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Technical Requirements Specification for Digital Interoperability Platform – Direct Care and Medical Examiners API service

Document management

Revision History

Version	Date	Summary of Changes
V1.0	2019	Initial draft agreed when the Direction was approved
V1.1	22/11/2023	New format for DIP Direction services, with updates since “go live” and also developments captured in v1.5 DPIA
V1.2	29/11/2023	Technical author review – adherence to NHS England house style and consistency
V1.3	29/12/2023	Following review by Directions team
V1.4	12/2/2024	Following final approval review by Directions team
V1.5	8/5/2024	Enabling use by Medical Examiners from 9 September 2024

Reviewers

This document must be reviewed by the following people:

Reviewer name	Title / Responsibility	Date	Version
REDACTED	Direct Care API Technical Architect	5/12/23	V1.2
REDACTED	Direct Care API Project Manager	5/12/23	V1.2
REDACTED	Technical Author	5/12/23	V1.2
REDACTED	Principal IG Specialist	28/12/23	V1.2, V1.3
REDACTED	Deputy Director IG Delivery (Digital & Operations)	12/06/2024	V1.5
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Approved by

This document must be approved by the following people:

Name	Signature	Title	Date	Version
REDACTED		IAO	9/9/2024	V2.0

Glossary of Terms

Term / Abbreviation	What it stands for
API	Application programming interface – the set of technical components enabling information to be exchanged (interoperability) between systems.
Capability	The description of a set of business requirements being delivered by GP Connect APIs.
Consumer	Direct Care APIs consumers are the systems that develop to access data via the GP Connect APIs.
Controller	Role identified in the Data Protection Act for the persons/organisations carrying legal responsibility to ensure that the data in their control is governed in accordance with the act. A controller determines the purposes and means of processing personal data.
COPI	Control of patient information (COPI) notice
DIP	Digital Interoperability Platform
DPIA	Data Protection Impact Assessment
DVC	Deployment verification criteria
FHIR	Fast Healthcare Interoperability Resources – open standard for healthcare data models and transfer resources https://www.hl7.org/fhir/overview.html (part of the API specification).
FRA	Full Rollout Approval
GDPR	General Data Protection Regulation
GP principal system suppliers	The GP principal system suppliers are: EMIS, TPP, Vision and Medicus.
IAO	Information asset owner
IP/Client IP	IP is the network address of a computer.
MESH	Message Exchange for Social care and Health
NDSA	National Data Sharing Arrangement
PDS	Personal Demographics Service is the national electronic database of NHS patient details such as name, address, date of birth and NHS Number (known as demographic information).
PII	Personally identifiable information
Processor	The processor is responsible for processing personal data on behalf of a controller. If you are a processor, the GDPR places specific legal obligations on you. For example, you are required to maintain records of personal data and processing activities. You will have legal liability if you are responsible for a breach.
Provider	Direct Care APIs providers are usually, but not limited to the principal GP clinical systems that provide the registered GP patient record data for the GP Connect APIs to consume.
PRSB	Professional Records Standards Body
Receiver	The recipient of Send Document and Update Record.

SCAL	Supplier Conformance Assessment List – an assurance document that is completed by a consumer supplier to show how they meet the requirements detailed in the GP Connect specifications.
SDS	Spine Directory Service is an endpoint and identifier directory for Spine and Spine-connected systems, containing information on accredited systems, services, and NHS registered users.
Sender	The service sending an update via Send Document or Update Record back to the registered GP practice.
SME	Subject matter expert
SSP	Spine Secure Proxy – the set of NHS 'Spine' functions which provide security and validation of consumer-provider API interactions.

Document Control:

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Purpose of document

This document sets out the technical requirements for use of the Digital Interoperability Platform (DIP) as the legal basis for operation of the Direct Care API service. It should be read alongside the [NHS Digital \(Establishment of Systems: Digital Interoperability Platform\) Directions 2019](#) issued by the Secretary of State for Health and Social Care.

