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**2018 PDS Integration Requirements**

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|  | 2018 PDS Integration Requirements Matrix v1.0 |
|  | 2018 PDS Integration Foundation Module – Baseline Index v1.0 |
|  | NPFIT-FNT-TO-DSD-0120.06 Business Use Case: Sensitive Patients – Local Business Processes v1.0 |
|  | NPFIT-SI-SIGOV-0073.05 Guidance on Implementing RBAC for PSIS and PDS v2.1 |
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Glossary of Terms

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| --- | --- |
| Term / Abbreviation | What it stands for |
| Attribute | A ‘property’ of an object, e.g. a *use* is an attribute which defines the type of an object. |
| Birth Notification Application (BNA) | The Birth Notification Application (BNA) is a system available from within the Summary Care Record application (SCRa – see below) to allow maternity units which are not integrated with PDS to register births on PDS. It can also be used by maternity units which are integrated with PDS to handle certain exceptional circumstances. It is also available for use by Child Health Organisations which are not integrated with PDS. |
| Candidate Record | A patient record, stored on the LPI, which meets certain minimum criteria and can therefore be used for confirmation of patient identity. |
| Child Health Organisation (CHO) | An organisation responsible for the monitoring of continuing care for a child until their 17th birthday. |
| Clinical Commissioning Group (CCG) | An organization responsible for commissioning primary care services. |
| Confusion case | A PDS record which has become incorrectly used for two or more different patients and may contain updates relating to each. This may occur where the patients have similar demographic details and the user selects the wrong one. |
| De-coupled Record | A record which is explicitly exempt from synchronisation, normally because of a significant data anomaly, e.g. erroneous death notification on the PDS.  A de-coupled record is dependent on change of data on the PDS, e.g. reversal of death status, and therefore distinct from a record in a ‘deferred’ state, which is merely awaiting synchronisation. |
| Demographics Batch Service (DBS) | The DBS provides a mechanism for non-Spine-compliant organisations to perform batch uploading of files to the Spine service, in order to trace or verify the NHS Number for each patient in the batch.  The DBS provides a mechanism for Spine to receive and process these files as well as to communicate the success or failure of this processing to the DBS Operators via email.  DBS ensures that batch requests do not disrupt the standard operation of the Spine service. |
| Demographic Spine Application (DSA) | The Demographic Spine Application (DSA) is used by PDS National Back Office (NBO) staff to maintain PDS information including sensitive data items such as Date of Death and the Information Sensitivity Indicator. |
| Electronic Prescription Service (EPS) | A system which allows the electronic transfer of prescriptions from GP Practices to Pharmacies. It also provides enhanced IT support to community pharmacists to enable them to play an expanded role in primary healthcare, and further supports re-engineered business processes by reimbursement agencies. |
| Elements | Elements are parts of a complex object, such as an address, which have numerous sub-components, e.g. postcode is an element of an address. |
| e-Referral Service (e-RS) | A replacement for the Choose and Book service, combining electronic appointment booking with a choice of time date and place for first outpatient and other appointments. |
| Fast Healthcare Interoperability Resources (FHIR) | A next generation standards framework created by HL7 which combines the best features of other HL7 products whilst leveraging the latest web standards and applying a tight focus on implementability. |
| GP-to-GP (GP2GP) | GP2GP enables patients' electronic health records to be transferred directly and securely between GP practices. It improves patient care as GPs will usually have full and detailed medical records available to them for a new patient's first consultation. |
| Healthcare Professional (HCP) | Any member of NHS staff directly involved in patient care. |
| Key-Fields | A collection of data fields which, when a change is detected on synchronisation, should prompt user confirmation/acceptance.  The key-fields are currently defined as death status and gender. |
| Local Back Office (LBO) | An administrative function at organisation level, e.g. secondary care data quality team, concerned with the maintenance and data quality of records on local systems. |
| Local Patient Index (LPI) | A local data store of patient demographic information, commonly known as a Master Patient Index (MPI), but referred to here as ‘local’ to differentiate it from the PDS. |
| Local System | Any system e.g. PAS, GP Practice System that connects to the PDS. |
| Loosely coupled | This term is used in the context of a system updating PDS whereby the system should not force the user to wait until a response has been received from PDS. The user can carry on with other activities whilst the system awaits the response in the background. |
| Message Implementation Manual (MIM) | The MIM provides information to implementers regarding the use of HL7v3 messages, covering a number of domains including PDS. |
| National Back Office (NBO) | Also known as PDS Back Office, an administrative function at national level concerned with the maintenance and data quality of records on the PDS. |
| National Health Application and Infrastructure Services (NHAIS) | NHAIS is the responsible IT system for patient registrations in Primary Care and a number of other services including payments to GPs. |
| Object | An object is a data element on a patient record that must be updated in its entirety, e.g. an address is an object consisting of an id, a type, 5 lines of address, a postcode, a PAF key and effective date information. |
| Office of National Statistics (ONS) | The government body responsible for reporting the number and types of births in England and Wales. |
| Partner Child Health Organisation (PCHO) | In the context of birth notifications, there are two types of Child Health Organisation. The PCHO is the *Partner* Child Health Organisation, meaning the CHO affiliated to the organisation where the birth took place. |
| PDS Object Identifier (UID) | An alphanumeric identifier for an object on the PDS. PDS Object Identifiers are returned to the local system in the “root” and “extension” attributes of the id element. They can be considered unique on a patient record, but should not be relied upon to be unique on the PDS. |
| Postcode Address File (PAF) | A database of UK residential and business address data. |
| QAS | A proprietary postcode and address software tool. |
| Requirements Traceability Matrix (RTM) | The RTM contains a listing of all PDS Integration Requirements and provides a more concise format for suppliers to indicate their conformance with those requirements. |
| Responsible Child Health Organisation (RCHO) | The *Responsible* Child Health Organisation, meaning the CHO that will monitor the infant’s development – normally the CHO that covers the mother’s place of residence. |
| Role Based Access Control (RBAC) | RBAC is the process through which a national set of job roles, activities and workgroups can be applied to grant users access to functionality and indirectly to data within Spine services. |
| Serial Change Number (SCN) | The Serial Change Number (SCN) is used to control the synchronisation of data between PDS and local systems.  A SCN is generated by the PDS for each patient record. Every time the PDS is updated, the SCN is incremented. |
| Spine-compliant / Spine-enabled | This refers to systems which have achieved a degree of direct integration with PDS. |
| Spine Directory Service (SDS) | A repository of Spine reference data, including information about organisations, messaging endpoints and smartcard users. |
| Spine Mini Service Provider (SMSP) | A supplier of third party software to provide solutions that provide a greatly simplified interface for accessing a subset of Spine services. |
| Split-screen | The primary mechanism for manually resolving discrepancies in a patient record between the PDS and a local system. Also known as comparison screen. |
| Summary Care Record (SCR) | The Summary Care Record (SCR) is a secure, electronic patient record that contains key information derived from patients’ detailed GP records. It is accessed in emergency and unplanned care scenarios, where such information would otherwise be unavailable. |
| Summary Care Record application (SCRa) | The SCRa allows a user to search for a patient on PDS and view their SCR. |
| Suppliers | A common term to include suppliers of systems that integrate with the PDS. |
| Synchronisation | The process of either inserting a new patient record from the PDS onto the Local Patient Index, or if one exists there already, ensuring the local record and the PDS record are the same. |
| System Providers | A common term to include local system providers and Spine. |
| ‘Traced & Verified’ | This relates to an NHS Number Status Indicator Code value of ‘01’ (Number present and verified). Held against local records that have been successfully traced against a national source of NHS Numbers (now PDS), the code is used for various purposes in secondary care systems. The process of maintaining this code is outside of the scope of these requirements. |
| Tracing | The process of querying for a patient record using a variety of demographic or identifier data, either on the local system or on the PDS. |

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# Introduction

## Background

This new version of PDS Integration Requirements (previously known as PDS Compliance Baseline) has been developed for a number of reasons:

* To reduce the amount of documentation that suppliers need to read.
* To clarify requirements that have been misunderstood in the past.
* To incorporate latest thinking.
* To attempt to address areas affecting data quality on PDS.

