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**Genomics Medicine Service Request/Report workflow**

Document management

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Reviewers

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| Name | Signature | Title | Date | Version |
| Ravi Natarajan |  | Technical Architect |  |  |
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Glossary of Terms

|  |  |
| --- | --- |
| Term / Abbreviation | What it stands for |
| GMS | Genomic Medicine Service |
| GLH | Genomic Laboratory Hub |
| GEL | Genomics England Laboratory |
| FHIR | Fast Healthcare Interoperability Resources |
| DPYD | Dihydropyrimadine Deyhydrogenase protein coding gene |
| REST | Representational State Transfer |
| PDS | Patient Demographics Service |
| IG | Implementation Guide |
| HL7 | Health Level 7 |
| PDF | Portable Document Format |
| EHR | Electronic Health Record |

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# Introduction

This document outlines an example Genomic Medicine Service using a workflow broker task management pattern for HL7 FHIR R4 ([Workflow-management - FHIR v4.3.0 (hl7.org)](http://hl7.org/fhir/workflow-management.html#optionh)), implemented using a RESTful approach. A FHIR Messaging paradigm has also been developed but is not included within this document.

The document outlines the resources used, from the HL7 R4 UK Core and the international R4 FHIR standards, which may need to be profiled for use in a genomic testing pathway. The document also presents a set of example requests and responses to a GMS broker for the DPYD testing use case, attached in Appendix A.

This document does not cover authentication or integration with other services, e.g. SPINE or PDS. A minimal data set still needs to be agreed (including data needed for downstream send-away labs), at which point formal profiling and development of an IG and MessageDefinitions can begin. This may mean additional resources or integration with other national services will be required.

Genomic reports currently limited to PDF attachments in DiagnosticReport resources, as detailed in the scoping document in Appendix B, but further work will look at creating structured reports and their associated resources, utilising input from the Clinical Genomics working group and the Genomic Reporting IG.

Final ValueSets and Extensions for some elements still need to be defined e.g. genomic test status and somatic/germline categories of specimens. All endpoints, service urls and referenced resources used in examples are fictitious.

# FHIR Workflow Broker Pattern

The following pattern has been taken from the workflow management page on FHIR R4, linked above. The workflow broker is assumed to be the general architecture for the Genomic Medicine Service.

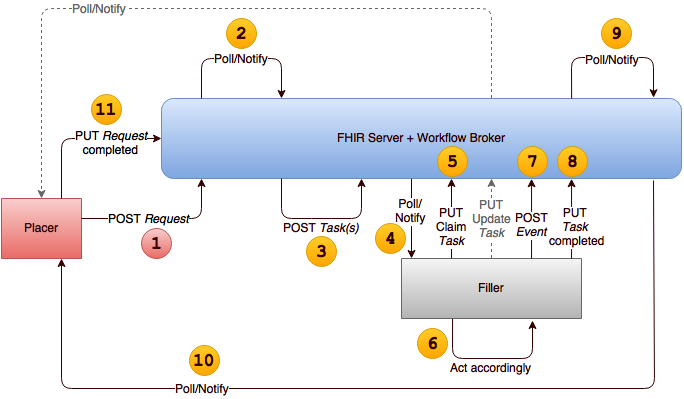


Figure 1: Workflow Broker Pattern Steps

The Steps from the generalised pattern can be applied to a Genomic Medicine Service in the following way:

1. A Placer system (e.g. EHR), POSTs a UKCore-ServiceRequest to a broker (e.g. central GMS orders repository)
   1. The ServiceRequest needs to link to a UKCore-Patient, UKCore-Practitioner, UKCore-Organisation etc.
   2. An associated Specimen will also need to be sent to the broker, linked to the ServiceRequest
   3. A UKCore-Consent should also be linked to the ServiceRequest for recording whether results can be used in research (defined as in scope for the programme).
2. The Broker notified of new unassigned request (without a Task resource) via a subscription
3. The Broker POSTs a Task to its own system, pointing to request resource, and seeking fulfilment from filler (UKCore-Organisation, in the case of the GMS, the Home GLH)
4. The GLH system polls or is notified of Task
5. The Filler PUTs update to Task to indicate it has been claimed/accepted
6. The Filler performs the requested tests/analyses, internal to LIMS (outside the scope of the central GMS), and updates (PUTs) Tasks as progress is made
7. The Filler POSTs a DiagnosticReport back to broker to record results (this implements the Event resource) once the analysis and interpretation has been performed
8. The Filler finally PUTs an update to its Task, changing the status to completed and pointing to UKCore-DiagnosticReport, which contains the PDF
9. Workflow broker subscribes to changes to Tasks for automated notification to placers
10. A Placer polls for completed Tasks (or is notified of completed Tasks)
11. The Placer inspects results and updates ServiceRequest via PUT to indicate completion.

# Included FHIR Resources

At a minimum, The following resources will need to be profiled to fully define the resources for the GMS:

1. Subscription [Subscription - FHIR v4.3.0 (hl7.org)](https://www.hl7.org/fhir/subscription.html) (NOT IN UK-CORE) – talk to John about placeholder process
   1. Extension assessed, demoted to NHSD if too specific
2. UKCore-ServiceRequest [HL7 FHIR® UK Core R4 | UK Core ServiceRequest - SIMPLIFIER.NET](https://simplifier.net/hl7fhirukcorer4/ukcoreservicerequest)
   1. Includes reference to UKCore-Patient, UKCore-Practitioner, UKCore-Organization (for both requesting Organisation and GLH performer),
   2. Optionally also Encounter (within which the ServiceRequest was created, Condition, Observation, DiagnosticReport (for reason reference) and Any supporting info.
   3. May also include Provenance
3. UKCore-Specimen [HL7 FHIR® UK Core R4 | UK Core Specimen - SIMPLIFIER.NET](https://simplifier.net/hl7fhirukcorer4/ukcorespecimen) (DRAFT)
   1. C&TA, UK FHIR community – 6-9 months
   2. Active doesn’t stop implementation for FoT
4. UKCore-Consent [HL7 FHIR® UK Core R4 | UK Core Consent - SIMPLIFIER.NET](https://simplifier.net/hl7fhirukcorer4/ukcoreconsent) (DRAFT)
   1. Need to confirm where in the workflow this will need to sit, e.g. will this be sent to the broker or will this be stored by GEL separately.
5. UKCore-Task [HL7 FHIR® UK Core R4 | UK Core Task - SIMPLIFIER.NET](https://simplifier.net/hl7fhirukcorer4/ukcoretask)
6. UKCore-DiagnosticReport (to include only PDF in stage 1, structured in later stages) [HL7 FHIR® UK Core R4 | UK Core DiagnosticReport - SIMPLIFIER.NET](https://simplifier.net/HL7FHIRUKCoreR4/UKCoreDiagnosticReport) (DRAFT)
7. Also to consider:
   1. FamilyMemberHistory [FamilyMemberHistory - FHIR v4.3.0 (hl7.org)](https://www.hl7.org/fhir/familymemberhistory.html) for genetic pedigree (NOT IN UK CORE)
   2. RelatedPerson [HL7 FHIR® UK Core R4 | UK Core RelatedPerson - SIMPLIFIER.NET](https://simplifier.net/hl7fhirukcorer4/ukcorerelatedperson)

The Following sections present the snapshot structure for each resource and present an example of each (which has been expanded as much as reasonably possible). The examples will be cut down or extended depending on the minimum dataset requirement from the GMS programme.

## Subscription

Text

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| {  "resourceType": "Subscription",  "id": "Subscription-TaskNotification-Example",  "status": "active",  "contact": [  {  "system": "email",  "value": "mft.genomics@nhs.net"  }  ],  "reason": "Notification of new tasks for Manchester GLH",  "criteria": "Task?owner=Organization/UKCore-Organization-RBV-Example",  "channel": {  "type": "rest-hook",  "endpoint": "https://mft.nhs.uk/nwglh/fhir",  "payload": "application/fhir+json"  }  } |

## Specimen (e.g. Blood Sample)

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| --- |
| {  "resourceType": "Specimen",  "id": "UKCore-Specimen-MichaelJonesBlood-Example",  "meta": {  "profile": [  "https://fhir.hl7.org.uk/StructureDefinition/UKCore-Specimen"  ]  },  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Specimen-MichaelJonesBlood-Example&quot; </p></div></div>"  },  "identifier": [  {  "system": "https://www.christie.nhs.uk/path",  "value": "Spec123456"  }  ],  "status": "available",  "type": {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "87612001",  "display": "Blood (substance)"  }  ]  },  "subject": {  "reference": "Patient/UKCore-Patient-MichealJones-Example"  },  "receivedTime": "2022-07-13T09:00:00Z",  "request": [  {  "reference": "ServiceRequest/UKCore-ServiceRequest-MichaelJonesDYPDRequest-Example"  }  ],  "collection": {  "collector": {  "reference": "Practitioner/UKCore-Practitioner-MaryLane-Example"  },  "collectedDateTime": "2022-07-11T09:00:00Z",  "quantity": {  "system": "http://unitsofmeasure.org",  "code": "mL",  "value": "2.5"  },  "method": {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "129300006",  "display": "Puncture - action"  }  ]  },  "bodySite": {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "14975008",  "display": "Forearm structure (body structure)"  }  ]  }  },  "processing": [  {  "description": "Populated when sample is processed"  }  ],  "container": [  {  "identifier": [  {  "use": "official",  "type": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/v2-0203",  "code": "ACSN",  "display": "Accession ID"  }  ]  },  "system": "https://www.christie.nhs.uk/path",  "value": "ASCN123456",  "assigner": {  "reference": "Organization/UKCore-Organization-RBV-Example"  }  }  ],  "type": {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "706067003",  "display": "Blood collection/transfer device (physical object)"  }  ]  },  "specimenQuantity": {  "system": "http://unitsofmeasure.org",  "code": "mL",  "value": "2.5"  }  }  ],  "condition": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/v2-0493",  "code": "SNR",  "display": "Sample not received"  }  ],  "text": "change code if sample condition changes"  }  } |

## ServiceRequest (e.g. Test Order)

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| --- |
| {  "resourceType": "ServiceRequest",  "id": "UKCore-ServiceRequest-MichaelJonesDYPDRequest-Example",  "meta": {  "profile": [  "https://fhir.hl7.org.uk/StructureDefinition/UKCore-ServiceRequest"  ]  },  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-ServiceRequest-MichaelJonesDYPDRequest-Example&quot; </p></div></div>"  },  "identifier": [  {  "system": "https://www.christie.nhs.uk/ehr",  "value": "LabOrder123456",  "assigner": {  "reference": "Organization/UKCore-Organization-RBV-Example"  }  }  ],  "instantiatesUri": [  "https://www.england.nhs.uk/wp-content/uploads/2020/11/1869-dpyd-policy-statement.pdf"  ],  "basedOn": [  {  "reference": "UKCore-CarePlan-PancreaticCancerPlan-Example"  }  ],  "status": "active",  "intent": "order",  "category": [  {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "108252007",  "display": "Laboratory procedure"  }  ]  }  ],  "priority": "routine",  "doNotPerform": "false",  "code": {  "coding": [  {  "system": "https://www.england.nhs.uk/publication/national-genomic-test-directories",  "code": "M219.3",  "display": "DPYD hotspot"  }  ]  },  "subject": {  "reference": "Patient/UKCore-Patient-MichealJones-Example"  },  "encounter": {  "reference": "Encounter/UKCore-Encounter-OncologyConsultation-Example"  },  "authoredOn": "2022-07-11T09:00:00Z",  "requester": {  "reference": "Practitioner/UKCore-Practitioner-DrLucyHale-Example"  },  "performer": [  {  "reference": "Organization/UKCore-Organization-699X0-Example"  }  ],  "reasonCode": [  {  "coding": [  {  "system": "https://www.england.nhs.uk/publication/national-genomic-test-directories",  "code": "363418001",  "display": "Malignant tumor of pancreas (disorder)"  }  ]  }  ],  "specimen": [  {  "reference": "UKCore-Specimen-MichaelJonesBlood-Example"  }  ]  } |