Introduction

This service is known as GP Connect to the wider NHS and Direct Care API within NHS England. It is part of the Digital Interoperability Platform initiative which includes Record Locator, Events Management and Reasonable Adjustments. These services enable sharing of parts of the local clinical record between clinical teams and organisations using national infrastructure and services.

Innovation of the Direct Care API service continues. The Data Protection Impact Assessment provides details of this important activity. It is available on the NHS England GP Connect / Direct Care web pages. These pages frequently change, the document can also be requested¹.

It also provides a statement of current functions, current developments and lays a road map for future use cases. This technical requirement specification captures the developments in the DPIA.

GP Connect is available for use by Medical Examiners from 9th September 2024 for their statutory purposes for reviewing deaths². An exception to the limitation of use of GP Connect for direct care is approved by the Department of Health and Social Care. For convenience, in this document, whenever direct care is stated, this includes use by Medical Examiners. The legal basis for the use of GP Connect by Medical Examiners to perform their functions is documented in the Data Protection Impact Assessment available on the NHS England GP Connect web pages.

¹ How to contact NHS England

Our contact centre is available 9am to 4.30pm Monday to Friday, except Wednesdays when we open at the later time of 9.30am. We are closed on bank holidays. Members of the public, patients, and their representatives can contact our customer contact centre.

You can contact us by:

- Phone 0300 311 22 33
- Relay UK for people who are hearing or speech impaired: dial 18001 followed by 0300 311 22 33. More information is available on the Relay UK website.
- British Sign Language (BSL) users can contact us via BSL video interpreter Monday to Friday from 9am to 4.30pm.
- Email england.contactus@nhs.net
- Writing to NHS England, PO Box 16738, Redditch, B97 9PT

² By virtue of Coroners and Justices Act 2009, Schedule 21 Minor and Consequential Amendments para. 29 and The Medical Examiners (England) Regulations 2024 section 8 for the supply of information. Under the Coroners and Justice Act 2009 (Commencement No. 22) Order 2024 ([paragraph 3n](#)), from 9 September 2024 medical examiners were added to the list of people who can apply for access to a health record ([schedule 21 paragraph 29](#)).

Direct Care APIs have been in use since 2019. The service is a set of enabling products, summarised as:

- **GP Connect: Access Record (HTML)** – enables a read-only view of a full patient's record to health and care staff directly involved with their care and for Medical Examiners reviewing a death under the Coroners and Justice Act 2009.
- **GP Connect: Access Record (Structured)** – enables health and care staff to view patient GP record information alongside other health and care information related to that patient to form part of a truly holistic patient health and care record.
- **Update Record** – health and care staff can write back and update the patient record held by the GP. The initial use case is only supporting pharmacy.
- **Access Document** – health and care staff (using consumer supplier systems) can access a document which is part of a patient record as held in the provider supplier system.
- **Send Document** – enables health and care staff to send a consultation summary of a patient encounter back to the patient's registered GP practice. The summary is sent in PDF format.
- **Appointment Management** – enables health and care staff (using a consumer supplier system) to book an appointment for a patient whose record is held on the provider supplier system.
- **Patient Facing Services** – these enable parts of the GP record to surface in the NHS App.

This document covers the first six enabling products of the Direct Care API service. The seventh, Patient Facing Services, has a separate technical requirement specification because it uses a different set of technologies.

Recipients

The recipients are NHS and other care organisations that use Direct Care API services to exchange patient information for the purpose of direct care and for Medical Examiners to review a death. One of the developments in progress is to enable patient data with private care providers. There is a National Data Sharing Arrangement which lists types of organisations and the specific sharing services: [National Data Sharing Arrangement for GP Connect](#).

System delivery function

Direct Care APIs products can help people share, view or act on information that they are legally entitled to access but cannot do so easily because they are using different IT systems. Direct Care APIs can only be used for direct patient care and for Medical Examiners to review a death, not for planning or research. Direct patient care is defined as a clinical, social, or public health activity concerned with the prevention, investigation and treatment of illness, and the alleviation of suffering of individuals. It includes: *supporting individuals' ability to function and improve their participation in life and society making sure*

care and treatment is safe and high quality through local audits, managing when things go wrong, and working to improve satisfaction by measuring patient outcomes³.