In summary the main changes are:

* Merging of the separate requirements areas (tracing, synchronisation etc) into a single document.
* Providing a single accompanying guidance document containing information about Spine behaviour, a dataset for each type of PDS interaction and a Data Dictionary.
* Less prescriptive about tracing within the local system.
* Support for tracing on PDS by NHS Number using the PDS Retrieval in preference to the PDS Cross Check Trace, where a suitable confirmation step is also used.
* Separation of requirements that update the local system from requirements relating to updating PDS. This allows for a clearer Requirements Traceability Matrix for PDS read only type systems.
* Reorganisation of requirements relating to Local Back Office functions, including moving invalid record handling and NHS number allocation to this area.
* Support for systems to allocate their own object identifier when adding a multiple data item to PDS (to make use of new Spine functionality in this area).
* Reduction in the number of temporary and correspondence addresses that may be synchronised with PDS.
* Additional update requirements in areas which have been known to cause data quality issues on PDS, e.g. mandating of both business effective from and to dates for temporary and correspondence addresses; tighter definition of acceptable telecoms.
* No longer permitting the identification of related persons by NHS number when updating PDS.
* Clarification of requirements for sending data to downstream systems with sensitive records.
* Allowing an alternative approach to sensitive record handling by local systems where a clinical safety assessment deems this appropriate.

## Purpose of Document

This document forms the PDS integration baseline for local systems wishing to integrate with the PDS.

It defines the following processes:

* Tracing: searching for, recognising and confirming patient identity for a record held either locally or on the PDS.
* Synchronisation: the process that begins with the selection of a patient record from a search results screen. At significant events, described later in this document, locally-held records must be synchronised with their PDS counterparts to ensure the latest demographics exist in both locations. As part of this definition:
* It describes how a new record should be added to a Local Patient Index (LPI) or local ‘cache’.
* It explains how an initial synchronisation of the PDS with data held in the LPI must be performed.
* For subsequent synchronisations, it shows how changes to the master record on the PDS are to be detected and applied to the LPI.
* Flagged records: the process of detecting a record flagged as ‘invalid’ or ‘sensitive’ on Spine and how these records should be managed.
* Updates: the process of updating a patient’s demographic record on the PDS.
* Local Back Office: the actions that are required to manage such scenarios as duplicate and confused local records, processes around allocating new PDS records for patients etc. These actions are best undertaken in a ‘back office’ environment.
* Birth Notifications: the maternity unit process for creating a new record on PDS for a birth and the Child Health Organisation actions required for receiving new births from the Spine.

This document outlines a ***preferred model*** and lists its requirements in terms of that model (MUST, SHOULD etc.). However, the Demographics Team will consider and approve divergence from the preferred approach on a case-by-case basis, if the spirit of the chosen approach is preserved and the following key drivers are respected:

* Patient Safety
* Information Governance
* Data Quality

## Exclusions

This document is concerned with direct integration using MIM messages. It does not cover requirements or expectations of systems interacting with PDS via SMSP or FHIR or DBS. Discussion of PDS messages, the PDS message processing and data structures can be found in the *PDS Integration Guidance* document.

This document does not consider the structure and make-up of the Local Back Office, commonly a Data Quality function, other than it is assumed that one should exist. Organising this entity is the responsibility of the host organisation and system provider.

This document does not consider the requirements for Child Health systems, over and above their integration with the PDS for the purpose of new birth notification. Additional Child Health requirements continue to be found in the applicable Community Child Health Specifications.

## Audience

This document is of interest to the following types of reader:

* Architects and designers involved in the supply of software that integrates with PDS
* Readers considering the appropriateness of supplier systems for clinical purposes
* Analysts concerned with the security and quality of patient records
* Evaluators of system compliance and testing teams
* Managers analysing the effect of new systems on local business processes

## Content

This document comprises the following sections:

* An overview, outlining guiding principles and key required functionality.
* Scenarios:
* Tracing: illustrating interactive and non-interactive uses of the various trace mechanisms
* Synchronisation: illustrating three different types of synchronisation (no record present on the LPI, an initial synchronisation and a subsequent synchronisation)
* Flagged Records: highlighting some of the options for handling sensitive and invalidated records
* Local Back Office: illustrating some of the various types of processing that would be performed by a Local Back Office (e.g. handling invalid records and performing NHS Number allocations)
* Updates: illustrating the various types of update that can be performed
* Birth Notifications: illustrating notification where maternity or Child Health Organisation systems are Spine-compliant.
* Use Cases, indicating preferred functionality.
* A requirements list.
* Appendix of additional information, including a table of data that can be synchronised with PDS.

# Overview

## Tracing

The following examples are likely to require direct patient tracing on the PDS as they can reveal that a patient is ‘unknown’ to the Local Patient Index (LPI):

* Registration with a new GP Practice
* Attendance at an ‘NHS Drop-In Centre’
* Visit to an ‘Accident & Emergency’ or ‘Minor Injuries’ department
* Contacting an out-of-hours service such as 111
* Scheduling a non-e-RS referral/admission
* Adding a ‘nominated pharmacy’ from a dispensing system

The best way for a system to check whether a patient is ‘known’ within the organisation, is to check its own LPI first. The preferred model of PDS interaction reflects this ‘check locally, then the PDS’ strategy. In this way tracing *on the PDS* can be restricted to appropriate users.

The act of ‘confirming’ that a patient record is truly for the presenting patient is essential to ensuring that care is given to the correct patient.

## Synchronisation

Local systems should synchronise any locally-held copy of a patient record with its counterpart on the PDS at one or more of the following events:

* At the commencement of an episode. This includes:
* Registering or reception at a GP surgery
* Reception at an outpatient clinic
* Beginning of any episode of unscheduled care where patient identity is known
* On referral for assessment in Social Care where consent to access NHS data has been given
* Prior to using patient communication information. This includes:
* Prior to using locally-stored patient telephone numbers or addresses
* Prior to sending correspondence to a patient
* Prior to inpatient admission and discharge. This includes:
* Prior to the generation of messages containing new or changed demographics to downstream, local systems
* Prior to updating any information for the patient on Spine, including any update of the PDS itself
* Prior to any retrieval of clinical or medication information stored on external Spine services including:
* e-RS, SCR, GP2GP and EPS
* But may exclude retrievals of clinical data during an episode of inpatient care.

## Flagged Records

In various scenarios, PDS may return four types of flagged record:

* An ‘Invalid’ flagged PDS record indicates that the National Back Office (NBO) have investigated a specific record and concluded that the record should no longer be in use. There may or may not be a new NHS Number allocated in relation to the old record but no link is permitted between the old and the new NHS Numbers.
* A ‘Superseded’ flagged PDS record indicates that a person has been given another NHS Number. Typically this is where a duplicate record exists for the person and NBO have retired one record. Therefore the former number (the superseded number) has been retired in favour of a new one. In this instance, there is a direct association between the two. A PDS Retrieval on the superseded NHS Number will return the new, superseding NHS Number.
* A ‘Business’ flagged PDS record indicates that the record is under review for one of a variety of reasons. It is temporarily set by NBO. See the *PDS Integration Guidance* document for further details. It can be beneficial to this review if the local system user is prompted to check the patient’s details when they present for care.
* ‘Sensitive’ flagged records will return no ‘location’ type information. Whilst these details may be present on PDS and managed by NBO, PDS messaging will not return such details as: address, telecoms, GP practice, related persons.