## Consent (e.g. for research)

Graphical user interface, application

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| --- |
| {  "resourceType": "Consent",  "id": "UKCore-Consent-MichaelJonesConsent-Example",  "meta": {  "profile": [  "https://fhir.hl7.org.uk/StructureDefinition/UKCore-Consent"  ]  },  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Consent-MichaelJonesConsent-Example&quot; </p></div></div>"  },  "identifier": [  {  "system": "https://www.christie.nhs.uk/ehr",  "value": "Consent123456",  "assigner": {  "reference": "Organization/UKCore-Organization-RBV-Example"  }  }  ],  "status": "active",  "scope": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/consentscope",  "code": "research",  "display": "Research"  }  ]  },  "category": [  {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/consentcategorycodes",  "code": "rsdid",  "display": "De-identified Information Access"  }  ]  }  ],  "patient": {  "reference": "Patient/UKCore-Patient-MichealJones-Example"  },  "dateTime": "2022-07-11T09:00:00Z",  "performer": [  {  "reference": "Patient/UKCore-Patient-MichealJones-Example"  }  ],  "organization": [  {  "reference": "Organization/UKCore-Organization-RBV-Example"  }  ],  "sourceAttachment": {  "contentType": "application/pdf",  "language": "en-GB",  "url": "https://files.genomicsengland.co.uk/forms/Participant-consent-form-for-patients-with-cancer-or-suspected-cancer-C1.pdf",  "size": "539588",  "title" : "Participant-consent-form-for-patients-with-cancer-or-suspected-cancer-C1\_MJ",  "creation": "2022-07-11T09:00:00Z"  },  "policy": [  {  "uri": "https://s3.eu-west-2.amazonaws.com/ge-production-s3/forms/Participant-consent-form-for-patients-with-cancer-or-suspected-cancer-C1.pdf"  }  ],  "verification": [  {  "verified": "true",  "verifiedWith": {  "reference": "Patient/UKCore-Patient-MichealJones-Example"  },  "verificationDate": "2022-07-11T09:00:00Z"  }  ],  "provision": {  "type": "permit",  "period": {  "start": "2022-07-11T09:00:00Z",  "end": "2025-07-11T08:59:59Z"  },  "actor": [  {  "role": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/extra-security-role-type",  "code": "dataprocessor",  "display": "data processor"  }  ]  },  "reference": {  "reference": "Organization/UKCore-Organization-699X0-Example"  }  }  ],  "action": [  {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/consentaction",  "code": "access",  "display": "Access"  }  ]  },  {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/consentaction",  "code": "use",  "display": "Use"  }  ]  }  ],  "class": [  {  "system": "http://hl7.org/fhir/resource-types",  "code": "DiagnosticReport",  "display": "DiagnosticReport"  },  {  "system": "http://hl7.org/fhir/resource-types",  "code": "ClinicalImpression",  "display": "ClinicalImpression"  },  {  "system": "http://hl7.org/fhir/resource-types",  "code": "Condition",  "display": "Condition"  },  {  "system": "http://hl7.org/fhir/resource-types",  "code": "MolecularSequence",  "display": "MolecularSequence"  },  {  "system": "http://hl7.org/fhir/resource-types",  "code": "Observation",  "display": "Observation"  }  ],  "code": [  {  "coding": [  {  "system": "https://www.england.nhs.uk/publication/national-genomic-test-directories",  "code": "M219.3",  "display": "DPYD hotspot"  }  ]  }  ]  }  } |

## Organization (e.g. Home GLH)

Table

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## Task (for performer progress tracking)

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| {  "resourceType": "Task",  "id": "UKCore-Task-DPYDSequencingTask-Example",  "meta": {  "profile": [  "https://fhir.hl7.org.uk/StructureDefinition/UKCore-Task"  ]  },  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Task-DPYDSequencingTask-Example&quot; </p></div></div>"  },  "identifier": [  {  "system": "https://mft.nhs.uk/nwglh/lims",  "value": "DPYDSequencingTask"  }  ],  "instantiatesUri": "https://www.england.nhs.uk/wp-content/uploads/2020/11/1869-dpyd-policy-statement.pdf",  "partOf": {  "reference": "Task/UKCore-Task-ParentTask-Example"  },  "status": "requested",  "businessStatus": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/lab-status-codes",  "code": "AwaitingSpecimen",  "display": "Awaiting Specimen"  }  ]  },  "intent": "filler-order",  "priority": "routine",  "code": {  "coding": [  {  "system": "http://hl7.org/fhir/CodeSystem/task-code",  "code": "fulfill",  "display": "Fulfill the focal request"  }  ]  },  "focus": {  "reference": "ServiceRequest/UKCore-ServiceRequest-MichaelJonesDYPDRequest-Example"  },  "for": {  "reference": "Patient/UKCore-Patient-MichealJones-Example"  },  "authoredOn": "2022-07-13T09:00:00Z",  "lastModified": "2022-07-13T09:00:00Z",  "requester": {  "reference": "Practitioner/UKCore-Practitioner-DrLucyHale-Example"  },  "performerType": [  {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "159282002",  "display": "Laboratory technician (occupation)"  }  ]  }  ],  "owner": {  "reference": "Organization/UKCore-Organization-RBV-Example"  }  } |

## DiagnosticReport (e.g. Genomic Report)

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|  |
| --- |
| {  "resourceType": "DiagnosticReport",  "id": "UKCore-DiagnosticReport-MichaelJonesReport-Example",  "meta": {  "profile": [  "https://fhir.hl7.org.uk/StructureDefinition/UKCore-DiagnosticReport"  ]  },  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-DiagnosticReport-MichaelJonesReport-Example&quot; </p></div></div>"  },  "identifier": [  {  "system": "https://mft.nhs.uk/nwglh/lims",  "value": "DPYDGenomicReport",  "assigner": {  "reference": "Organization/UKCore-Organization-699X0-Example"  }  }  ],  "basedOn": {  "reference": "ServiceRequest/UKCore-ServiceRequest-MichaelJonesDYPDRequest-Example"  },  "status": "final",  "category": [  {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/v2-0074",  "code": "LAB",  "display": "Laboratory"  }  ]  }  ],  "code": {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "4321000179101",  "display": "Hematology report (record artifact)"  }  ]  },  "subject": {  "reference": "Patient/UKCore-Patient-MichealJones-Example"  },  "encounter": {  "reference": "Encounter/UKCore-Encounter-OncologyConsultation-Example"  },  "issued": "2022-07-15T09:00:00Z",  "performer": [  {  "reference": "Organization/UKCore-Organization-699X0-Example"  }  ],  "resultsInterpreter": [  {  "reference": "Organization/UKCore-Organization-REP-Example"  }  ],  "specimen": [  {  "reference": "Specimen/UKCore-Specimen-MichaelJonesBlood-Example"  }  ],  "conclusionCode": [  {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "738544002",  "display": "Dihydropyrimidine dehydrogenase normal metabolizer (finding)"  }  ]  }  ],  "presentedForm": [  {  "contentType": "application/pdf",  "language": "en-GB",  "data": "JVBERi0xLjYNJeLjz9MNCjY2NSAwI...VmDQo1Mzg3NjMNCiUlRU9GDQo=",  "size": "539588",  "title" : "Genomic Report for DPYD deficiency for Michael Jones",  "creation": "2022-07-15T09:00:00Z"  }  ]  } |

# Example request/response messages using DYPD pathway use case:

The following sections present example requests and responses required to fully order and track a DPYD test from order though to completion.

## Example sequence diagram



## Subscription for Tasks from GLH

### Request

|  |
| --- |
| POST /GMS/Subscription/ HTTP/1.1  Host: api.service.nhs.uk  Content-Type: application/json  Content-Length: 441  {  "resourceType": "Subscription",  "status": "active",  "contact": [  {  "system": "email",  "value": "mft.genomics@nhs.net"  }  ],  "reason": "Notification of new tasks for Manchester GLH",  "criteria": "Task?owner:Organization.identifier=https://fhir.nhs.uk/Id/ods-organization-code|699X0",  "channel": {  "type": "rest-hook",  "endpoint": "https://mft.nhs.uk/nwglh/fhir",  "payload": "application/fhir+json"  }  } |

### Response

|  |
| --- |
| 201 Created  Date: Thu, 21 Jul 2022 16:09:15 GMT  Content-Type: application/fhir+json; fhirVersion=4.0; charset=utf-8  Content-Length: 622  Connection: keep-alive  ETag: W/\"b644e1f9-cdbb-4ba2-9ac5-1405529804cf\"  Last-Modified: Thu, 21 Jul 2022 16:09:15 GMT  Location: https://api.service.nhs.uk/GMS/Subscription/f9b2fcba-9f87-4c8a-a146-5830784df9d9/\_history/b644e1f9-cdbb-4ba2-9ac5-1405529804cf  {  "resourceType": "Subscription",  "status": "active",  "contact": [  {  "system": "email",  "value": "mft.genomics@nhs.net"  }  ],  "reason": "Notification of new tasks for Manchester GLH",  "criteria": "Task?owner:Organization.identifier=https://fhir.nhs.uk/Id/ods-organization-code|699X0",  "channel": {  "type": "rest-hook",  "endpoint": "https://mft.nhs.uk/nwglh/fhir",  "payload": "application/fhir+json"  },  "id": "f9b2fcba-9f87-4c8a-a146-5830784df9d9",  "meta": {  "versionId": "b644e1f9-cdbb-4ba2-9ac5-1405529804cf",  "lastUpdated": "2022-07-21T16:09:15.547+00:00"  }  } |

https://d0367435-e4cf-41eb-b7e0-9347251d5876.mock.pstmn.io

## Initiating Genomic Test Request

### Request (RESTful as transaction)

Note: Specimen resource (and associated resources for collecting practitioner and organization can be split into a separate message if this is to be sent from the LIMS instead, or is unavailable at the time of entry into the GMS broker.

Note: Can also be sent as a Message if a messaging paradigm is preferred, with an appropriate MessageHeader. This message is expected to be heavily updated depending on whether resources to organizations/practitioners etc. need to be fully described in messages or only contain identifiers (which can be used to request details from other national services). The following examples assume all data is required in a single transaction and assumes no data has already been collected by the GMS on referenced resources.