Technical architecture of the Direct Care API service

Below is a diagram (Figure 1) that depicts an overview of the technical architecture of the Direct Care API service. The diagram can be summarised in the following points:

- Direct Care API service enables information about a patient to be accessed by a clinician in a GP practice or other setting from the clinical system in their registered GP practice (see the three capabilities above) as well as Medical Examiners reviewing a death.
- Direct Care API service enables information about appointment availability within a GP practice (depending on the structure of the primary care setting – this may not be the patient’s registered practice) to be assessed by clinical admin staff from other GP practices and care settings (for example, a 111 call centre or an urgent care centre). GP Connect allows appointments to be booked, amended, or cancelled for a patient, and a list of future appointments can also be viewed.
- The patient information passes through NHS Digital infrastructure but is not stored.
- NHS England stores audit information on the message flows to enable service support. A subset of this audit information includes a patient’s NHS Number.
- NHS England (SSP) validates that the message only flows between (GP or other) organisations.

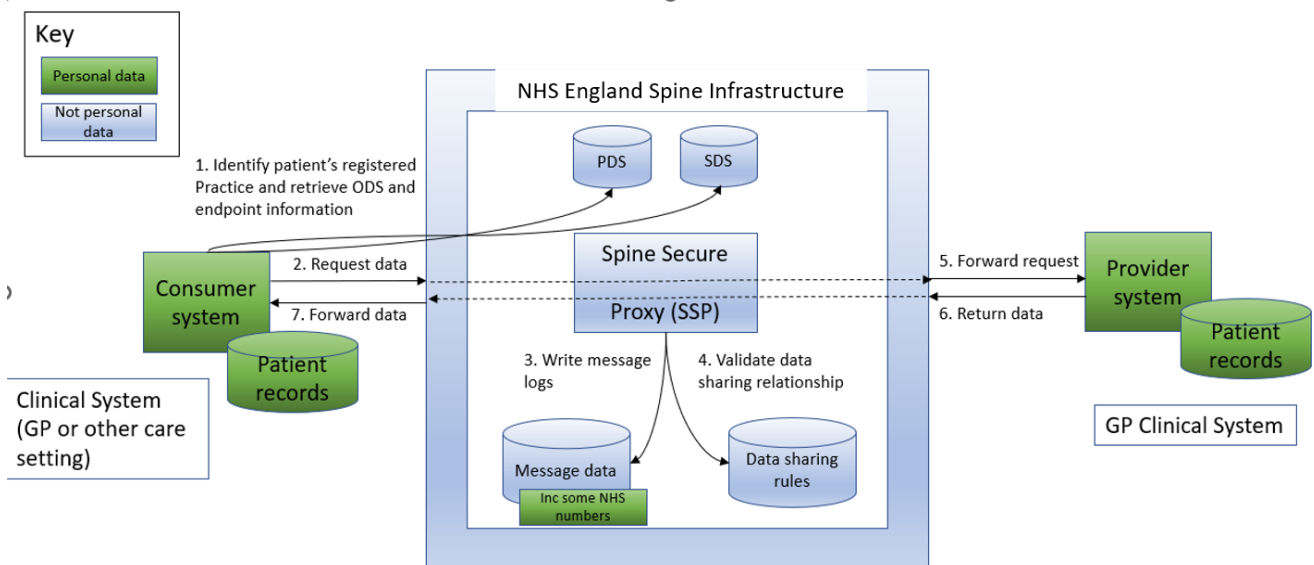


Figure 1 – Technical Architecture of the Service using the SSP (HTML, Structured and Appointment Management capabilities)

The diagram (Figure 1) and description above relate the Direct Care API service specific data flows. However, in addition to these flows, the Direct Care API service requires a consuming system to have conducted two additional requests for data on Spine before making a request for Direct Care API service data:

³ National Data Guardian report Information: To Share or not to Share? The IG Review 2013.