It should be noted that the PDS requirements described later, *do not mandate* the business processes around treatment of a sensitive record; this should be considered a business implementation issue. The requirements do, however, propose a model which may be used to appropriately shield sensitive location data on the local system.

## Updates

Updates to a patient demographic record can occur at any point that a record is consulted by NHS staff, providing they have the appropriate authority to do so. The ‘Significant Events’ make explicit the need for a synchronisation prior to a PDS update. It is important that not only is the latest Serial Change Number (SCN) used in the update, but that any discrepancies in the data are resolved before a particular data item is changed.

This document covers the requirements which apply after a local system attempts to persist altered data. Usually this is after an end-user has manually pushed a ‘Save’ or ‘Update’ button, but may also occur in the course of automatic synchronisation activities.

Updates may be made in a number of scenarios:

* A ‘simultaneous’ update to the local and/or the PDS record during the course of initial synchronisation. On initial synchronisation a split-screen mechanism must be used to determine the most up-to-date information for a patient, which could be on the LPI or PDS.
* An ‘automatic’ update to the local record during the course of subsequent synchronisations. The presence of the Serial Change Number (SCN) in the local database enables subsequent synchronisations to be processed automatically. The presence of a local SCN gives the security of knowing this record has previously been matched to a counterpart on the PDS and from that point on the record can be considered ‘integrated’.
* A ‘maintenance’ update to a PDS record, bringing this in line with changed local data.
* An ‘allocation’ update, involving the creation of a new record on the PDS. Allocation of an NHS Number is not related to the eligibility of a patient for care, but it is a prerequisite for a record’s existence on the PDS and full participation in Spine, i.e. in order to create a record on the PDS, a unique key – the NHS Number – must be generated.

## Birth Notifications

### Maternity System

PDS has the ability to issue an NHS Number for a baby and inform Spine-compliant maternity and Child Health Organisations (CHOs). Non-Spine-compliant Maternity and CHO functions continue to exist. These will use the Birth Notification Application (BNA) to manage information flows.

Briefly the process is:

* A Spine-compliant maternity system or the BNA will send a *PDS Create Initial Record Request* to PDS
* Maternity systems will need to determine the applicable Child Health Organisation for a birth notification and send the SDS identifier to Spine
* If the create is successful, a *PDS Registration Request Accepted* message is returned
* A PDS *Create Initial Record Request Rejected (Duplicate Found)* will be returned if a possible or exact match is found on PDS
* The PDS will populate a GP code associated with the Mother’s GP Practice (which will be a default GP code where no individual GP is identified)
* The Partner Child Health Organisation system is then informed of the Birth Notification
* If the Child Health Organisation system is not Spine-compliant, the organisation can use the BNA to access its Birth Notifications
* New Born Screening and ONS are also informed by Spine.

# Scenarios

## Tracing

### Visiting A&E

Joe is a contractor working away from home. Whilst installing cables, Joe badly cuts his hand. He is rushed to A&E and at the A&E admissions desk provides the triage nurse Anne with his details.

Anne types into her local system the details that Joe has given her: his surname, forename (as “Joe”), date of birth and gender. The local system performs an initial look-up on its own database to see if Joe has had previous treatment at the hospital, but finds no record.

Because Anne entered enough mandatory information to perform a Simple Trace on the PDS, the local system is able to perform the next step without her intervention and a *PDS Simple Trace Query* is duly sent off. Unfortunately, the *Query Act Failed* message returned indicates that there are no records on the PDS which match the details Joe had provided.

Wondering if she got something wrong, Anne asks if Joe might be registered as “Joseph” or other variant of “Joe”. Anne changes the forename she had entered on the search screen to “Jo\*”, and re-submits the search. The local system again searches in the local database but finds nothing. Because of the presence of a wildcard the system this time sends off a *PDS Advanced Trace Query*. The *PDS Advanced Trace Query Response* returned contains two matching records.

A summary of the details of both records are displayed to Anne, together with a warning against inappropriate use and indicating that the trace activity is audited.

She asks Joe to confirm his address and he is able to respond with a Leeds address matching one of the candidate records on her screen. Anne selects it and the full details for the record are displayed. Anne confirms that this is the correct record.

### Attending an Outpatient Appointment

Mr Simon Randle has been referred to a specialist clinic by his GP.

Simon now presents in the reception area of the clinic. The receptionist Martin takes Simon’s confirmation letter and seeing the NHS Number at the top, types that number into his local system to search for the record. The local system performs a look-up on its own database and finds a record for Simon. The record holds a good cross-section of demographics as it has been populated from the GP’s referral letter and it also includes an NHS Number.

Martin asks Simon to confirm his date of birth and postcode and when Simon is able to respond with the details written on Martin’s screen, he is confident that this record is indeed the correct one and can select it.

### Adding a Nominated Pharmacy

Chris Read is a community pharmacist at Able Pharmacies. When Jane Poole, a new patient, comes in, Chris suggests that she nominates them as her preferred pharmacy. Jane agrees and provides Chris with her name and date of birth.

Using his pharmacy system, Chris searches the local database for Jane. When no match to her details is found, the system automatically sends a *PDS Simple Trace Query* to the PDS using the name, gender and date of birth that Chris had typed into the search screen

Unfortunately, the *Query Act Failed* message returned indicates that more than one patient exists with a match to those criteria. Asking Jane for her postcode, a second *PDS Simple Trace Query* is triggered. This time the PDS responds with a single patient match which the local system can display. Chris asks Jane to confirm the middle name shown on his screen, and when Jane correctly tells him it is ‘Sarah’, he is confident he has found a match and selects the record.

The pharmacy system can continue with its work of retrieving the full PDS record and updating Jane's nominated pharmacy details.

## Synchronisation

### Visiting A&E

Joe’s record on the PDS has been successfully traced by triage nurse, Anne (see §3.1.1 above). His record is displayed on the A&E system search screen and selected.

Using the NHS Number returned in the trace, the local system sends a *PDS Retrieval Query* message to the PDS and receives a single record in return. The local system checks the LPI using firstly the NHS Number, and secondly the Date of Birth, Gender and Family Name to ensure no potential duplicate records already exist.

None are found so the local system inserts the PDS-retrieved record into the LPI and Anne can continue checking Joe into the waiting room.

### Attending an Outpatient Appointment

Mr Simon Randle has presented for his Outpatient Appointment at a clinic and the receptionist Martin has successfully located his record on the clinic Patient Administration System. Martin has confirmed that the record belongs to Simon (see §3.1.2 above).

The local system sends a *PDS Retrieval Query* message to the PDS using the NHS Number stored in the local database.

As the locally-held Serial Change Number (SCN) is 0, meaning this is an initial synchronisation, a split-screen is presented to Martin and several differences are shown. Amongst other things, the PDS holds a different home telephone number for him. Martin asks Simon to confirm which number is correct and he selects the PDS one. Martin then accepts the information, by selecting an ‘accept PDS data’ check-box against the ‘Home Telephone’ on the split-screen.

The local system updates the number on Simon’s local record and Martin can continue to record Simon’s arrival at the appointment.