|  |
| --- |
| POST /GMS/ HTTP/1.1  Host: api.service.nhs.uk  Content-Type: application/json  Content-Length: 25654  {  "resourceType": "Bundle",  "id": "UKCore-Bundle-MichaelJonesRequest-Example",  "type": "transaction",  "timestamp": "2022-07-11T09:00:00Z",  "entry": [  {  "fullUrl": "urn:uuid:f799ec75-8648-4b91-b0a9-b73b46db2c00",  "resource": {  "resourceType": "Practitioner",  "id": "f799ec75-8648-4b91-b0a9-b73b46db2c00",  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Practitioner-MaryLane-Example&quot; </p></div></div>"  },  "identifier": [  {  "use": "official",  "system": "https://fhir.nhs.uk/Id/sds-user-id",  "value": "999999"  }  ],  "active": "true",  "name": [  {  "use": "official",  "text": "Mary Lane",  "family": "Lane",  "given": [  "Mary"  ]  }  ],  "telecom": [  {  "system": "email",  "value": "mary.lane@nhs.net"  }  ],  "address": [  {  "type": "both",  "line": [  "ST MARYS HOSPITAL",  "MANCHESTER ROYAL INFIRMARY",  "OXFORD ROAD"  ],  "city": "Manchester",  "postalCode": "M13 9WL"  }  ],  "gender": "female",  "birthDate": "1970-01-01",  "communication": [  {  "coding": [  {  "system": "urn:ietf:bcp:47",  "code": "en",  "display": "English"  }  ]  }  ]  },  "request": {  "method": "POST",  "url": "Practitioner",  "ifNoneExist": "identifier=https://fhir.nhs.uk/Id/sds-user-id|999999"  }  },  {  "fullUrl": "urn:uuid:2b94aed1-02bd-4f68-b5f4-df5aaceecdb1",  "resource": {  "resourceType": "Practitioner",  "id": "2b94aed1-02bd-4f68-b5f4-df5aaceecdb1",  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Practitioner-DrDMello-Example&quot; </p></div></div>"  },  "identifier": [  {  "use": "official",  "system": "https://fhir.hl7.org.uk/Id/gmc-number",  "value": "5173256"  }  ],  "active": "true",  "name": [  {  "use": "official",  "text": "Veeda Flavia D'Mello",  "family": "D'Mello",  "given": [  "Veeda",  "Flavia"  ]  }  ],  "telecom": [  {  "system": "email",  "value": "veeda.dmello@nhs.net"  }  ],  "address": [  {  "type": "both",  "line": [  "41 WESTMINSTER ROAD"  ],  "city": "COVENTRY",  "postalCode": "CV1 3GB"  }  ],  "gender": "female",  "birthDate": "1970-01-01",  "qualification": [  {  "code": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/v2-0360|2.7",  "code": "MD",  "display": "Doctor of Medicine"  }  ]  }  }  ],  "communication": [  {  "coding": [  {  "system": "urn:ietf:bcp:47",  "code": "en",  "display": "English"  }  ]  }  ]  },  "request": {  "method": "POST",  "url": "Practitioner",  "ifNoneExist": "identifier=https://fhir.hl7.org.uk/Id/gmc-number|5173256"  }  },  {  "fullUrl": "urn:uuid:6e1a8ea3-3a59-40aa-b943-5c896a30e43a",  "resource": {  "resourceType": "Practitioner",  "id": "6e1a8ea3-3a59-40aa-b943-5c896a30e43a",  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Practitioner-DrLucyHale-Example&quot; </p></div></div>"  },  "identifier": [  {  "use": "official",  "system": "https://fhir.hl7.org.uk/Id/gmc-number",  "value": "9999999"  }  ],  "active": "true",  "name": [  {  "use": "official",  "text": "Lucy Hale",  "family": "Hale",  "given": [  "Lucy"  ]  }  ],  "telecom": [  {  "system": "email",  "value": "lucy.hale@nhs.net"  }  ],  "address": [  {  "type": "both",  "line": [  "550 WILMSLOW ROAD",  "WITHINGTON"  ],  "city": "Manchester",  "postalCode": "M20 4BX"  }  ],  "gender": "female",  "birthDate": "1970-01-01",  "qualification": [  {  "code": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/v2-0360|2.7",  "code": "MD",  "display": "Doctor of Medicine"  }  ]  }  }  ],  "communication": [  {  "coding": [  {  "system": "urn:ietf:bcp:47",  "code": "en",  "display": "English"  }  ]  }  ]  },  "request": {  "method": "POST",  "url": "Practitioner",  "ifNoneExist": "identifier=https://fhir.hl7.org.uk/Id/gmc-number|9999999"  }  },  {  "fullUrl": "urn:uuid:748e3f37-e05e-4484-8425-81e7b7572812",  "resource": {  "resourceType": "Organization",  "id": "748e3f37-e05e-4484-8425-81e7b7572812",  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Organization-DPX-Example&quot; </p></div></div>"  },  "identifier": [  {  "system": "https://fhir.nhs.uk/Id/ods-organization-code",  "value": "DPX"  }  ],  "active": "true",  "type": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/organization-type",  "code": "prov",  "display": "Healthcare Provider"  }  ]  },  "name": "Independent Sector Healthcare Provider - JUBILEE HEALTHCARE",  "address": [  {  "type": "both",  "line": [  "41 WESTMINSTER ROAD"  ],  "city": "COVENTRY",  "postalCode": "CV1 3GB"  }  ],  "partOf": {  "identifier": {  "system": "https://fhir.nhs.uk/Id/ods-organization-code",  "value": "QWU"  }  },  "contact": [  {  "purpose": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/contactentity-type",  "code": "ADMIN",  "display": "Administrative"  }  ]  },  "telecom": [  {  "system": "phone",  "value": "02476223565"  }  ]  }  ],  "endpoint": {  "display": "UKCore-Endpoint-DPX-Example"  }  },  "request": {  "method": "POST",  "url": "Organization",  "ifNoneExist": "identifier=https://fhir.nhs.uk/Id/ods-organization-code|DPX"  }  },  {  "fullUrl": "urn:uuid:309aba59-ce1a-4ee6-bc82-ab44fa1bf904",  "resource": {  "resourceType": "Organization",  "id": "309aba59-ce1a-4ee6-bc82-ab44fa1bf904",  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Organization-699X0-Example&quot; </p></div></div>"  },  "identifier": [  {  "system": "https://fhir.nhs.uk/Id/ods-organization-code",  "value": "699X0"  }  ],  "active": "true",  "type": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/organization-type",  "code": "GLH",  "display": "Genomic Laboratory Hub"  }  ]  },  "name": "Pathology Lab - NORTH WEST GLH LED BY MANCHESTER UNIVERSITY NHS FOUNDATION TRUST",  "address": [  {  "type": "both",  "line": [  "ST MARYS HOSPITAL",  "MANCHESTER ROYAL INFIRMARY",  "OXFORD ROAD"  ],  "city": "Manchester",  "postalCode": "M13 9WL"  }  ],  "partOf": {  "identifier": {  "system": "https://fhir.nhs.uk/Id/ods-organization-code",  "value": "R0A"  }  },  "contact": [  {  "purpose": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/contactentity-type",  "code": "ADMIN",  "display": "Administrative"  }  ]  },  "telecom": [  {  "system": "phone",  "value": "01612766506"  },  {  "system": "email",  "value": "mft.genomics@nhs.net"  }  ]  }  ],  "endpoint": {  "display": "UKCore-Endpoint-NorthWestGLH-Example"  }  },  "request": {  "method": "POST",  "url": "Organization",  "ifNoneExist": "identifier=https://fhir.nhs.uk/Id/ods-organization-code|699X0"  }  },  {  "fullUrl": "urn:uuid:9af435fd-4bbf-4cc6-81c6-9f2800c2c513",  "resource": {  "resourceType": "Organization",  "id": "9af435fd-4bbf-4cc6-81c6-9f2800c2c513",  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Organization-RBV-Example&quot; </p></div></div>"  },  "identifier": [  {  "system": "https://fhir.nhs.uk/Id/ods-organization-code",  "value": "RBV"  }  ],  "active": "true",  "type": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/organization-type",  "code": "prov",  "display": "Healthcare Provider"  }  ]  },  "name": "NHS Trust - THE CHRISTIE NHS FOUNDATION TRUST",  "address": [  {  "type": "both",  "line": [  "550 WILMSLOW ROAD",  "WITHINGTON"  ],  "city": "Manchester",  "postalCode": "M20 4BX"  }  ],  "partOf": {  "identifier": {  "system": "https://fhir.nhs.uk/Id/ods-organization-code",  "value": "QOP"  }  },  "contact": [  {  "purpose": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/contactentity-type",  "code": "ADMIN",  "display": "Administrative"  }  ]  },  "telecom": [  {  "system": "phone",  "value": "01614463000"  }  ]  }  ],  "endpoint": {  "display": "UKCore-Endpoint-RBV-Example"  }  },  "request": {  "method": "POST",  "url": "Organization",  "ifNoneExist": "identifier=https://fhir.nhs.uk/Id/ods-organization-code|RBV"  }  },  {  "fullUrl": "urn:uuid:41e4b604-37f3-4799-a6b3-ab5b104f3c97",  "resource": {  "resourceType": "Patient",  "id": "41e4b604-37f3-4799-a6b3-ab5b104f3c97",  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Patient-MichealJones-Example&quot; </p></div></div>"  },  "extension": [  {  "url": "https://fhir.hl7.org.uk/StructureDefinition/Extension-UKCore-EthnicCategory",  "valueCodeableConcept": {  "coding": [  {  "system": "https://fhir.hl7.org.uk/CodeSystem/UKCore-EthnicCategoryEngland",  "code": "A",  "display": "White - British"  }  ]  }  }  ],  "identifier": [  {  "extension": [  {  "url": "https://fhir.hl7.org.uk/StructureDefinition/Extension-UKCore-NHSNumberVerificationStatus",  "valueCodeableConcept": {  "coding": [  {  "system": "https://fhir.hl7.org.uk/CodeSystem/UKCore-NHSNumberVerificationStatus",  "code": "number-present-and-verified",  "display": "Number present and verified"  }  ]  }  }  ],  "use": "official",  "system": "https://fhir.nhs.uk/Id/nhs-number",  "value": "9999999999"  }  ],  "active": "true",  "name": [  {  "use": "official",  "text": "Michael Jones",  "family": "Jones",  "given": [  "Michael"  ]  }  ],  "telecom": [  {  "system": "phone",  "value": "07920754621"  }  ],  "gender": "male",  "birthDate": "1989-12-08",  "deceasedBoolean": "false",  "address": [  {  "type": "both",  "line": [  "48 Astoria Drive"  ],  "city": "Coventry",  "postalCode": "CV4 9ZY"  }  ],  "maritalStatus": {  "coding": [  {  "system": "https://fhir.hl7.org.uk/CodeSystem/UKCore-PersonMaritalStatus",  "code": "married-or-civil-partner",  "display": "Married/Civil Partner"  }  ]  },  "multipleBirthBoolean": "false",  "contact": [  {  "relationship": [  {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/v3-RoleCode",  "code": "SPS",  "display": "spouse"  }  ]  }  ],  "name": [  {  "use": "official",  "text": "Jane Jones",  "family": "Jones",  "given": [  "Jane"  ]  }  ],  "telecom": [  {  "system": "phone",  "value": "079468308869"  }  ],  "address": [  {  "type": "both",  "line": [  "48 Astoria Drive"  ],  "city": "Coventry",  "postalCode": "CV4 9ZY"  }  ],  "gender": "female"  }  ],  "communication": [  {  "language": {  "coding": [  {  "system": "https://fhir.hl7.org.uk/CodeSystem/UKCore-HumanLanguage",  "code": "en",  "display": "English"  }  ]  },  "preferred": "true"  }  ],  "generalPractitioner": [  {  "reference": "urn:uuid:2b94aed1-02bd-4f68-b5f4-df5aaceecdb1"  }  ],  "managingOrganization": {  "reference": "urn:uuid:748e3f37-e05e-4484-8425-81e7b7572812"  }  },  "request": {  "method": "POST",  "url": "Patient",  "ifNoneExist": "identifier=https://fhir.nhs.uk/Id/nhs-number|9999999999"  }  },  {  "fullUrl": "urn:uuid:66c519dd-423f-4238-89c8-91c5be52f330",  "resource": {  "resourceType": "ServiceRequest",  "id": "66c519dd-423f-4238-89c8-91c5be52f330",  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-ServiceRequest-MichaelJonesDYPDRequest-Example&quot; </p></div></div>"  },  "identifier": [  {  "system": "https://www.christie.nhs.uk/ehr",  "value": "LabOrder123456",  "assigner": {  "reference": "urn:uuid:9af435fd-4bbf-4cc6-81c6-9f2800c2c513"  }  }  ],  "instantiatesUri": [  "https://www.england.nhs.uk/wp-content/uploads/2020/11/1869-dpyd-policy-statement.pdf"  ],  "basedOn": [  {  "display": "UKCore-CarePlan-PancreaticCancerPlan-Example"  }  ],  "status": "active",  "intent": "order",  "category": [  {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "108252007",  "display": "Laboratory procedure"  }  ]  }  ],  "priority": "routine",  "doNotPerform": "false",  "code": {  "coding": [  {  "system": "https://www.england.nhs.uk/publication/national-genomic-test-directories",  "code": "M219.3",  "display": "DPYD hotspot"  }  ]  },  "subject": {  "reference": "urn:uuid:41e4b604-37f3-4799-a6b3-ab5b104f3c97"  },  "encounter": {  "display": "UKCore-Encounter-OncologyConsultation-Example"  },  "authoredOn": "2022-07-11T09:00:00Z",  "requester": {  "reference": "urn:uuid:6e1a8ea3-3a59-40aa-b943-5c896a30e43a"  },  "performer": [  {  "reference": "urn:uuid:309aba59-ce1a-4ee6-bc82-ab44fa1bf904"  }  ],  "reasonCode": [  {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "363418001",  "display": "Malignant tumor of pancreas (disorder)"  }  ]  }  ]  },  "request": {  "method": "POST",  "url": "ServiceRequest"  }  },  {  "fullUrl": "urn:uuid:840d075e-0480-4134-ae51-27f572731cc8",  "resource": {  "resourceType": "Specimen",  "id": "840d075e-0480-4134-ae51-27f572731cc8",  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; 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### Response