- 1) The first is a request to the Patient Demographics Service (PDS) on Spine to confirm the identity of the patient. This involves the consuming system providing demographics (NHS Number and/or patient name, address, date of birth and gender) to Spine, and receiving in response a complete PDS demographic record for the patient, as well as details of the patient's registered GP practice.
- 2) The second is a request to the Spine Directory Service (SDS) to determine the technical interface address of the target GP practice. This involves the consuming system providing the practice's ODS code and, in response, receiving the technical interface address.

Curating the Direct Care API Capability specifications

The programme has worked with the GP principal system suppliers, other NHS programmes, clinicians and subject matter expert (SME) groups to define (i) the standard dataset structures ([FHIR](#) profiles) used as part of the Direct Care API service capabilities to carry the required information, and (ii) the business rules determining population of the profiles. This work has involved several steps.

The programme conducted analysis on the use cases gathered for the Direct Care API service capabilities. A logical model was created from this analysis that contained detailed records of the data items that the business required.

The screenshot shows the NHS Health Developer Network API Hub website. The header includes the URL 'developer.nhs.uk' and navigation links: Library, Download & Data, API Hub, Test centre, Learn, Community, Apps. The main banner features a circular logo with two arrows and the text 'API Hub Explore and Make use of Nationally Defined Messaging APIs'. Below the banner, a breadcrumb trail reads 'You are here: Home > APIs'. The main content area is titled 'FHIR APIs' and describes 'ReST and Messaging APIs conforming to the HL7 FHIR standards - covering national systems and also profiles for use in local integration.' The page displays a grid of API cards, each with a title, description, and status tags (Alpha, Beta, Live, Release Candidate, Experimental).

API Name	Description	Status
FHIR Reference Server	This FHIR server acts as a reference server for all nationally defined FHIR profiles and value sets for use across a range of local and national FHIR implementations.	FHIR API Reference Server (Beta), FHIR Policy (Alpha)
GP Connect	GP Connect aims to support better clinical care by opening up information and data held within GP Practice IT systems for use across health and social care.	List of specification versions: GP Connect 1.1.0 (Beta), GP Connect 0.5.0 (Release Candidate)
NHS e-Referral Service	The NHS e-Referral Service has released a range of Application Programming Interfaces (APIs) and Ecosystem resources to support third party solution integration.	Overview, Authentication and Authorisation (Live), Clinical Referral Information (Live), ValueSet (Live), Service Search (Alpha), Clinical Triage (Alpha), Referral Request (Alpha), Referral Management (Alpha), FHIR Implementation Profiles (Draft C), FHIR Implementation Profiles (Draft D), Coming Soon (Experimental)
Clinical Documents	FHIR Profiles for the exchange of clinical documents.	Document Header (Alpha), End of Life Care Document (Alpha), Social Care (Beta)
Diagnostic Data Services	Diagnostic Data Services report message	(Alpha)
FGM	Messaging for the national Female Genital Mutilation Risk Indication System	Version 1 (Release Candidate), Version 2 (Beta)
National Record Locator Service	The National Record Locator Service aims to provide healthcare professionals and providers with a facility to identify and locate 'local' patient records which have been registered on the Service	(Beta)
National Data Opt-Out	The National Data Opt-out Programme has defined an API to capture a patient's preferences for use of their data, which will be held in a national data store on the Spine. Initially, this API will be used by a new national portal, but in future it will be made available to other consumers to manage these preferences for a patient.	(Alpha)
Visitors and Migrants	An API enabling accredited supplier-systems to request the Spine for the chargeable status indicator for a patient.	(Beta)
Organisation Data	The data provided via this API is taken from the data managed by the Organisation Data Service (ODS) within NHS Digital.	ODS FHIR API (Beta), ODS ORD API (Non-FHIR) (Beta)

Figure 2 - NHS Health Developer Network

The team then analysed what information currently exists within the principal clinical systems and how this is exported to support other NHS England projects such as: GP2GP, Summary Care Record (SCR) and Electronic Prescription Service (EPS). The programme also considered future needs of ongoing NHS England projects to ensure we are as in line with these ongoing efforts as possible.

