clinician records a consent override in the system  | * Record that consent was overridden.
* System calls for patient data and displays the GP held Patient Record.
 |
| 2a3 | Perform personalized triage | * Dynamically consume patient data in triage logic, in relation to responses provided by the patient during triage.
* Raise flags and alerts as and when required.
 |
| 2a4 | Clinician completes personalized triage. | * Integration link is disconnected
 |
| **On Exit** | **Use Case Ends** |  |

| Alternative Flows  |
| --- |
| **Flow Identifier: 2b Patient** is not willing to consent /refuses to give consent and there is not urgent justification for accessing the patient record. |
| **Step** | **User Action** | **System Response** |
| 2b: | Patient is not willing to consent /refuses to give consent |  |
| 2b1 | Clinician records in the system that consent was declined  | * Record that consent was declined.
* Close the integration session.
 |
| 2b2 | Perform non-personalized triage |  |
| 2b3 | Clinician completes non-personalized triage. |  |
| **On Exit** | **Use Case Ends** |  |

| Exception Flows  |
| --- |
| **Flow Identifier:** Patient Record Not Accessible |
| **Step** | **User Action** | **System Response** |
| 4a | Patient record not found (New Patients, incorrect patient registration, invalid NHS number) | * Records that record could not be found
* Alert clinician that the record is not found. Then close integration session.
 |
| 5a | Integration link is disrupted | * Integration link is disconnected
 |
| **On Exit** | **Use Case Ends** |  |

# Activity Diagram

 

Figure 3 – Input Data Consumption Activity Diagram

# Entity Diagrams



**Figure 4 – Entity Relationship Diagram**

# Data Items

Of the many data items that could be pulled from the GP records, the following have been identified as useful and relevant to triaging a patient in a UEC setting starting with the top 6 rated as the most important:

* Top six:
	+ Allergies / Adverse Reactions
	+ Care Plans
	+ Child Protection/Adult Safeguarding information
	+ Conditions/Problems
	+ DNACPR decisions/ End of life Care Plan
	+ Medications/ Prescriptions
* Other relevant patient information:
	+ Admission Avoidance Notes
	+ Appointments
	+ Communication preferences
	+ Reasonable Adjustments for Disability Needs
	+ Electronic Frailty Index (eFI)
	+ Encounters
	+ Family history
	+ Immunisations
	+ Investigations, Diagnostics and Procedures
	+ Referrals
	+ Vital Signs
	+ Point of Care Testing
	+ Elected pharmacy

# Open Issues

**Assumptions**:

* That GP held patient data will be accessible to all host systems.
* Data sharing will be facilitated across CCG boundaries and a request /query for data across CCGs will be honoured.
* Any applicable cross charging between CCGs in relation to patient care will be supported through the relevant agreements.
* Rules in the integration service will be respected by the CTP, e.g. sealed records are not shared through GP connect but the clinicians will be made aware that they exist.
* The consumption of data will apply to the clinical triage activities driven by the Clinician as they are more likely to a have RBAC that allows them to view GP held patient data.
	+ If the system needs to use patient data in non-clinical triage modules, we will have to ensure the right IG assurance measures are in place.

**Notes**:

Patient data is held on GP System of Choice (GPSoC). The GPSoC framework provides IM1 interfaces for data sharing between GP practices. The IM1 interfaces were explored as an option for CTP integration for access to patient data, but the IM1 interfaces proved to be geared more to GP Practice usage and specific functions that do not meet the needs of the CTP. However, this assessment may be revisited if required. The findings were as follows:

* Practice Interface - provide real-time information about Patients – but restrictive as services exposed by practice interfaces are available to consumers within the same Practice and in some cases from within the same workstation
* Bulk Data Interface – for scheduled data imports, not suited for direct patient care e.g. overnight incremental data imports that could be up to 24hrs old at the time of triage
* Patient Interface – for patients to access their own records. It uses patient logins to authorise access to data so it is not ideal for CTP. Also see Questions below.

Therefore, it has been ascertained that access to patient records in GPSoC can be achieved through GP Connect.

**Questions**:

* As this use case relates to use of Patient Data which is considered confidential, measures must be taken to ensure appropriate access and usage of patient data. Information governance considerations relating to the automated use of input data have been raised through the PIA, and include privacy and information security, permissible use of patient data, data quality and data provenance and ownership. The relevant measures and decision will be taken to ensure information governance considerations are addressed. Some of the questions raised in requirements elaboration and PIA development include the following:
	+ What are the implications of introducing a details patient record to an environment that previously did not have access to it:
		- Existing information about patients will be used in a new way, how will privacy and data security be assured.
		- Will the system potentially be providing health information to healthcare staff who previously did not have access to view patient data?
		- Use of patient data is likely to raise privacy concerns or expectations, what measures will be taken to provide assurance around privacy?
	+ What are the implications of automated consumption of data:
		- Is explicit consent required to be logged for the system using the data, or is it implied when the clinician obtains consent for accessing the record?
		- Will the automated pre-population of triage questions pose a risk of divulging patient data to people who otherwise would not have access to it, such as call handlers?
		- Would non-clinicians be allowed to ask the patient for consent to access their GP held data in order for patient data to be consumed by the CDSS as part of non-clinical triage?
		- How will the patients be assured that their data will be used appropriately?
		- Access to Health record information will be used to triage people to an appropriate level of care, so system will change what care is suggested for patients based on their medical information and presenting systems (currently only their presenting symptoms are considered). If health records will be automatically consumed within triage algorithms, how will data quality be assured?

# Information Items

|  |  |  |
| --- | --- | --- |
| **Ref** | **Title** | **Link** |
|  | GP Connect Overview | <https://digital.nhs.uk/GP-systems-of-choice/GP-connect>  |
|  | Introduction to the GP Connect Access Record REST capability | <https://nhsconnect.github.io/gpconnect/accessrecord_rest.html>  |
|  | NHS Digital data dictionary | <http://www.datadictionary.nhs.uk>  |

# Business Rules

|  |  |  |
| --- | --- | --- |
| **Ref** | **Title** | **Link** |
|  | Only authorized clinicians can trigger the CDSS to access and consume GP held Patient Data. | ???? |
|  | Patient Data may only be viewed and utilized in direct patient care | ???? |
|  | Patient consent must be obtained before the system can access and consume patient information. | ???? |
|  | NHS England Data Protection Policy | <https://www.england.nhs.uk/wp-content/uploads/2016/12/data-protection-policy-v3-1.pdf>  |