|  |
| --- |
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background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-ServiceRequest-MichaelJonesDYPDRequest-Example&quot; </p></div></div>"  },  "identifier": [  {  "system": "https://www.christie.nhs.uk/ehr",  "value": "LabOrder123456",  "assigner": {  "reference": "https://api.service.nhs.uk/Organization/218067dd-ffd2-4f0f-b0a2-76e199658ac0"  }  }  ],  "instantiatesUri": [  "https://www.england.nhs.uk/wp-content/uploads/2020/11/1869-dpyd-policy-statement.pdf"  ],  "basedOn": [  {  "display": "UKCore-CarePlan-PancreaticCancerPlan-Example"  }  ],  "status": "active",  "intent": "order",  "category": [  {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "108252007",  "display": "Laboratory procedure"  }  ]  }  ],  "priority": "routine",  "doNotPerform": false,  "code": {  "coding": [  {  "system": "https://www.england.nhs.uk/publication/national-genomic-test-directories",  "code": "M219.3",  "display": "DPYD hotspot"  }  ]  },  "subject": {  "reference": "https://api.service.nhs.uk/Patient/f52cae9c-81eb-422c-be58-8363e72144aa"  },  "encounter": {  "display": "UKCore-Encounter-OncologyConsultation-Example"  },  "authoredOn": "2022-07-11T09:00:00Z",  "requester": {  "reference": "https://api.service.nhs.uk/Practitioner/832d9c68-685f-4421-ac05-cc23d5c4e619"  },  "performer": [  {  "reference": "https://api.service.nhs.uk/Organization/1b81b2e9-d428-4cf6-8d9f-b3f3e3833430"  }  ],  "reasonCode": [  {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "363418001",  "display": "Malignant tumor of pancreas (disorder)"  }  ]  }  ],  "meta": {  "versionId": "4bacc91a-3741-4f86-ab98-b3d34aca2f42",  "lastUpdated": "2022-08-01T10:07:28.255+00:00"  }  }  },  {  "fullUrl": "https://api.service.nhs.uk/Specimen/e64a0757-f092-47ff-ad36-e8ff0c3b6fa1",  "response": {  "etag": "e3f4dfd4-08e1-4dab-9597-a8f2dd786abc",  "location": "https://api.service.nhs.uk/Specimen/e64a0757-f092-47ff-ad36-e8ff0c3b6fa1/\_history/e3f4dfd4-08e1-4dab-9597-a8f2dd786abc",  "status": "201",  "lastModified": "2022-08-01T10:07:28.265+00:00"  },  "resource": {  "resourceType": "Specimen",  "id": "e64a0757-f092-47ff-ad36-e8ff0c3b6fa1",  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; 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background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Consent-MichaelJonesConsent-Example&quot; </p></div></div>"  },  "identifier": [  {  "system": "https://www.christie.nhs.uk/ehr",  "value": "Consent123456",  "assigner": {  "reference": "https://api.service.nhs.uk/Organization/218067dd-ffd2-4f0f-b0a2-76e199658ac0"  }  }  ],  "status": "active",  "scope": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/consentscope",  "code": "research",  "display": "Research"  }  ]  },  "category": [  {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/consentcategorycodes",  "code": "rsdid",  "display": "De-identified Information Access"  }  ]  }  ],  "patient": {  "reference": "https://api.service.nhs.uk/Patient/f52cae9c-81eb-422c-be58-8363e72144aa"  },  "dateTime": "2022-07-11T09:00:00Z",  "performer": [  {  "reference": "https://api.service.nhs.uk/Patient/f52cae9c-81eb-422c-be58-8363e72144aa"  }  ],  "organization": [  {  "reference": "https://api.service.nhs.uk/Organization/218067dd-ffd2-4f0f-b0a2-76e199658ac0"  }  ],  "sourceAttachment": {  "contentType": "application/pdf",  "language": "en-GB",  "url": "https://files.genomicsengland.co.uk/forms/Participant-consent-form-for-patients-with-cancer-or-suspected-cancer-C1.pdf",  "size": 539588,  "title": "Participant-consent-form-for-patients-with-cancer-or-suspected-cancer-C1\_MJ",  "creation": "2022-07-11T09:00:00Z"  },  "policy": [  {  "uri": "https://s3.eu-west-2.amazonaws.com/ge-production-s3/forms/Participant-consent-form-for-patients-with-cancer-or-suspected-cancer-C1.pdf"  }  ],  "verification": [  {  "verified": true,  "verifiedWith": {  "reference": "https://api.service.nhs.uk/Patient/f52cae9c-81eb-422c-be58-8363e72144aa"  },  "verificationDate": "2022-07-11T09:00:00Z"  }  ],  "provision": {  "type": "permit",  "period": {  "start": "2022-07-11T09:00:00Z",  "end": "2025-07-11T08:59:59Z"  },  "actor": [  {  "role": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/extra-security-role-type",  "code": "dataprocessor",  "display": "data processor"  }  ]  },  "reference": {  "reference": "https://api.service.nhs.uk/Organization/1b81b2e9-d428-4cf6-8d9f-b3f3e3833430"  }  }  ],  "action": [  {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/consentaction",  "code": "access",  "display": "Access"  }  ]  },  {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/consentaction",  "code": "use",  "display": "Use"  }  ]  }  ],  "class": [  {  "system": "http://hl7.org/fhir/resource-types",  "code": "DiagnosticReport",  "display": "DiagnosticReport"  },  {  "system": "http://hl7.org/fhir/resource-types",  "code": "ClinicalImpression",  "display": "ClinicalImpression"  },  {  "system": "http://hl7.org/fhir/resource-types",  "code": "Condition",  "display": "Condition"  },  {  "system": "http://hl7.org/fhir/resource-types",  "code": "MolecularSequence",  "display": "MolecularSequence"  },  {  "system": "http://hl7.org/fhir/resource-types",  "code": "Observation",  "display": "Observation"  }  ],  "code": [  {  "coding": [  {  "system": "https://www.england.nhs.uk/publication/national-genomic-test-directories",  "code": "M219.3",  "display": "DPYD hotspot"  }  ]  }  ]  },  "meta": {  "versionId": "4ea416d2-af90-4840-8f27-dc3ca7118c77",  "lastUpdated": "2022-08-01T10:07:28.275+00:00"  }  }  }  ],  "id": "dd2597f2-80b1-43ee-a719-b29692c770de",  "meta": {  "versionId": "e4185bdd-3cab-4a16-b9f0-fc8a643da3a6",  "lastUpdated": "2022-08-01T10:07:28.284+00:00"  }  } |

## Subscription for DiagnosticReports from Requestor

### Request

|  |
| --- |
| POST /GMS/Subscription HTTP/1.1  Host: api.service.nhs.uk  Content-Type: application/json  Content-Length: 504  {  "resourceType": "Subscription",  "id": "Subscription-DiagnosticReportNotification-Example",  "status": "active",  "contact": [  {  "system": "phone",  "value": "01614463000"  }  ],  "reason": "Notification of DiagnosticReport for Test LabOrder123456",  "criteria": "DiagnosticReport?based-on=ServiceRequest/7f70bb0c-5792-46d4-bbfd-c48cbcd3895b",  "channel": {  "type": "rest-hook",  "endpoint": "https://www.christie.nhs.uk/ehr/fhir",  "payload": "application/fhir+json"  }  } |

### Response

|  |
| --- |
| 201 Created  Date: Tue, 02 Aug 2022 12:39:09 GMT  Content-Type: application/fhir+json; fhirVersion=4.0; charset=utf-8  Content-Length: 624  Connection: keep-alive  ETag: W/\"9b80b6db-0f36-432e-9bc7-b17fe743ac94\"  Last-Modified: Tue, 02 Aug 2022 12:39:08 GMT  Location: https://api.service.nhs.uk/GMS/Subscription/67368d65-1a31-4cb2-8934-0261a92fdcfe/\_history/9b80b6db-0f36-432e-9bc7-b17fe743ac94  {      "resourceType": "Subscription",      "id": "67368d65-1a31-4cb2-8934-0261a92fdcfe",      "status": "active",      "contact": [          {              "system": "phone",              "value": "01614463000"          }      ],      "reason": "Notification of DiagnosticReport for Test LabOrder123456",      "criteria": "DiagnosticReport?based-on=ServiceRequest/7f70bb0c-5792-46d4-bbfd-c48cbcd3895b",      "channel": {          "type": "rest-hook",          "endpoint": "https://www.christie.nhs.uk/ehr/fhir",          "payload": "application/fhir+json"      },      "meta": {          "versionId": "9b80b6db-0f36-432e-9bc7-b17fe743ac94",          "lastUpdated": "2022-08-02T12:39:08.878+00:00"      }  } |

## Associated Specimen record

### Request

Note: As in ServiceRequest message, can be replaced by bundle with referenced resources included if service is not trusted to already have references to those resources. A specimen’s condition will need to be updated throughout the lab analysis to reflect the current status of the specimen

|  |
| --- |
| POST /GMS/ HTTP/1.1  Host: api.service.nhs.uk  Content-Type: application/json  Content-Length: 3269  {  "resourceType": "Bundle",  "id": "UKCore-Bundle-MichaelJonesSpecimen-Example",  "type": "transaction",  "timestamp": "2022-07-11T09:00:00Z",  "entry": [  {  "resource": {  "resourceType": "Specimen",  "id": "840d075e-0480-4134-ae51-27f572731cc8",  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Specimen-MichaelJonesBlood-Example&quot; </p></div></div>"  },  "identifier": [  {  "system": "https://www.christie.nhs.uk/path",  "value": "Spec123456"  }  ],  "status": "available",  "type": {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "87612001",  "display": "Blood (substance)"  }  ]  },  "subject": {  "reference": "Patient?identifier=https://fhir.nhs.uk/Id/nhs-number|9999999999"  },  "receivedTime": "2022-07-13T09:00:00Z",  "request": [  {  "reference": "ServiceRequest?identifier=https://www.christie.nhs.uk/ehr|LabOrder123456"  }  ],  "collection": {  "collector": {  "reference": "Practitioner?identifier=https://fhir.nhs.uk/Id/sds-user-id|999999"  },  "collectedDateTime": "2022-07-11T09:00:00Z",  "quantity": {  "system": "http://unitsofmeasure.org",  "code": "mL",  "value": "2.5"  },  "method": {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "129300006",  "display": "Puncture - action"  }  ]  },  "bodySite": {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "14975008",  "display": "Forearm structure (body structure)"  }  ]  }  },  "container": [  {  "identifier": [  {  "use": "official",  "type": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/v2-0203",  "code": "ACSN",  "display": "Accession ID"  }  ]  },  "system": "https://www.christie.nhs.uk/path",  "value": "ASCN123456",  "assigner": {  "reference": "Organization?identifier=https://fhir.nhs.uk/Id/ods-organization-code|RBV"  }  }  ],  "type": {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "706067003",  "display": "Blood collection/transfer device (physical object)"  }  ]  },  "specimenQuantity": {  "system": "http://unitsofmeasure.org",  "code": "mL",  "value": "2.5"  }  }  ],  "condition": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/v2-0493",  "code": "SNR",  "display": "Sample not received"  }  ]  }  },  "request": {  "method": "POST",  "url": "Specimen"  }  }  ]  } |