### Visiting the Out-patient Clinic

Eric Smith is a regular visitor to an out-patient clinic. Eric attends and the receptionist Madeline looks up his record on the PAS system.

The local system sends a *PDS Retrieval Query* message to the PDS using the NHS Number stored in the local database. When a single record is returned, the system checks for the presence of error code 17 to ensure the NHS Number has not been superseded prior to synchronising the records.

At a previous appointment, the PDS and LPI records had been confirmed as being for Eric and a manual initial synchronisation of data between the records had been performed. Thus the SCN was greater than 0.

The local system detects that the Serial Change Number on the PDS is now higher than the one it has stored locally, indicating that the PDS has been updated elsewhere. Because the initial synchronisation has taken place and no changes have been made to key-fields, the local system knows that it is safe to apply an automatic update to the LPI for the out-of-sync data and update the local SCN.

### Appointment Letters

Myton General recently went live with a new Spine-compliant Patient Administration System. The hospital policy is to print all appointment letters in an overnight batch so as to minimise the impact on business activity. Each day, the hospital receives around 500 referrals, to which can be added follow-up appointments etc. As a result, the average size of the nightly letter-run amounts to 750 appointment letters that must be generated and printed. On this particular night, exactly 750 appointment letters need to be printed:

* 400 were received via the e-RS system, successfully synchronised on arrival and now have a locally-stored SCN
* 100 resulted from ‘conventional’, paper-based referrals and were synchronised at the time of booking with the PDS
* 200 follow-up appointments for patients who have attended the hospital since ‘go-live’ and for whom a locally-stored SCN now exists
* 50 follow-up appointments which date from before the new PAS ‘go-live’ and have therefore never been synchronised (SCN of 0).

At 1am, the print server begins its mining of the local database and calculates which of the records it must synchronise with PDS to retrieve the most up-to-date address. It finds the 700 patient records with a locally stored SCN to include in its batch and send these records to the print server’s synchronisation queue:

* 400 successfully synchronised as a result of e-RS activity
* 100 ‘conventional’ referrals where the records were retrieved from PDS
* 200 follow-up appointments for patients attending the hospital since ‘go-live’

The 50 patient records that are unsynchronised will use local data for the letters.

For each record in the synchronisation queue, the server uses the local NHS Number to build a *PDS Retrieval Query* message. For each query, it records the local index and SCN of the record against the message ID it has just created – this ‘list’ is used to process the response. The system wraps all the queries in a *Send Batch Wrapper* and submits it to PDS in a single request. PDS processes each retrieval request as quickly as it can and wraps the responses into a *Send Response Batch Wrapper* which is returned asynchronously to the PAS.

On receipt of the response, the local system retrieves the list it had stored earlier and for each *sending* message ID in that list it examines the PDS response, identified by the *requesting* message ID. 100 records have been modified on PDS since they were used on the local system and these are overwritten locally with the PDS record. The remaining 600 are unchanged.

The entire PDS interaction completed, the print server can build its appointment letters. Using the addresses now stored in the local database, it creates a full print run for all 750 appointments: the 700 previously synchronised patients plus the 50 patients with follow-up appointments that had not been synchronised.

## Flagged Records

### Registering with a New GP

Mike has his record flagged as sensitive on the PDS. When he reports to the front-desk of his local GP, the record that the receptionist Constance traces on the PDS shows no location data. Though it is not explicitly highlighted on screen, the message returned from the PDS trace was marked with a *justifyingDetectedIssueEvent* code 5.

Nevertheless confident that it is his record, she selects it and an advisory message is displayed stating that location data for the record is restricted and that she should follow local procedures for the treatment of such patients.

The local system synchronises the record, retrieving what it can from the PDS and inserting it into its database. The *PDS Retrieval Query Response* was also marked with a *justifyingDetectedIssueEvent*, this time a 9, denoting a sensitive record.

The local system then restricts the ability to amend location information on the record to the appropriate RBAC activity. Constance does not have this right, but she is nevertheless able to complete a ‘partial’ registration locally.

Local procedures for such patients instruct Constance to ask her colleague Barbara, who does have the appropriate activity in her role profile, to add contact information for Mike to the local record. Barbara explains to Mike that this information will be restricted only to her and National Back Office and asks him to provide an address where the surgery can write to him.

Mike will provide her with a mobile telephone number, but is reluctant to give her an address - he does however agree that Barbara can keep a paper copy in the surgery. Barbara needs to add an address to the system for NHAIS purposes and so she selects the GP practice address from her PAF software and adds Mike’s mobile telephone number to the record. She is able to complete the registration for NHAIS and the local system sends off the ‘Acceptance’ message. No update is sent to the PDS, but NHAIS will forward the change in Mike’s address.

### Attending an Outpatient Appointment

Darren registered with a new Practice last week. The receptionist Jenny, not managing to trace his record on the PDS, had requested the Practice administrator to reconfirm the PDS tracing and she then allocated him a new NHS Number. Darren is referred to the Urology clinic with this record, not knowing that in fact a record for him already existed on PDS.

When the National Back Office received the new allocation, they looked into the case and discovered an existing record for Darren. They logically deleted the new record on the PDS as it had no real data associated with it. Darren’s new, duplicate record was marked as invalid using the Demographics Spine Application and no details were brought forward from the duplicate to the real record for him.

When Darren presents for his appointment the local record was brought up and the system attempted to synchronise the record with the PDS. It sends the locally stored NHS Number to the PDS in a *PDS Retrieval Query*, but the *Query Act Failed* message that is returned from Spine indicates that the NHS Number being used is invalid – the message containing a *justifyingDetectedIssueEvent* code of 22.

The system immediately informs Jenny that the NHS Number is invalid, but that the record should continue to be used. It marks the record on the local database so that it will no longer be considered for synchronisation and sends a system alert to Local Back Office staff informing them of the record marked as Invalid.

The Local Back Office re-trace Darren’s record on PDS using the demographics. In this case the original record is successfully traced on PDS. The system then ensures that the NHS Number does not already exist on another local record, which would need to trigger a duplicate resolution process, and applies it to Darren’s local record. A split-screen synchronisation then takes place and the SCN is updated such that business-as-usual synchronisations can resume.

## Updates

### Synchronisation

Eve Ryman has previously attended a hospital clinic. She attends a follow-up appointment at the clinic and finds that a new Spine-compliant IT system has now been implemented.

The receptionist, Marvin, traces Eve’s record on the local system which then attempts to synchronise this newly migrated record (from the previous non-Spine-compliant system) with the PDS. The PAS system retrieves the full record from the PDS using the locally stored NHS Number.

A split-screen of the information on the local and PDS sources is shown. When Marvin examines the demographic data, he can see that Eve’s GP Practice and usual address are different. Marvin questions her and finds that her GP Practice and usual address are indeed correct on the PDS, but that her telephone numbers are more correct on the PAS system.

Marvin quickly selects the appropriate data on his split-screen and hits the ‘Update’ button. He can then move on to check Ms Ryman in for her appointment.

The hospital system updates those values locally which the PDS holds correctly. It then builds a *PDS General Update Request* message containing only those items required to update PDS. The SCN is set to 0 whilst the update is processed. The message is sent off and a few seconds later an *Application Acknowledgement* is returned containing a new Serial Change number to be inserted into the local database.

### Death Update

Unfortunately Dave North‘s health declined and he died at home. Dr Earl, his GP, was called to the house, confirmed the death and noted the time of death and circumstances.