This analysis was used to create draft profiles that were then discussed in detail with the foundation clinical system suppliers to ensure their feasibility. Once this was complete, the profiles were taken through a curation process by a multi-disciplinary team that involved representatives from many organisations. These included: primary and secondary care clinicians, pharmacists, terminologists, data standards, clinical informaticians that had been involved in creating the base FHIR profiles, clinical safety representatives and representatives from primary and secondary care clinical systems suppliers, and PRSB.

Curated specifications are subject to internal review and will be published as Beta for GP suppliers to develop. However, consumer suppliers will be required to support a first of type for GP provider system suppliers, which will be planned and supported by implementation leads, project managers and consumers, and monitored until the deployment verification criteria (DVC) have been met. Continued monitoring and analysis will support requirements for live services to grant Full Rollout Approval (FRA).

The following sections of this document differentiate between data items that are held by NHS England and data that flows through NHS England infrastructure and does not reside nationally. Data specifications are provided - [GP Connect specifications for developers](#) .

Data processing

These services enable sharing of parts of the local clinical record between clinical teams and organisations using national infrastructure and services.

Categories of data

As with any solution, there are multiple groupings of data:

1. Data in-transit through the service:
 - patient⁴ and staff data⁵– can be any data, including unique identifiers
 - this includes patient special category
 - online identifiers
2. Data processed by NHS England for security, configuration and configuration backup:
 - patient and staff data – limited to unique identifiers
 - technical data such as Client IP⁶
 - system credentials to enable secure access to the APIs
3. Data for the Digital Onboarding Service – enabling API consumer suppliers to self-serve as much as possible during onboarding, assurance, and configure their technical connections to NHS England:
 - API publishers will also use this to manage the approval of their API consumers

⁴ **Patient data** – the NHS Number is used in some of the message URLs transferred over the SSP to inform the provider system whose information is required by the consumer system. The URL is stored in the SSP Audit Log.

⁵ **Practitioner information** – the details of the practitioner involved in the consultations or appointments is used in some of the message URLs transferred over the SSP to inform the provider system whose information is required by the consumer system. The URL is stored in the SSP Audit Log.

⁶ **Direct Care APIs user** – IP address of device used by the user when interacting with Spine. This is stored as part of the audit log of which organisations have passed messages using GP Connect.

NHS England processing

Data in transit through the service:

- Data is encrypted end to end through the service. However, at the gateway level, it must be decrypted (in transit) for the technical functions to be carried out.
- On occasion NHS England might be requested to look at live traffic for fault diagnosis. The platform significantly limits the amount of access.
- No special category data is ever stored.

Legal basis

Data is processed pursuant to the [NHS Digital \(Establishment of Systems: Digital Interoperability Platform\) Directions 2019](#). The data to be processed to deliver the services includes personal data and is subject to the UK GDPR.

Where a third-party supplier is onboarded for use of a Direct Care API service, that third party:

- signs a connection agreement
- ensures care organisations, as customers, are aware of the end-user organisation acceptable use policy (they sign the NDSAs)

NHS England performs certain functions as part of the Direct Care API service which means data for security countermeasures. Under UK GDPR, it would be considered as a joint data controller with the Direct Care API provider, rather than purely as a data processor. For example, NHS England has significant control over the use of transactional data, an example of this is assessment of suppliers as they seek to use specific Direct Care API services, the process is called “on-boarding”.

Consultation

Use of GP Connect and Direct Care API services would not be possible without agreement and support of healthcare professionals. The team manages expectations of national stakeholders and consults on changes to the service. Major developments only proceed once agreement is reached – the DPIA provides details of this important activity (as stated on page 5, this is hosted on the NHS England GP Connect website and can also be requested directly).

Change control process

General changes to this specification will be managed by NHS England.

Significant changes such as new categories of publishers/recipients and purposes (eg non-health related and social bodies) will be managed by NHS England in conjunction with the Department of Health and Social Care to ensure such changes are aligned with the Directions.

For any change, an update to the Direction Specification will be published.