### Response

|  |
| --- |
| 200 OK  Date: Tue, 02 Aug 2022 12:55:36 GMT  Content-Type: application/fhir+json; fhirVersion=4.0; charset=utf-8  Content-Length: 4410  Connection: keep-alive  ETag: W/\"8e8ede55-7e36-4250-8ab2-f302ccdd0bb5\"  Last-Modified: Tue, 02 Aug 2022 12:55:36 GMT  {      "resourceType": "Bundle",      "type": "transaction-response",      "entry": [          {              "fullUrl": "https://api.service.nhs.uk/Specimen/93dc2ddb-9bf6-4c40-8841-799b265d80dd",              "response": {                  "etag": "d5c02230-e458-4707-9b57-5f9a1f89db41",                  "location": "https://api.service.nhs.uk/Specimen/93dc2ddb-9bf6-4c40-8841-799b265d80dd/\_history/d5c02230-e458-4707-9b57-5f9a1f89db41",                  "status": "201",                  "lastModified": "2022-08-02T12:55:36.450+00:00"              },              "resource": {                  "resourceType": "Specimen",                  "id": "93dc2ddb-9bf6-4c40-8841-799b265d80dd",                  "text": {                      "status": "generated",                      "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Specimen-MichaelJonesBlood-Example&quot; </p></div></div>"                  },                  "identifier": [                      {                          "system": "https://www.christie.nhs.uk/path",                          "value": "Spec123456"                      }                  ],                  "status": "available",                  "type": {                      "coding": [                          {                              "system": "http://snomed.info/sct",                              "code": "87612001",                              "display": "Blood (substance)"                          }                      ]                  },                  "subject": {                      "reference": "https://api.service.nhs.uk/Patient/f52cae9c-81eb-422c-be58-8363e72144aa"                  },                  "receivedTime": "2022-07-13T09:00:00Z",                  "request": [                      {                          "reference": "https://api.service.nhs.uk/ServiceRequest/28d5eb89-8479-44e7-bc63-66d669949a75"                      }                  ],                  "collection": {                      "collector": {                          "reference": "https://api.service.nhs.uk/Practitioner/2e524d4b-477f-465c-a29c-ad9655d7c4f2"                      },                      "collectedDateTime": "2022-07-11T09:00:00Z",                      "quantity": {                          "system": "http://unitsofmeasure.org",                          "code": "mL",                          "value": 2.5                      },                      "method": {                          "coding": [                              {                                  "system": "http://snomed.info/sct",                                  "code": "129300006",                                  "display": "Puncture - action"                              }                          ]                      },                      "bodySite": {                          "coding": [                              {                                  "system": "http://snomed.info/sct",                                  "code": "14975008",                                  "display": "Forearm structure (body structure)"                              }                          ]                      }                  },                  "container": [                      {                          "identifier": [                              {                                  "use": "official",                                  "type": {                                      "coding": [                                          {                                              "system": "http://terminology.hl7.org/CodeSystem/v2-0203",                                              "code": "ACSN",                                              "display": "Accession ID"                                          }                                      ]                                  },                                  "system": "https://www.christie.nhs.uk/path",                                  "value": "ASCN123456",                                  "assigner": {                                      "reference": "https://api.service.nhs.uk/Organization/218067dd-ffd2-4f0f-b0a2-76e199658ac0"                                  }                              }                          ],                          "type": {                              "coding": [                                  {                                      "system": "http://snomed.info/sct",                                      "code": "706067003",                                      "display": "Blood collection/transfer device (physical object)"                                  }                              ]                          },                          "specimenQuantity": {                              "system": "http://unitsofmeasure.org",                              "code": "mL",                              "value": 2.5                          }                      }                  ],                  "condition": [                      {                          "coding": [                              {                                  "system": "http://terminology.hl7.org/CodeSystem/v2-0493",                                  "code": "SNR",                                  "display": "Sample not received"                              }                          ]                      }                  ],                  "meta": {                      "versionId": "d5c02230-e458-4707-9b57-5f9a1f89db41",                      "lastUpdated": "2022-08-02T12:55:36.450+00:00"                  }              }          }      ],      "id": "5cde1ffb-a98d-4e3e-a54e-1202df446f74",      "meta": {          "versionId": "8e8ede55-7e36-4250-8ab2-f302ccdd0bb5",          "lastUpdated": "2022-08-02T12:55:36.460+00:00"      }  } |

## Self-post of new Task

### Request

Note: lab status codes need to be defined and added to an existing CodeSystem or as a new CodeSystem and bound to businessStatus (for tracking status of the task in the lab). May optionally have a parent task.

|  |
| --- |
| POST /GMS/Task HTTP/1.1  Host: api.service.nhs.uk  Content-Type: application/json  Content-Length: 1860  {  "resourceType": "Task",  "id": "UKCore-Task-DPYDSequencingTask-Example",  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Task-DPYDSequencingTask-Example&quot; </p></div></div>"  },  "identifier": [  {  "system": "https://mft.nhs.uk/nwglh/lims",  "value": "DPYDSequencingTask"  }  ],  "instantiatesUri": "https://www.england.nhs.uk/wp-content/uploads/2020/11/1869-dpyd-policy-statement.pdf",  "partOf": {  "display": "Task/UKCore-Task-ParentTask-Example"  },  "status": "requested",  "businessStatus": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/lab-status-codes",  "code": "AwaitingSpecimen",  "display": "Awaiting Specimen"  }  ]  },  "intent": "filler-order",  "priority": "routine",  "code": {  "coding": [  {  "system": "http://hl7.org/fhir/CodeSystem/task-code",  "code": "fulfill",  "display": "Fulfill the focal request"  }  ]  },  "focus": {  "reference": "ServiceRequest/7f70bb0c-5792-46d4-bbfd-c48cbcd3895b"  },  "for": {  "reference": "Patient/f52cae9c-81eb-422c-be58-8363e72144aa"  },  "authoredOn": "2022-07-13T09:00:00Z",  "lastModified": "2022-07-13T09:00:00Z",  "requester": {  "reference": "Practitioner/832d9c68-685f-4421-ac05-cc23d5c4e619"  },  "performerType": [  {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "159282002",  "display": "Laboratory technician (occupation)"  }  ]  }  ],  "owner": {  "reference": "Organization/1b81b2e9-d428-4cf6-8d9f-b3f3e3833430"  }  } |

### Response

Note: Body of response not relevant as internal to GMS system only

|  |
| --- |
| 201 Created |

## Notification of new Task to GLH

### Request

|  |
| --- |
| POST /nwglh/fhir HTTP/1.1  Host: mft.nhs.uk  Content-Type: application/fhir+json  Content-Length: 2141  {      "resourceType": "Task",      "id": "a3f6af00-894e-4959-9530-d30d5b25893a",      "text": {          "status": "generated",          "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Task-DPYDSequencingTask-Example&quot; </p></div></div>"      },      "identifier": [          {              "system": "https://mft.nhs.uk/nwglh/lims",              "value": "DPYDSequencingTask"          }      ],      "instantiatesUri": "https://www.england.nhs.uk/wp-content/uploads/2020/11/1869-dpyd-policy-statement.pdf",      "partOf": [          {              "display": "Task/UKCore-Task-ParentTask-Example"          }      ],      "status": "requested",      "businessStatus": {          "coding": [              {                  "system": "http://terminology.hl7.org/CodeSystem/lab-status-codes",                  "code": "AwaitingSpecimen",                  "display": "Awaiting Specimen"              }          ]      },      "intent": "filler-order",      "priority": "routine",      "code": {          "coding": [              {                  "system": "http://hl7.org/fhir/CodeSystem/task-code",                  "code": "fulfill",                  "display": "Fulfill the focal request"              }          ]      },      "focus": {          "reference": "https://api.service.nhs.uk/ServiceRequest/7f70bb0c-5792-46d4-bbfd-c48cbcd3895b"      },      "for": {          "reference": "https://api.service.nhs.uk/Patient/f52cae9c-81eb-422c-be58-8363e72144aa"      },      "authoredOn": "2022-07-13T09:00:00Z",      "lastModified": "2022-07-13T09:00:00Z",      "requester": {          "reference": "https://api.service.nhs.uk/Practitioner/832d9c68-685f-4421-ac05-cc23d5c4e619"      },      "performerType": [          {              "coding": [                  {                      "system": "http://snomed.info/sct",                      "code": "159282002",                      "display": "Laboratory technician (occupation)"                  }              ]          }      ],      "owner": {          "reference": "https://api.service.nhs.uk/Organization/1b81b2e9-d428-4cf6-8d9f-b3f3e3833430"      },      "meta": {          "versionId": "04f6f976-0003-4006-8fa3-2bd79d02443a",          "lastUpdated": "2022-08-02T13:48:06.302+00:00"      }  } |

### Response

Note: This is the response from the GLH system, the GMS does not need to consume it unless there is a requirement to detect whether the GLH was successfully notified, in which case an async POST with the status ‘received’ should be sent

|  |
| --- |
| 200 OK |

## Claim of new Task

### Request

|  |
| --- |
| PUT /GMS/Task/a3f6af00-894e-4959-9530-d30d5b25893a HTTP/1.1  Host: api.service.nhs.uk  Content-Type: application/json  Content-Length: 2348  {  "resourceType": "Task",  "id": "a3f6af00-894e-4959-9530-d30d5b25893a",  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Task-DPYDSequencingTask-Example&quot; </p></div></div>"  },  "identifier": [  {  "system": "https://mft.nhs.uk/nwglh/lims",  "value": "DPYDSequencingTask"  }  ],  "instantiatesUri": "https://www.england.nhs.uk/wp-content/uploads/2020/11/1869-dpyd-policy-statement.pdf",  "partOf": [  {  "display": "Task/UKCore-Task-ParentTask-Example"  }  ],  "status": "accepted",  "businessStatus": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/lab-status-codes",  "code": "AwaitingSpecimen",  "display": "Awaiting Specimen"  }  ]  },  "intent": "filler-order",  "priority": "routine",  "code": {  "coding": [  {  "system": "http://hl7.org/fhir/CodeSystem/task-code",  "code": "fulfill",  "display": "Fulfill the focal request"  }  ]  },  "focus": {  "reference": "https://api.service.nhs.uk/ServiceRequest/7f70bb0c-5792-46d4-bbfd-c48cbcd3895b"  },  "for": {  "reference": "https://api.service.nhs.uk/Patient/f52cae9c-81eb-422c-be58-8363e72144aa"  },  "authoredOn": "2022-07-13T09:00:00Z",  "lastModified": "2022-07-13T09:00:00Z",  "requester": {  "reference": "https://api.service.nhs.uk/Practitioner/832d9c68-685f-4421-ac05-cc23d5c4e619"  },  "performerType": [  {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "159282002",  "display": "Laboratory technician (occupation)"  }  ]  }  ],  "owner": {  "reference": "https://api.service.nhs.uk/Organization/1b81b2e9-d428-4cf6-8d9f-b3f3e3833430"  }  } |