On returning to the surgery he updates Dave’s details on the local system. The practice system finds Dave’s record locally and retrieves the PDS version. No updates to Dave’s demographic record have occurred since he was last in.

The doctor notes the time of death on the local system and it builds a *PDS General Update Request* adding a *deceasedTime and deathNotification.value* of ‘1’ (informal). Both of these it marks with an “updateMode” of ‘added’ and the update is sent to the PDS. The SCN is set to 0 whilst the update is processed.

Shortly afterwards an *Application Acknowledgement* is returned by the PDS containing a success code from the death update and an updated SCN for Dave’s record which is added to the local database. The records are once more synchronised.

### Consent Update

Sarah Patterson registers with a new GP Practice and a record is created for her on the GP Practice’s local system. The system has the ability for several local practices to share the patient database as there is considerable patient movement in the locality.

She decides that she doesn’t want her clinical record shared beyond her practice. The receptionist, Betty, explains to Ms Patterson the benefits of a shared record and furthermore highlights the fact that the ‘dissent-to-share’ relates only to uses other than for the purpose of direct clinical communication such as referrals and discharge notes. However Sarah asks Betty to register her dissent to record sharing on the PDS anyway.

Betty navigates to the screen where consent data is recorded and noting that as yet no explicit reference to consent is set up she selects “Express Dissent” from the drop-down list on her screen and types in a comment, indicating she had explained the benefits of a shared record, but that Sarah declined to give here consent. She then clicks the ‘Update Consent’ button on her screen.

The GP Practice system stores the changed values in its database and then builds a *PDS General Update Request* message for the PDS. The system has determined an *effectiveTime* (date last changed) value of the current date for the entry and sends this along with the value for ‘Express Dissent’ to the PDS. Betty’s comment is stored locally only.

### Update Failure (General Update)

Two weeks ago Simon went for an e-RS appointment at the local clinic and now he turns up at his GP to get his results. Since then he has moved temporarily into a friend’s house.

The receptionist, Edna, locates his record on the local system and it retrieves the PDS record to see if more recent details exist for Simon. There have been no recent updates to his record, so when Simon informs Edna that he’s moved in with a friend an update is possible without further synchronisation.

Edna looks up the new address using her PAF software and enters it as a temporary address for Simon, giving a start date of today and an end date a month hence. She then selects ‘Update’ and continues to check Simon in for his appointment.

The local system builds and sends a *PDS General Update Request* message containing only the added data – his temporary address. At the same time it resets the SCN on Simon’s record to 0. Unfortunately, just at that moment the network suffers a loss of availability and the PDS update fails. The local system, awaiting an incremented SCN from PDS, cannot be updated with the new value. The local SCN of 0 indicates that the next time Simon presents, or is sent a letter, a new manual (split-screen) synchronisation will be required.

## Local Back Office

### NHS Number Allocation

Julian is on holiday in Brighton when he is taken to A&E. On arrival, the triage nurse, Gemma asks for his details. Julian informs her that he’s only a tourist in the UK, but she enters his basic details on the PAS which searches locally and then on PDS. No record is found for him.

Julian confirms that he has not been in the UK before. So Gemma enters his full name, gender, date of birth and current UK address (a hotel) onto the registration screen and presses the ‘Register Patient’ button. The application builds a local record immediately, but sends a notification to the Local Back Office team for them to double-check that no PDS record exists and if not to allocate a record. Gemma continues to type details of Julian’s injury.

The LBO team receive the notification and attempt some common variations on Julian’s details to trace on PDS. This includes the Advanced Trace in Algorithmic mode which uses phonetic name tracing. Because no PDS record could be found, Moira in the LBO team requests a new NHS Number for Julian. Behind the scenes, the application builds and sends a *PDS Allocate NHS Number* message to the PDS and shortly a *PDS Registration Request Accepted* is returned containing the newly allocated NHS Number and an initial SCN for Julian’s record. The system saves both pieces of data against his local details, creating an integrated record.

## Birth Notifications

### Spine-compliant Maternity and Child Health Organisation

Mrs Ida Bennet has given birth to John two weeks early at the maternity unit of her local acute trust. Sue the midwife takes her details to her office to send off the statutory birth notification.

When Ida was admitted to the unit, her record had already been created on the maternity system, complete with Serial Change Number, via internal HL7 messaging from the hospital Spine-compliant PAS. Nevertheless, once Ida’s record is traced on the maternity system, a further comparison of PDS and locally-stored SCNs is still performed. Finding that no subsequent updates have been received on Spine, the maternity system displays the birth notification details screen.

Sue types in all the mandatory fields for the notification, including:

* Name (John Bennet)
* Gender (Male)
* Date/time of birth (18:00 hrs, 22/11/2016)
* Birth weight and order (birth weight = 3750 grams, birth order = 1)
* The number of births in confinement (1)
* Gestational age (38 weeks)
* Delivery location (a ‘This Unit’ check-box on the screen)
* Ethnic category (‘British’ (A))
* Still-birth indicator (‘Live’ (1))
* Suspected congenital abnormality (N)

She then presses the ‘Send Birth Notification’ button on her screen and after initial validation, the application moves to the next screen where additional details about the birth can be captured, including head circumference and baby length.

Behind the scenes, the maternity system builds the *PDS Create Initial Record Request* message to send to PDS. As well as adding all the information manually entered to the request, the application:

* Adds Ida’s GP Practice code
* Adds Ida’s address and telecom details to the message as John’s default address/phone number(s)
* Adds ‘NHS Trust’ and the SDS code for the Trust as a registering authority; it also retrieves Sue’s name from the Single Sign-On Role Profile and adds that as the ‘notifier’ of the birth
* From the selection of the ‘This Unit’ check-box, it deduces a delivery location of ‘0’ (NHS hospital - delivery facilities associated with midwife ward) and the appropriate SDS code for the maternity unit
* For the same reason it can also deduce that the place of birth is Newbourne, Somerset, England
* It provides the Partner CHO SDS identifier for the Child Health Organisation affiliated to the maternity unit

With the message validated and built, the maternity system sends it to PDS.

On receipt of the message, the Spine/PDS validates the message and performs a duplicate check for the baby. Finding no matches, it saves John’s initial record to the PDS, allocating him a new NHS Number. A reciprocal link between Ida and John’s record is created by adding an NHS Number-linked related person to both records. With these operations successfully completed, a *PDS Registration Request Accepted* message is returned to the maternity system. Sue, still typing in additional birth information, is notified by the maternity system of the successful birth notification, and so the resultant NHS Number for baby John.

Spine then looks up the compliancy status of the applicable Partner Child Health Organisation and notifies the relevant systems of the new birth, using the *PDS Birth Notification*:

* Spine-compliant PCHO
* ONS
* New Born Screening system

### Spine-Compliant Maternity and Non-Spine-Compliant CHO

A year later, now resident in Sittingbourne, Ida gives birth to another son, Billy. Sittingbourne General has the same Spine-compliant PAS and maternity system as Newbourne. However, the PCHO associated with her new trust is still using a non-Spine-compliant system.

This time, the maternity system synchronises Ida’s record with PDS as before and using the information provided by the midwife Violet, builds a birth notification for Billy and sends it off to PDS.

PDS receives and validates the message. Because Billy, though having a birth order of 1, is born over a year after John the notification passes the baby duplicate check and PDS allocates him a number. Again, PDS returns a *PDS Registration Request Accepted* message and the maternity system informs Violet of the successful notification.