### Response

|  |
| --- |
| 200 OK  Date: Tue, 02 Aug 2022 13:54:49 GMT  Content-Type: application/fhir+json; fhirVersion=4.0; charset=utf-8  Content-Length: 2140  Connection: keep-alive  ETag: W/\"61d50c29-0aad-4128-b53e-fbf0e2290c50\"  Last-Modified: Tue, 02 Aug 2022 13:54:48 GMT  Location: https://api.service.nhs.uk/Task/a3f6af00-894e-4959-9530-d30d5b25893a/\_history/61d50c29-0aad-4128-b53e-fbf0e2290c50  {      "resourceType": "Task",      "id": "a3f6af00-894e-4959-9530-d30d5b25893a",      "text": {          "status": "generated",          "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Task-DPYDSequencingTask-Example&quot; </p></div></div>"      },      "identifier": [          {              "system": "https://mft.nhs.uk/nwglh/lims",              "value": "DPYDSequencingTask"          }      ],      "instantiatesUri": "https://www.england.nhs.uk/wp-content/uploads/2020/11/1869-dpyd-policy-statement.pdf",      "partOf": [          {              "display": "Task/UKCore-Task-ParentTask-Example"          }      ],      "status": "accepted",      "businessStatus": {          "coding": [              {                  "system": "http://terminology.hl7.org/CodeSystem/lab-status-codes",                  "code": "AwaitingSpecimen",                  "display": "Awaiting Specimen"              }          ]      },      "intent": "filler-order",      "priority": "routine",      "code": {          "coding": [              {                  "system": "http://hl7.org/fhir/CodeSystem/task-code",                  "code": "fulfill",                  "display": "Fulfill the focal request"              }          ]      },      "focus": {          "reference": "https://api.service.nhs.uk/ServiceRequest/7f70bb0c-5792-46d4-bbfd-c48cbcd3895b"      },      "for": {          "reference": "https://api.service.nhs.uk/Patient/f52cae9c-81eb-422c-be58-8363e72144aa"      },      "authoredOn": "2022-07-13T09:00:00Z",      "lastModified": "2022-07-13T09:00:00Z",      "requester": {          "reference": "https://api.service.nhs.uk/Practitioner/832d9c68-685f-4421-ac05-cc23d5c4e619"      },      "performerType": [          {              "coding": [                  {                      "system": "http://snomed.info/sct",                      "code": "159282002",                      "display": "Laboratory technician (occupation)"                  }              ]          }      ],      "owner": {          "reference": "https://api.service.nhs.uk/Organization/1b81b2e9-d428-4cf6-8d9f-b3f3e3833430"      },      "meta": {          "versionId": "61d50c29-0aad-4128-b53e-fbf0e2290c50",          "lastUpdated": "2022-08-02T13:54:48.152+00:00"      }  } |

## Update of Specimen record

### Request

Note: It may not be required to update the specimen record itself, only the task with the business status, this is TBC, extensions may be necessary to track specimens when moving between labs. May also be required to track input, outputs and sendaways.

|  |
| --- |
| PUT /GMS/Specimen/93dc2ddb-9bf6-4c40-8841-799b265d80dd HTTP/1.1  Host: api.service.nhs.uk  Content-Type: application/json  Content-Length: 3885  {  "resourceType": "Specimen",  "id": "93dc2ddb-9bf6-4c40-8841-799b265d80dd",  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Specimen-MichaelJonesBlood-Example&quot; </p></div></div>"  },  "identifier": [  {  "system": "https://www.christie.nhs.uk/path",  "value": "Spec123456"  }  ],  "status": "available",  "type": {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "87612001",  "display": "Blood (substance)"  }  ]  },  "subject": {  "reference": "https://api.service.nhs.uk/Patient/f52cae9c-81eb-422c-be58-8363e72144aa"  },  "receivedTime": "2022-07-13T09:00:00Z",  "request": [  {  "reference": "https://api.service.nhs.uk/ServiceRequest/28d5eb89-8479-44e7-bc63-66d669949a75"  }  ],  "collection": {  "collector": {  "reference": "https://api.service.nhs.uk/Practitioner/2e524d4b-477f-465c-a29c-ad9655d7c4f2"  },  "collectedDateTime": "2022-07-11T09:00:00Z",  "quantity": {  "system": "http://unitsofmeasure.org",  "code": "mL",  "value": 2.5  },  "method": {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "129300006",  "display": "Puncture - action"  }  ]  },  "bodySite": {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "14975008",  "display": "Forearm structure (body structure)"  }  ]  }  },  "container": [  {  "identifier": [  {  "use": "official",  "type": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/v2-0203",  "code": "ACSN",  "display": "Accession ID"  }  ]  },  "system": "https://www.christie.nhs.uk/path",  "value": "ASCN123456",  "assigner": {  "reference": "https://api.service.nhs.uk/Organization/218067dd-ffd2-4f0f-b0a2-76e199658ac0"  }  }  ],  "type": {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "706067003",  "display": "Blood collection/transfer device (physical object)"  }  ]  },  "specimenQuantity": {  "system": "http://unitsofmeasure.org",  "code": "mL",  "value": 2.5  }  }  ],  "condition": [  {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/v2-0493",  "code": "CFU",  "display": "Centrifuged"  }  ]  }  ],  "meta": {  "versionId": "d5c02230-e458-4707-9b57-5f9a1f89db41",  "lastUpdated": "2022-08-02T12:55:36.450+00:00"  }  }  } |

### Response

|  |
| --- |
| 200 OK  Date: Tue, 02 Aug 2022 14:24:21 GMT  Content-Type: application/fhir+json; fhirVersion=4.0; charset=utf-8  Content-Length: 3045  Connection: keep-alive  ETag: W/\"7cddcecc-137c-49b8-9822-a74f82fabbca\"  Last-Modified: Tue, 02 Aug 2022 14:24:21 GMT  Location: https://api.service.nhs.uk/Specimen/93dc2ddb-9bf6-4c40-8841-799b265d80dd/\_history/7cddcecc-137c-49b8-9822-a74f82fabbca  {      "resourceType": "Specimen",      "id": "93dc2ddb-9bf6-4c40-8841-799b265d80dd",      "text": {          "status": "generated",          "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Specimen-MichaelJonesBlood-Example&quot; </p></div></div>"      },      "identifier": [          {              "system": "https://www.christie.nhs.uk/path",              "value": "Spec123456"          }      ],      "status": "available",      "type": {          "coding": [              {                  "system": "http://snomed.info/sct",                  "code": "87612001",                  "display": "Blood (substance)"              }          ]      },      "subject": {          "reference": "https://api.service.nhs.uk/Patient/f52cae9c-81eb-422c-be58-8363e72144aa"      },      "receivedTime": "2022-07-13T09:00:00Z",      "request": [          {              "reference": "https://api.service.nhs.uk/ServiceRequest/28d5eb89-8479-44e7-bc63-66d669949a75"          }      ],      "collection": {          "collector": {              "reference": "https://api.service.nhs.uk/Practitioner/2e524d4b-477f-465c-a29c-ad9655d7c4f2"          },          "collectedDateTime": "2022-07-11T09:00:00Z",          "quantity": {              "system": "http://unitsofmeasure.org",              "code": "mL",              "value": 2.5          },          "method": {              "coding": [                  {                      "system": "http://snomed.info/sct",                      "code": "129300006",                      "display": "Puncture - action"                  }              ]          },          "bodySite": {              "coding": [                  {                      "system": "http://snomed.info/sct",                      "code": "14975008",                      "display": "Forearm structure (body structure)"                  }              ]          }      },      "container": [          {              "identifier": [                  {                      "use": "official",                      "type": {                          "coding": [                              {                                  "system": "http://terminology.hl7.org/CodeSystem/v2-0203",                                  "code": "ACSN",                                  "display": "Accession ID"                              }                          ]                      },                      "system": "https://www.christie.nhs.uk/path",                      "value": "ASCN123456",                      "assigner": {                          "reference": "https://api.service.nhs.uk/Organization/218067dd-ffd2-4f0f-b0a2-76e199658ac0"                      }                  }              ],              "type": {                  "coding": [                      {                          "system": "http://snomed.info/sct",                          "code": "706067003",                          "display": "Blood collection/transfer device (physical object)"                      }                  ]              },              "specimenQuantity": {                  "system": "http://unitsofmeasure.org",                  "code": "mL",                  "value": 2.5              }          }      ],      "condition": [          {              "coding": [                  {                      "system": "http://terminology.hl7.org/CodeSystem/v2-0493",                      "code": "CFU",                      "display": "Centrifuged"                  }              ]          }      ],      "meta": {          "versionId": "7cddcecc-137c-49b8-9822-a74f82fabbca",          "lastUpdated": "2022-08-02T14:24:21.865+00:00"      }  } |

## Update of Task

### Request

Note: This is expected to occur at multiple points over the course of the genetic testing procedure, the lab-status-codes CodeSystem does not exist and will need to be created accounting for all Task statuses expected

|  |
| --- |
| PUT /GMS/Task/a3f6af00-894e-4959-9530-d30d5b25893a HTTP/1.1  Host: api.service.nhs.uk  Content-Type: application/json  Content-Length: 2352  {  "resourceType": "Task",  "id": "a3f6af00-894e-4959-9530-d30d5b25893a",  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Task-DPYDSequencingTask-Example&quot; </p></div></div>"  },  "identifier": [  {  "system": "https://mft.nhs.uk/nwglh/lims",  "value": "DPYDSequencingTask"  }  ],  "instantiatesUri": "https://www.england.nhs.uk/wp-content/uploads/2020/11/1869-dpyd-policy-statement.pdf",  "partOf": [  {  "display": "Task/UKCore-Task-ParentTask-Example"  }  ],  "status": "accepted",  "businessStatus": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/lab-status-codes",  "code": "SpecimenProcessed",  "display": "Specimen Processed"  }  ]  },  "intent": "filler-order",  "priority": "routine",  "code": {  "coding": [  {  "system": "http://hl7.org/fhir/CodeSystem/task-code",  "code": "fulfill",  "display": "Fulfill the focal request"  }  ]  },  "focus": {  "reference": "https://api.service.nhs.uk/ServiceRequest/7f70bb0c-5792-46d4-bbfd-c48cbcd3895b"  },  "for": {  "reference": "https://api.service.nhs.uk/Patient/f52cae9c-81eb-422c-be58-8363e72144aa"  },  "authoredOn": "2022-07-13T09:00:00Z",  "lastModified": "2022-07-13T09:00:00Z",  "requester": {  "reference": "https://api.service.nhs.uk/Practitioner/832d9c68-685f-4421-ac05-cc23d5c4e619"  },  "performerType": [  {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "159282002",  "display": "Laboratory technician (occupation)"  }  ]  }  ],  "owner": {  "reference": "https://api.service.nhs.uk/Organization/1b81b2e9-d428-4cf6-8d9f-b3f3e3833430"  }  } |

### Response

|  |
| --- |
| 200 OK  Date: Tue, 02 Aug 2022 14:29:36 GMT  Content-Type: application/fhir+json; fhirVersion=4.0; charset=utf-8  Content-Length: 2142  Connection: keep-alive  ETag: W/\"36031013-ca92-4335-88d2-c8bd26ea1b48\"  Last-Modified: Tue, 02 Aug 2022 14:29:35 GMT  Location: https://api.service.nhs.uk/Task/a3f6af00-894e-4959-9530-d30d5b25893a/\_history/36031013-ca92-4335-88d2-c8bd26ea1b48  {      "resourceType": "Task",      "id": "a3f6af00-894e-4959-9530-d30d5b25893a",      "text": {          "status": "generated",          "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Task-DPYDSequencingTask-Example&quot; </p></div></div>"      },      "identifier": [          {              "system": "https://mft.nhs.uk/nwglh/lims",              "value": "DPYDSequencingTask"          }      ],      "instantiatesUri": "https://www.england.nhs.uk/wp-content/uploads/2020/11/1869-dpyd-policy-statement.pdf",      "partOf": [          {              "display": "Task/UKCore-Task-ParentTask-Example"          }      ],      "status": "accepted",      "businessStatus": {          "coding": [              {                  "system": "http://terminology.hl7.org/CodeSystem/lab-status-codes",                  "code": "SpecimenProcessed",                  "display": "Specimen Processed"              }          ]      },      "intent": "filler-order",      "priority": "routine",      "code": {          "coding": [              {                  "system": "http://hl7.org/fhir/CodeSystem/task-code",                  "code": "fulfill",                  "display": "Fulfill the focal request"              }          ]      },      "focus": {          "reference": "https://api.service.nhs.uk/ServiceRequest/7f70bb0c-5792-46d4-bbfd-c48cbcd3895b"      },      "for": {          "reference": "https://api.service.nhs.uk/Patient/f52cae9c-81eb-422c-be58-8363e72144aa"      },      "authoredOn": "2022-07-13T09:00:00Z",      "lastModified": "2022-07-13T09:00:00Z",      "requester": {          "reference": "https://api.service.nhs.uk/Practitioner/832d9c68-685f-4421-ac05-cc23d5c4e619"      },      "performerType": [          {              "coding": [                  {                      "system": "http://snomed.info/sct",                      "code": "159282002",                      "display": "Laboratory technician (occupation)"                  }              ]          }      ],      "owner": {          "reference": "https://api.service.nhs.uk/Organization/1b81b2e9-d428-4cf6-8d9f-b3f3e3833430"      },      "meta": {          "versionId": "36031013-ca92-4335-88d2-c8bd26ea1b48",          "lastUpdated": "2022-08-02T14:29:35.710+00:00"      }  } |

## Poll request for updates to Task (includes (11) response with Task)

### Request

|  |
| --- |
| GET /GMS/Task?subject:Patient.identifier=https://fhir.nhs.uk/Id/nhs-number|9999999999 HTTP/1.1  Host: api.service.nhs.uk  Content-Type: application/json  Content-Length: 2890  {  "resourceType": "Specimen",  "id": "UKCore-Specimen-MichaelJonesBlood-Example",  "meta": {  "profile": [  "https://fhir.hl7.org.uk/StructureDefinition/UKCore-Specimen"  ]  },  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Specimen-MichaelJonesBlood-Example&quot; </p></div></div>"  },  "identifier": [  {  "system": "https://www.christie.nhs.uk/path",  "value": "Spec123456"  }  ],  "status": "available",  "type": {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "87612001",  "display": "Blood (substance)"  }  ]  },  "subject": {  "reference": "Patient/UKCore-Patient-MichealJones-Example"  },  "receivedTime": "2022-07-13T09:00:00Z",  "request": [  {  "reference": "ServiceRequest/UKCore-ServiceRequest-MichaelJonesDYPDRequest-Example"  }  ],  "collection": {  "collector": {  "reference": "Practitioner/UKCore-Practitioner-MaryLane-Example"  },  "collectedDateTime": "2022-07-11T09:00:00Z",  "quantity": {  "system": "http://unitsofmeasure.org",  "code": "mL",  "value": "2.5"  },  "method": {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "129300006",  "display": "Puncture - action"  }  ]  },  "bodySite": {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "14975008",  "display": "Forearm structure (body structure)"  }  ]  }  },  "processing": [  {  "description": "Populated when sample is processed"  }  ],  "container": [  {  "identifier": [  {  "use": "official",  "type": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/v2-0203",  "code": "ACSN",  "display": "Accession ID"  }  ]  },  "system": "https://www.christie.nhs.uk/path",  "value": "ASCN123456",  "assigner": {  "reference": "Organization/UKCore-Organization-RBV-Example"  }  }  ],  "type": {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "706067003",  "display": "Blood collection/transfer device (physical object)"  }  ]  },  "specimenQuantity": {  "system": "http://unitsofmeasure.org",  "code": "mL",  "value": "2.5"  }  }  ],  "condition": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/v2-0493",  "code": "SNR",  "display": "Sample not received"  }  ],  "text": "change code if sample condition changes"  }  } |

### Response

|  |
| --- |
| 200 OK  Date: Tue, 02 Aug 2022 14:37:30 GMT  Content-Type: application/fhir+json; fhirVersion=4.0; charset=utf-8  Content-Length: 3245  Connection: keep-alive  ETag: W/\"fa04fc7e-156f-4bd5-8d92-963ededb7df3\"  Last-Modified: Tue, 02 Aug 2022 14:37:30 GMT  Location: https://api.service.nhs.uk/Task?subject:Patient.identifier=https%3A%2F%2Ffhir.nhs.uk%2FId%2Fnhs-number%7C9999999999&\_total=accurate&\_count=10&\_skip=0  {  "resourceType": "Bundle",  "type": "searchset",  "timestamp": "2022-08-02T14:37:30.655+00:00",  "meta": {  "lastUpdated": "2022-08-02T14:37:30.655+00:00",  "versionId": "fa04fc7e-156f-4bd5-8d92-963ededb7df3"  },  "entry": [  {  "fullUrl": "https://api.service.nhs.uk/Task/a3f6af00-894e-4959-9530-d30d5b25893a",  "search": {  "mode": "match"  },  "resource": {  "resourceType": "Task",  "id": "a3f6af00-894e-4959-9530-d30d5b25893a",  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Task-DPYDSequencingTask-Example&quot; </p></div></div>"  },  "identifier": [  {  "system": "https://mft.nhs.uk/nwglh/lims",  "value": "DPYDSequencingTask"  }  ],  "instantiatesUri": "https://www.england.nhs.uk/wp-content/uploads/2020/11/1869-dpyd-policy-statement.pdf",  "partOf": [  {  "display": "Task/UKCore-Task-ParentTask-Example"  }  ],  "status": "accepted",  "businessStatus": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/lab-status-codes",  "code": "SpecimenProcessed",  "display": "Specimen Processed"  }  ]  },  "intent": "filler-order",  "priority": "routine",  "code": {  "coding": [  {  "system": "http://hl7.org/fhir/CodeSystem/task-code",  "code": "fulfill",  "display": "Fulfill the focal request"  }  ]  },  "focus": {  "reference": "https://api.service.nhs.uk/ServiceRequest/7f70bb0c-5792-46d4-bbfd-c48cbcd3895b"  },  "for": {  "reference": "https://api.service.nhs.uk/Patient/f52cae9c-81eb-422c-be58-8363e72144aa"  },  "authoredOn": "2022-07-13T09:00:00Z",  "lastModified": "2022-07-13T09:00:00Z",  "requester": {  "reference": "https://api.service.nhs.uk/Practitioner/832d9c68-685f-4421-ac05-cc23d5c4e619"  },  "performerType": [  {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "159282002",  "display": "Laboratory technician (occupation)"  }  ]  }  ],  "owner": {  "reference": "https://api.service.nhs.uk/Organization/1b81b2e9-d428-4cf6-8d9f-b3f3e3833430"  },  "meta": {  "versionId": "36031013-ca92-4335-88d2-c8bd26ea1b48",  "lastUpdated": "2022-08-02T14:29:35.710+00:00"  }  }  }  ],  "total": 1,  "link": [  {  "relation": "self",  "url": "https://api.service.nhs.uk/Task?subject:Patient.identifier=https%3A%2F%2Ffhir.nhs.uk%2FId%2Fnhs-number%7C9999999999&\_total=accurate&\_count=10&\_skip=0"  }  ],  "id": "9dfb25a3-19a3-49a7-8c6e-cbec08fff6c9"  } |

## Generated Diagnostic Report from GLH

### Request

Note: Resource attached to reduce characters

|  |
| --- |
| POST /GMS/DiagnosticReport HTTP/1.1  Host: api.service.nhs.uk  Content-Type: application/json  Content-Length: 60059 |

### Response

|  |
| --- |
| 201 Created  Date: Tue, 02 Aug 2022 14:29:36 GMT  Content-Type: application/fhir+json; fhirVersion=4.0; charset=utf-8  Content-Length: 60362  Connection: keep-alive  ETag: W/\"ca635b24-de18-4fcd-8a60-2c22e798b9f8\"  Last-Modified: Tue, 02 Aug 2022 14:29:35 GMT  Location: https://api.service.nhs.uk/DiagnosticReport/c52c80dc-d553-4f94-9461-2a69b765fa7e/\_history/ca635b24-de18-4fcd-8a60-2c22e798b9f8  {      "resourceType": "DiagnosticReport",      "id": "c52c80dc-d553-4f94-9461-2a69b765fa7e",      "meta": {          "profile": [              "https://fhir.hl7.org.uk/StructureDefinition/UKCore-DiagnosticReport"          ],          "versionId": "ca635b24-de18-4fcd-8a60-2c22e798b9f8",          "lastUpdated": "2022-08-02T14:51:46.939+00:00"      },      "text": {          "status": "generated",          "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-DiagnosticReport-MichaelJonesReport-Example&quot; </p></div></div>"      },      "identifier": [          {              "system": "https://mft.nhs.uk/nwglh/lims",              "value": "DPYDGenomicReport",              "assigner": {                  "reference": "https://api.service.nhs.uk/Organization/1b81b2e9-d428-4cf6-8d9f-b3f3e3833430"              }          }      ],      "basedOn": [          {              "reference": "https://api.service.nhs.uk/ServiceRequest/7f70bb0c-5792-46d4-bbfd-c48cbcd3895b"          }      ],      "status": "final",      "category": [          {              "coding": [                  {                      "system": "http://terminology.hl7.org/CodeSystem/v2-0074",                      "code": "LAB",                      "display": "Laboratory"                  }              ]          }      ],      "code": {          "coding": [              {                  "system": "http://snomed.info/sct",                  "code": "4321000179101",                  "display": "Hematology report (record artifact)"              }          ]      },      "subject": {          "reference": "https://api.service.nhs.uk/Patient/f52cae9c-81eb-422c-be58-8363e72144aa"      },      "encounter": {          "display": "Encounter/UKCore-Encounter-OncologyConsultation-Example"      },      "issued": "2022-07-15T09:00:00Z",      "performer": [          {              "reference": "https://api.service.nhs.uk/Organization/1b81b2e9-d428-4cf6-8d9f-b3f3e3833430"          }      ],      "resultsInterpreter": [          {              "identifier": {                  "system": "https://fhir.nhs.uk/Id/ods-organization-code",                  "value": "REP"              }          }      ],      "specimen": [          {              "reference": "https://api.service.nhs.uk/Specimen/e64a0757-f092-47ff-ad36-e8ff0c3b6fa1"          }      ],      "conclusionCode": [          {              "coding": [                  {                      "system": "http://snomed.info/sct",                      "code": "738542003",                      "display": "Dihydropyrimidine dehydrogenase poor metabolizer (finding)"                  }              ]          }      ],      "presentedForm": [          {              "contentType": "application/pdf",              "language": "en-GB",              "data": "JVBERi0xLjQNJeLjz9<<DATA\_TRUNCATED>>0KMTE2DQolJUVPRg0K",              "size": 539588,              "title": "Genomic Report for DPYD deficiency for Michael Jones",              "creation": "2022-07-15T09:00:00Z"          }      ]  } |

## Report of Task complete

### Request

|  |
| --- |
| PUT /GMS/Task/a3f6af00-894e-4959-9530-d30d5b25893a HTTP/1.1  Host: api.service.nhs.uk  Content-Type: application/json  Content-Length: 2844  {  "resourceType": "Task",  "id": "a3f6af00-894e-4959-9530-d30d5b25893a",  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Task-DPYDSequencingTask-Example&quot; </p></div></div>"  },  "identifier": [  {  "system": "https://mft.nhs.uk/nwglh/lims",  "value": "DPYDSequencingTask"  }  ],  "instantiatesUri": "https://www.england.nhs.uk/wp-content/uploads/2020/11/1869-dpyd-policy-statement.pdf",  "partOf": [  {  "display": "Task/UKCore-Task-ParentTask-Example"  }  ],  "status": "completed",  "businessStatus": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/lab-status-codes",  "code": "ReportGenerated",  "display": "Report Generated"  }  ]  },  "intent": "filler-order",  "priority": "routine",  "code": {  "coding": [  {  "system": "http://hl7.org/fhir/CodeSystem/task-code",  "code": "fulfill",  "display": "Fulfill the focal request"  }  ]  },  "focus": {  "reference": "https://api.service.nhs.uk/ServiceRequest/7f70bb0c-5792-46d4-bbfd-c48cbcd3895b"  },  "for": {  "reference": "https://api.service.nhs.uk/Patient/f52cae9c-81eb-422c-be58-8363e72144aa"  },  "authoredOn": "2022-07-13T09:00:00Z",  "lastModified": "2022-07-13T09:00:00Z",  "requester": {  "reference": "https://api.service.nhs.uk/Practitioner/832d9c68-685f-4421-ac05-cc23d5c4e619"  },  "performerType": [  {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "159282002",  "display": "Laboratory technician (occupation)"  }  ]  }  ],  "owner": {  "reference": "https://api.service.nhs.uk/Organization/1b81b2e9-d428-4cf6-8d9f-b3f3e3833430"  },  "output": [  {  "type": {  "coding": [  {  "system": "http://hl7.org/fhir/resource-types",  "code": "DiagnosticReport",  "display": "DiagnosticReport"  }  ]  },  "valueReference": {  "reference": "DiagnosticReport/c52c80dc-d553-4f94-9461-2a69b765fa7e"  }  }  ]  } |