This time, however, Spine detects that the PCHO for Billy is a non-Spine-compliant system. It sends off the *PDS Birth Notification* to ONS and New Born Screening only. Once the new birth has been created on PDS, it then becomes the responsibility of the PCHO to access the data via the Birth Notification Application or BNA.

### Spine-Compliant CHO Processes Birth Notification

When John Bennet’s Birth Notification was successfully sent to the PDS (§3.6.1 above), Spine had established that the Partner Child Health Organisation was a Spine-compliant CHO. It then built a *PDS Birth Notification* for the organisation and sent it off.

Sheila, the midwife, sent the notification at 21.00, so no-one was available to oversee receipt of the notification on the community Child Health system. But the system is set-up to automatically process any such notifications.

The system parses the inbound notification and validates the data to ensure there are no anomalies present. Validation successful, it then uses the NHS Number supplied in the *PDS Birth Notification* from Spine to build a *PDS Retrieval Query* and sends it off synchronously to the PDS, specifying only the Serial Change Number in the *RetrievalItem* parameter of the message. Within seconds, the PDS responds with a PDS Retrieval Query Response, containing the initial SCN for John’s record: a ‘1’. The Child Health system saves this information to the local database, together with the demographics and birth data received from Spine in the notification.

The next morning Helena comes into the office, starts-up her computer and logs-on to the Child Health application. She is immediately presented with the list of notifications received overnight. No further action is required from her at this time as the notification was processed automatically for her overnight.

# Use Cases



Figure 1: PDS Integration – Essential Use Cases

The following activity diagrams are based on the requirements list in section 6 and will be used to extrapolate the compliance tests which will ultimately inform the system accreditation process.

Suppliers are urged to measure their own implementations against this model and to highlight where they differ. Differences are permissible. But these will need to be agreed with the Demographics Team. Normally an appropriate Requirements Traceability Matrix will be the medium for this agreement.

## Tracing

Many business activities will only include the *Tracing* Use Case and mostly only tracing on the local database. However, registration-type users (front-desk staff, scheduling clerks) will more often need to identify a patient record not present on the local database or need to update a patient record.

The following activity diagram illustrates the principle of ‘check for a patient locally, then the PDS’ and reflects the preferred solution to patient tracing. It illustrates interactive tracing only.



Figure 2: PDS Integration – Tracing

## Synchronisation

The purpose of the synchronisation activity is to ensure that both the local and national demographic records reflect the most up-to-date information. The following diagram illustrates the synchronisation of a patient record selected from the trace results list in §4.1 above.

Synchronisation is not applicable to applications which do not have a local demographics database of their own.



Figure 3: PDS Integration – Synchronisation

### Synchronisation Triggers

#### Initial Synchronisation

On initial synchronisation a split-screen mechanism must be used to determine the most up-to-date information for a patient, which could be on the LPI or PDS. This may mean that data from the PDS will be saved to the local database and simultaneously data from the local system will be sent to the PDS.

There are different types of data which must be considered:

* Data that is locally stored only, e.g. ethnicity. This data should be preserved when data from the PDS is persisted to the local database
* Data that is valid locally, but not currently populated on the PDS, e.g. a more up-to-date home telephone number. An update should be sent to the PDS, stating whether the new data is ‘altered’ or ‘added’.
* Data that is currently stored on the PDS and supported by the local system, but not present or erroneous locally, e.g. primary care information. This information needs to be saved to the local database.
* Data that is only stored on the PDS because the local application does not support or store it, e.g. home fax number (‘fax:’ of sub-type ‘H’). Changes to this data by other systems will augment the SCN, but will not be relevant to this local system.

#### Subsequent Synchronisations

The presence of the SCN in the local database enables subsequent synchronisations to be processed automatically. The presence of a local SCN gives the security of knowing this record has previously been matched to a counterpart on the PDS and from that point on the record can be considered ‘integrated’. As soon as a higher SCN is detected on the PDS, it is known that the PDS record has been updated more recently and that it may now contain data that should be considered for the local database.

## Flagged Records

The following activity diagram illustrates the likely error codes which would trigger the handling of flagged records and is the preferred solution to managing those scenarios.



Figure 4: PDS Integration – Flagged Records

### Detection of Flagged Records

The flagged status is detected during record synchronisation: either at the point of selecting a PDS record from a search results screen, or after retrieving a PDS record for the purposes of synchronisation.

* Sensitive records are denoted by an ‘S’ flag in the *confidentialityCode* element of the response message
* All types are denoted by error/issue codes in the *justifyingDetectedIssueEvent* element of the *Query Acknowledgement Response Control Act*.

The following table outlines the principal codes returned if a sensitive or invalid record is encountered. The codes depend on which message was used to retrieve the record. Receipt and in the case of a Simple or Advanced Trace Response code, *selection* of a flagged patient record must initiate the processing outlined below:

| Code | Qualifier  (Severity) | Display Name | Notes |
| --- | --- | --- | --- |
| 5 | WG | Match – limited information returned as sensitivity conditions apply | Returned in response to a PDS Simple or Advanced Trace Response message and denotes a sensitive record. |
| 9 | WG | Successful retrieval - Information returned limited by sensitivity conditions | Returned in response to a PDS Retrieval Query and denotes a sensitive record. |
| 17 | WG | The Patient Identifier supplied has been merged or replaced | Returned in response to a PDS Retrieval Query and denotes a superseded record/NHS Number (the new superseding NHS Number is returned in the primary ID field of the response). |
| 22 | ER | NHS Number Invalid | Returned as an error in response to a PDS Retrieval Query and denotes an invalid record with NO superseding NHS Number (no patient details are returned). |
| 44 | WG | The Patient Identifier supplied has been merged or replaced | Returned in response to a PDS Cross Check Trace and denotes a superseded record/NHS Number (the new superseding NHS Number is returned in the primary ID field of the response). |

Table 1: Flagged Record Codes

There are significant differences in the information returned on a record marked with one of these error codes:

* A code 5 trace response will return the standard Simple or Advanced Trace response data set, albeit with location information suppressed. The *confidentialityCode* element will contain an ‘S’, indicating a sensitive record.
* A code 9 retrieval response will return the standard Retrieval response data set with location information suppressed. The *confidentialityCode* element will contain an ‘S’, indicating a sensitive record.
* A code 17 or 44 response will return the full patient record, however the *patientRole.id* will contain the replacement NHS Number, NOT the number which was used to in the original *PDS Retrieval Query* (code 17) or the original *PDS Cross Check Trace Query* (code 44). If the 17 is returned from a retrieval and the *historicDataIndicator* is set in the original query, the superseded patient identifier number will appear in historical record.
* A code 22 error is returned in a *Query Act Failed* message and therefore no patient information at all will be returned. A code 22 error could denote a superseded record and another record for the patient exists on PDS. But it could equally mean the record was rendered invalid for other reasons.

#### Duplicates and Confusions on the PDS

Prior to the ‘go-live’ of the 2008-A release of PDS, normal duplicate PDS records were not ‘merged’. That is to say, two records were not ‘made into one’. Instead, one or other of the records was made invalid after any relevant data had been copied across to the surviving duplicate. Retrieving such a record will return an error code 22 in the *Query Act Failed* and no demographic data.

From the 2008-A release onwards, National Back Office administrators have routinely used the DSA merge functionality to process duplicate records, meaning that retrieving the old record using the superseded number will return the replacement number and an error code 17 – indicating a superseded record. The response will contain demographic data.

The problem here is that confused records – where more than one patient shares the same record on the PDS – will usually be invalidated on the PDS, meaning that attempts to retrieve them will also return an error code 22. PDS will return no indication of whether the code 22 denotes deletion as a result of a duplicate case or deletion as a result of a confusion case, however the processing required of local systems is different.

It is critical that receipt of a code 22 error is investigated to ascertain whether it denotes a duplicate or a confusion case. The former can usually be processed by either merging local records or replacing local identifiers. The latter may imply that local clinical data as well as demographics is suspect, with an attendant safety risk. It is not permissible merely to replace the local identifier after re-tracing for the replacement record on PDS. To do so may recreate the confusion case using data from the local system. All such records must be referred to a local administrative function to carry out this investigation. See also requirement [FLGINV-1](#FLGINV1). Systems must highlight invalid records as posing a potential safety risk while local back-office is removing them from general usage.

#### Local Processing of Sensitive Records

Section 6.5 of this document contains the requirements that support the Flagged Records use case. It should be noted that beyond options listed below, this paper does not mandate the business processes around treatment of a sensitive patient; this is considered an implementation issue, whereas this paper outlines system requirements.

It should also be stated that this document does not address the shielding of sensitive patients’ clinical data. Assuming the patient has consented to sharing, the clinical record should be available in the same way as for any other patient. Particular care should be taken therefore to protect any location type information, entered onto the local system by sufficiently privileged users, which may find its way onto the clinical record, such as addresses on appointment letters.

**Restricting Access to Location Information**

When considering the treatment of sensitive records, the preferred model is to use RBAC to restrict access to the sensitive portion of the local record. This approach assumes that only location information is suppressed and that normal activity would therefore be possible, e.g. addition of clinical notes. Appropriately authorised users would be able to add location information for use in local processes, e.g. an address for use in appointment letters, but any such update would not be sent to the PDS and the information would not be visible to ‘normal’ users.

Where there are reasons not to adopt the approach above, suppliers may choose to restrict access to the entire record. This course of action introduces considerable overhead when it comes to the treatment of a sensitive record and would normally only be applicable in a small setting, e.g. a GP surgery, where a user with appropriate authority is readily ‘on hand’.

Another alternative would be to use default values for the location information such as the Trust address etc.

In all cases a safety review should be undertaken by the user community to ensure the local system employs a level of security appropriate to the risks of inappropriate disclosure of location details for sensitive records.

Having undertaken such an evaluation the host organisation may consider it appropriate to not restrict access to local records flagged as sensitive on PDS. This is not appropriate in all settings. But the responsibility will lie with the host organisation.

**Sensitive Records and Downstream Systems**

In some care settings, suppressed location information may be required by downstream systems, e.g. primary care identifiers for use in laboratory systems. Under these circumstances, where suppliers have chosen to restrict the entire record, it is permissible to use this alias record for downstream systems, however the preferred approach will be to use the actual patient record and to supply default data for the suppressed fields required by those systems. These concepts are explored in detail in NPFIT-FNT-TO-DSD-0120 – Business Use Case: Sensitive Patients - Local Business Processes.

## Updates

The following activity diagram illustrates a generic update process. The triggers themselves can be any of the following:

* The application has determined that an update must be made as a result of a synchronisation (initial or subsequent synchronisation; manual or automatic trigger)
* An end-user is updating demographic information as part of maintenance of the patient record. In this case, a synchronisation of the patient record has occurred immediately before-hand.



Figure 5: PDS Integration – PDS Update

### General Update

The mechanism for sending any update to the PDS will be the *PDS General Update Request* message. The message should be ‘loosely coupled’ meaning that the user’s workflow should not be interrupted while awaiting a response from the PDS.

The *PDS General Update Request* message must be used and it must stipulate:

* Whether an updated object is being ‘added’, ‘altered’, or ‘removed’.
* All updates must be ‘partial’ updates, meaning only changed or corrected data objects are to be sent. Unchanged data must not be sent.
* For objects where multiplicity is supported, a PDS Object Identifier is also required for all objects being ‘altered’ or ‘removed’.
* A single update message can contain objects being ‘added’, ‘altered’ and ‘removed’.

### Death Update

Whilst the preferred approach to post-initial synchronisation is to perform these automatically, a change in key data items (such as Death status and Gender) must prompt interactive users to either accept or reject the update to the local database and not defer such anomalies because of their importance.

This may lead to a record being ‘de-coupled’ from the PDS until the erroneous death posting or gender change has been investigated and resolved by the National Back Office. In a ‘de-coupled’ state, updates to any part of the local record will NOT result in a similar update on the PDS.

In all cases, with the exceptions of updates from DSA and ONS (for Civil Registration) and a birth notification on PDS for a stillborn baby, updates to death status will be ‘informal’ on the PDS.

Once a patient has been recorded as dead, it is still possible to edit the patient demographic record on the PDS, for example to alter next of kin information. This is regardless of whether the death status is recorded as ‘formal’ or ‘informal’.

### Consent Update

Consent to NHS care record sharing is relevant only to a local system where the detailed clinical data held in the LPI can be shared across organisational boundaries, and the data can be used for purposes other than direct clinical communication (examples of direct clinical communications include referrals and discharge notes).

Setting the consent status indicates whether a patient has expressly consented to or expressly dissented from having their clinical details used by organisations other than that in which the data is captured, for example, for research purposes.

It is not possible to send to the PDS a free-text description of why the status has been set. Local organisations may continue to store such text if necessary for local business purposes, but it is not allowable to display it anywhere except in the legal organisation where it was originally captured.

### Failed Updates

Whilst updates are to be ‘loosely coupled’, local systems should provide proper failure-mode processing in case of PDS unavailability or problems with malformed updates. Queuing strategies for updates to the PDS may be applicable. But any kind of terminal failure, including a SCN mismatch when a queued message is finally sent to the PDS, should trigger a manual resolution of the problem.

Through the use of the split-screen functionality such events can be manually overseen and the valid data entered locally can be verified and resent. The simplest way for this to happen is to reset the local SCN until a positive acknowledgment is received. If this is not received, the reset SCN will force the split-screen to appear at the next synchronisation event.

## Local Back Office

To comprehensively support the synchronisation of local records with the PDS-equivalent record a number of functions need to be performed away from the ‘front-desk’ operation. These functions may require specific data expertise or additional effort not always available in the day-to-day operational setting. The tasks include, but are not restricted to the following:

* Invalid record processing. The retrieval of a PDS record typically occurs when a local record has previously been synchronised with PDS. If the NBO have marked the record as Invalid, meaning the NHS Number is no longer valid for that record, the retrieval will indicate this in a response code. The patient must then be retraced using the demographics.
* Superseded record processing. If the response code from a PDS Retrieval indicates that the NHS Number has been superseded then a superseding number is returned. If that NHS Number does not already exist on the LPI then the identifier can simply be replaced on the local record. If the NHS Number does already exist locally on another record then Back Office processing is required as it implies a duplicate or confusion record exists.
* Confusion processing. During the synchronisation of records it may become apparent that the wrong local and PDS records have become associated. Where a user is present, this may be through comparison of the demographic data presented in a synchronisation screen, in particular discrepancies in ‘key-fields’ such as gender or date of death. Such potential confusion cases require a Local Back Office user to work with NBO to ‘unpick’ any incorrect details on the records. Further guidance can be found at: <https://digital.nhs.uk/National-Back-Office>.
* Duplicate processing. Depending on the integrity rules of the LPI it may be possible for duplicate records to exist. Typically this is where a local record exists with no, or an unverified NHS Number, and the local trace fails to identify that record. The system then continues with a PDS trace and adds a new local record thus potentially adding a duplicate local record. Local systems require a mechanism for identifying such potential duplicates, and a mechanism for resolving these.
* Allocation of a PDS record. When ‘front-desk’ tracing has failed to find a matching PDS record for a patient, a task to undertake further tracing/allocation may be raised. The LBO function will then attempt to retrace the patient, and if that fails, allocate a new PDS record.