### Response

|  |
| --- |
| 200 OK  Date: Tue, 02 Aug 2022 15:00:18 GMT  Content-Type: application/fhir+json; fhirVersion=4.0; charset=utf-8  Content-Length: 2525  Connection: keep-alive  ETag: W/\"cacf28af-d71e-4a97-aa83-225418d9f6e1\"  Last-Modified: Tue, 02 Aug 2022 15:00:18 GMT  Location: https://api.service.nhs.uk/Task/a3f6af00-894e-4959-9530-d30d5b25893a/\_history/cacf28af-d71e-4a97-aa83-225418d9f6e1  {  "resourceType": "Task",  "id": "a3f6af00-894e-4959-9530-d30d5b25893a",  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-Task-DPYDSequencingTask-Example&quot; </p></div></div>"  },  "identifier": [  {  "system": "https://mft.nhs.uk/nwglh/lims",  "value": "DPYDSequencingTask"  }  ],  "instantiatesUri": "https://www.england.nhs.uk/wp-content/uploads/2020/11/1869-dpyd-policy-statement.pdf",  "partOf": [  {  "display": "Task/UKCore-Task-ParentTask-Example"  }  ],  "status": "completed",  "businessStatus": {  "coding": [  {  "system": "http://terminology.hl7.org/CodeSystem/lab-status-codes",  "code": "ReportGenerated",  "display": "Report Generated"  }  ]  },  "intent": "filler-order",  "priority": "routine",  "code": {  "coding": [  {  "system": "http://hl7.org/fhir/CodeSystem/task-code",  "code": "fulfill",  "display": "Fulfill the focal request"  }  ]  },  "focus": {  "reference": "https://api.service.nhs.uk/ServiceRequest/7f70bb0c-5792-46d4-bbfd-c48cbcd3895b"  },  "for": {  "reference": "https://api.service.nhs.uk/Patient/f52cae9c-81eb-422c-be58-8363e72144aa"  },  "authoredOn": "2022-07-13T09:00:00Z",  "lastModified": "2022-07-13T09:00:00Z",  "requester": {  "reference": "https://api.service.nhs.uk/Practitioner/832d9c68-685f-4421-ac05-cc23d5c4e619"  },  "performerType": [  {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "159282002",  "display": "Laboratory technician (occupation)"  }  ]  }  ],  "owner": {  "reference": "https://api.service.nhs.uk/Organization/1b81b2e9-d428-4cf6-8d9f-b3f3e3833430"  },  "output": [  {  "type": {  "coding": [  {  "system": "http://hl7.org/fhir/resource-types",  "code": "DiagnosticReport",  "display": "DiagnosticReport"  }  ]  },  "valueReference": {  "reference": "https://api.service.nhs.uk/DiagnosticReport/c52c80dc-d553-4f94-9461-2a69b765fa7e"  }  }  ],  "meta": {  "versionId": "cacf28af-d71e-4a97-aa83-225418d9f6e1",  "lastUpdated": "2022-08-02T16:26:57.322+00:00"  }  } |

## Notification of Diagnostic Report

### Request

|  |
| --- |
| POST /ehr/fhir HTTP/1.1  Host: www.christie.nhs.uk  Content-Type: application/fhir+json  Content-Length: 60362  {      "resourceType": "DiagnosticReport",      "id": "c52c80dc-d553-4f94-9461-2a69b765fa7e",      "meta": {          "profile": [              "https://fhir.hl7.org.uk/StructureDefinition/UKCore-DiagnosticReport"          ],          "versionId": "ca635b24-de18-4fcd-8a60-2c22e798b9f8",          "lastUpdated": "2022-08-02T14:51:46.939+00:00"      },      "text": {          "status": "generated",          "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-DiagnosticReport-MichaelJonesReport-Example&quot; </p></div></div>"      },      "identifier": [          {              "system": "https://mft.nhs.uk/nwglh/lims",              "value": "DPYDGenomicReport",              "assigner": {                  "reference": "https://api.service.nhs.uk/Organization/1b81b2e9-d428-4cf6-8d9f-b3f3e3833430"              }          }      ],      "basedOn": [          {              "reference": "https://api.service.nhs.uk/ServiceRequest/7f70bb0c-5792-46d4-bbfd-c48cbcd3895b"          }      ],      "status": "final",      "category": [          {              "coding": [                  {                      "system": "http://terminology.hl7.org/CodeSystem/v2-0074",                      "code": "LAB",                      "display": "Laboratory"                  }              ]          }      ],      "code": {          "coding": [              {                  "system": "http://snomed.info/sct",                  "code": "4321000179101",                  "display": "Hematology report (record artifact)"              }          ]      },      "subject": {          "reference": "https://api.service.nhs.uk/Patient/f52cae9c-81eb-422c-be58-8363e72144aa"      },      "encounter": {          "display": "Encounter/UKCore-Encounter-OncologyConsultation-Example"      },      "issued": "2022-07-15T09:00:00Z",      "performer": [          {              "reference": "https://api.service.nhs.uk/Organization/1b81b2e9-d428-4cf6-8d9f-b3f3e3833430"          }      ],      "resultsInterpreter": [          {              "identifier": {                  "system": "https://fhir.nhs.uk/Id/ods-organization-code",                  "value": "REP"              }          }      ],      "specimen": [          {              "reference": "https://api.service.nhs.uk/Specimen/e64a0757-f092-47ff-ad36-e8ff0c3b6fa1"          }      ],      "conclusionCode": [          {              "coding": [                  {                      "system": "http://snomed.info/sct",                      "code": "738542003",                      "display": "Dihydropyrimidine dehydrogenase poor metabolizer (finding)"                  }              ]          }      ],      "presentedForm": [          {              "contentType": "application/pdf",              "language": "en-GB",              "data": "JVBERi0xLjQNJeLjz9<<DATA\_TRUNCATED>>0KMTE2DQolJUVPRg0K",              "size": 539588,              "title": "Genomic Report for DPYD deficiency for Michael Jones",              "creation": "2022-07-15T09:00:00Z"          }      ]  } |

### Response

Note: This is a response from the requester to the GMS broker and there is as yet not requirement that the response be consumed by the central proker

|  |
| --- |
| 200 OK |

## Final marking of Request as complete

### Request

|  |
| --- |
| PUT /GMS/ServiceRequest/7f70bb0c-5792-46d4-bbfd-c48cbcd3895b HTTP/1.1  Host: api.service.nhs.uk  Content-Type: application/json  Content-Length: 2472  {  "resourceType": "ServiceRequest",  "id": "7f70bb0c-5792-46d4-bbfd-c48cbcd3895b",  "text": {  "status": "generated",  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-ServiceRequest-MichaelJonesDYPDRequest-Example&quot; </p></div></div>"  },  "identifier": [  {  "system": "https://www.christie.nhs.uk/ehr",  "value": "LabOrder123456",  "assigner": {  "reference": "urn:uuid:9af435fd-4bbf-4cc6-81c6-9f2800c2c513"  }  }  ],  "instantiatesUri": [  "https://www.england.nhs.uk/wp-content/uploads/2020/11/1869-dpyd-policy-statement.pdf"  ],  "basedOn": [  {  "display": "UKCore-CarePlan-PancreaticCancerPlan-Example"  }  ],  "status": "completed",  "intent": "order",  "category": [  {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "108252007",  "display": "Laboratory procedure"  }  ]  }  ],  "priority": "routine",  "doNotPerform": "false",  "code": {  "coding": [  {  "system": "https://www.england.nhs.uk/publication/national-genomic-test-directories",  "code": "M219.3",  "display": "DPYD hotspot"  }  ]  },  "subject": {  "reference": "urn:uuid:41e4b604-37f3-4799-a6b3-ab5b104f3c97"  },  "encounter": {  "display": "UKCore-Encounter-OncologyConsultation-Example"  },  "authoredOn": "2022-07-11T09:00:00Z",  "requester": {  "reference": "urn:uuid:6e1a8ea3-3a59-40aa-b943-5c896a30e43a"  },  "performer": [  {  "reference": "urn:uuid:309aba59-ce1a-4ee6-bc82-ab44fa1bf904"  }  ],  "reasonCode": [  {  "coding": [  {  "system": "http://snomed.info/sct",  "code": "363418001",  "display": "Malignant tumor of pancreas (disorder)"  }  ]  }  ]  } |

### Response

|  |
| --- |
| 201 Created  Date: Tue, 02 Aug 2022 15:14:59 GMT  Content-Type: application/fhir+json; fhirVersion=4.0; charset=utf-8  Content-Length: 2180  Connection: keep-alive  ETag: W/\"f94eba57-ae87-4fe1-a6e7-992337a8763b\"  Last-Modified: Tue, 02 Aug 2022 15:14:59 GMT  Location: https://api.service.nhs.uk/ServiceRequest/7f70bb0c-5792-46d4-bbfd-c48cbcd3895b/\_history/f94eba57-ae87-4fe1-a6e7-992337a8763b  {      "resourceType": "ServiceRequest",      "id": "7f70bb0c-5792-46d4-bbfd-c48cbcd3895b",      "text": {          "status": "generated",          "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><div style=\"display: inline-block; background-color: #d9e0e7; padding: 6px; margin: 4px; border: 1px solid #8da1b4; border-radius: 5px; line-height: 60%\"><p style=\"margin-bottom: 0px\">Resource &quot; UKCore-ServiceRequest-MichaelJonesDYPDRequest-Example&quot; </p></div></div>"      },      "identifier": [          {              "system": "https://www.christie.nhs.uk/ehr",              "value": "LabOrder123456",              "assigner": {                  "reference": "urn:uuid:9af435fd-4bbf-4cc6-81c6-9f2800c2c513"              }          }      ],      "instantiatesUri": [          "https://www.england.nhs.uk/wp-content/uploads/2020/11/1869-dpyd-policy-statement.pdf"      ],      "basedOn": [          {              "display": "UKCore-CarePlan-PancreaticCancerPlan-Example"          }      ],      "status": "completed",      "intent": "order",      "category": [          {              "coding": [                  {                      "system": "http://snomed.info/sct",                      "code": "108252007",                      "display": "Laboratory procedure"                  }              ]          }      ],      "priority": "routine",      "doNotPerform": **false**,      "code": {          "coding": [              {                  "system": "https://www.england.nhs.uk/publication/national-genomic-test-directories",                  "code": "M219.3",                  "display": "DPYD hotspot"              }          ]      },      "subject": {          "reference": "urn:uuid:41e4b604-37f3-4799-a6b3-ab5b104f3c97"      },      "encounter": {          "display": "UKCore-Encounter-OncologyConsultation-Example"      },      "authoredOn": "2022-07-11T09:00:00Z",      "requester": {          "reference": "urn:uuid:6e1a8ea3-3a59-40aa-b943-5c896a30e43a"      },      "performer": [          {              "reference": "urn:uuid:309aba59-ce1a-4ee6-bc82-ab44fa1bf904"          }      ],      "reasonCode": [          {              "coding": [                  {                      "system": "http://snomed.info/sct",                      "code": "363418001",                      "display": "Malignant tumor of pancreas (disorder)"                  }              ]          }      ],      "meta": {          "versionId": "f94eba57-ae87-4fe1-a6e7-992337a8763b",          "lastUpdated": "2022-08-02T15:14:59.703+00:00"      }  } |

# Appendix A: DPYD Use Case description



# Appendix B: Genomic Medicine Service scoping document