Any of these activities may result in changes to the identification of local records. Suppliers must consider the impact on downstream systems which may currently be using these records.

The following activity diagram broadly illustrates the processes involved in resolving these scenarios. However, actual implementations will differ depending on local system integrity rules and the degree to which suppliers wish to automate the processes. Some of these tasks can inter-relate. As an example, the resolution of a superseded NHS Number can result in the need to resolve a duplicate or confusion.



Figure 6: PDS Integration – Local Back Office

### Merging on the PDS

Merging of records on PDS has been handled in one of two ways.

Early behaviour was not to ’merge’ PDS records. That is to say two records were not made into one. Instead, once an NBO investigation had been performed and it was decided to logically merge two records, the following occurred:

* The superseded record was flagged as ‘invalid’ on PDS.
* Any details that were more correct on the superseded record were manually copied across to a new record.
* Attempts to retrieve the invalid record from the PDS using an NHS Number returned an invalid record response (error code 22) and did NOT provide any superseding link to the correct record.

Current NBO behaviour associates the two records that require merging. On retrieving the old record using the superseded number, the replacement number is returned together with an error code 17 or 44.

See the PDS Integration Guidance document for the principal business reasons for flagging PDS records.

### NHS Number Allocation

#### Allocation Scenarios

The allocation function should be part of the Local Back Office activity. Allocation of an NHS Number is not related to the eligibility of a patient for care, but it is a prerequisite for a record’s existence on the PDS and full participation in Spine i.e. in order to create a record on the PDS, a unique key – the NHS Number – must be generated.

The following is a list of allocation scenarios. All allocations must be preceded by PDS traces to confirm no prior existence on the database. In general, any properly identified patient whose record cannot be found should be allocated a new number. Outlined below are the common scenarios in which a new allocation should be sent.

| # | Allocation Type | Examples |
| --- | --- | --- |
|  | GP Registrations | Most patients registering with a new GP, i.e. First Acceptance, should be on the PDS; systems should allow for new allocation. |
|  | Foreign Nationals | Internationals  A visitor from overseas, whether seeking GP treatment or in unscheduled care may be allocated an NHS Number if one has not already been allocated. This also includes any baby born abroad.  Home countries  Scottish and Northern Ireland Nationals seeking treatment on the NHS should be allocated an NHS Number. In primary care, such registrations should be marked as ‘Type 3 - transfer in’ for NHAIS, enabling Back Office procedures to allow medical records to be transferred. |
|  | The Services | Services personnel  If returning from absence from the UK or if services personnel require treatment on the NHS.  Services dependents  If a foreign national marries services personnel while stationed abroad, a new number should be allocated. Service Medical Officers would normally inform the service and numbers would be allocated by National Back Office, otherwise if this type of patient is encountered, they should be registered as a normal foreign national. |
|  | Private Patients | Always been in private care  This category will include patients who have ALWAYS been in private care and therefore never received an NHS Number.  Potentially fraudulent identity  Historically, many patients claiming to have always been treated privately have been using multiple identities for fraudulent purposes. |
|  | Invalid Records which cannot be traced | When a code 22 is returned from the PDS in response to a *PDS Retrieval Query*, the record should be referred to the LBO for re-tracing and the possible allocation of a new PDS record. In the meantime the local record is de-coupled from PDS and continues to be used. |

Table 2: Allocation Types

#### Allocation Exemptions

The following table describes those scenarios where NHS Number allocation must not be performed. It is provided here to clarify queries from suppliers regarding allocation, especially in an unscheduled care setting.

| # | Patient Type | Scenario Description |
| --- | --- | --- |
|  | New borns | Non-Spine-compliant maternity systems  New born registrations from non-Spine-compliant maternity units will be sent to PDS using the BNA application.  Spine-compliant maternity systems  Birth notification is possible from Spine-compliant maternity systems, using the *PDS Create Initial Record Request* message. |
|  | ’Unknown’ Patients | Unconscious or confused patients  Normally in an unscheduled care scenario, these patients should NOT be allocated an NHS Number until identity can be confirmed. Secondary care has various paradigms for this, with the most common being a “partial” registration, that is converted to a “full” registration once a patient or relative can provide patient details.  The same ruling applies to unknown victims who die whilst in emergency care. If identity can be confirmed, details would be completed and correlated with the PDS at a later stage, otherwise they would remain as local-only registrations.  Large-Scale Emergency (major incident) pre-registrations  In case of large-scale emergency, Secondary care settings may pre-populate the LPI with patients (‘patient1-patient1000’ type registrations). These generic patients should be converted and merged with existing patients at a later stage.  If at the time of conversion a patient is still not locatable on the PDS, an allocation should be made for English nationals. |
|  | Sensitive (‘S’) flagged records | Some suppliers may use temporary, local registration for sensitive records. This record could then be locally merged to the official “flagged” record after the episode of care. |

Table 3: Allocation Exemptions

## Birth Notifications

The following diagram illustrates the logical procedure for the creation of a new NHS Number for a baby on PDS.

An accurate and verified record for the mother is a pre-requisite for the birth notification. However, the maternity system itself need not perform this update. How the mother’s record is actually created will depend on the supplier solution. In the scenario used here, it could be created via internal messaging from a Spine-compliant PAS system.

If the Partner Child Health Organisation is Spine-compliant, once a baby record is created on the PDS, a Birth Notification is sent to it. If the PCHO is not Spine-compliant, it will use the Birth Notification Application (BNA) to retrieve the relevant notifications.



Figure 7: PDS Integration – Birth Notification

### PDS New Born Duplicate Checking Algorithm

On receipt of a *PDS Create Initial Record Request*, the PDS will attempt to determine if this is a duplicate request. As well as the standard demographics on the PDS, the system stores six months of select notification data, not accessible to any other purpose. This data contains ‘clinical’ information such as birth weight.

The following matching algorithms are applied and a candidate ‘pool’ built from each of them:

1. Mother’s NHS Number and birth order
2. Baby’s date of birth, time of birth, birth order, birth weight and gender
3. Mother’s date of birth, Partner Child Health Organisation and 4 out of 5 of the following: Baby’s date of birth, time of birth, birth order, birth weight and gender

All the above candidate pools are selected from the 6 months prior to the baby’s date of birth.

If a single candidate is found by algorithm 1, the match is *exact*; any candidates from the other pools denote a *possible* match.

If matches are found, PDS returns the *PDS Create Initial Record Request Rejected (Duplicate Found)* message with details of the possible candidates for examination by the maternity system. The maternity system can then choose to resubmit the request if their new born is not in the list returned. To do this, they would set the override flag in another PDS Create Initial Record Request. The PDS will then either allow the notification to continue (in the case of a *possible* duplicate) or reject it again if the match is *exact*.

### Process Birth (Child Health) Use Case

In general, inbound notifications to Child Health should be processed automatically on receipt from Spine.

Although the notification to Child Health itself contains all the data required by them to process the registration, a ‘synchronisation’ of the incoming record with the PDS may also be made. This provides an opportunity to link the incoming record to the PDS record by retrieving the Serial Change Number from PDS, effectively linking the Child Health system record to the PDS record.

Once the Child Health system has processed the Birth Notification, the system is not required to update the PDS. But if suppliers choose to do so, as with all other systems, these updates are governed by the requirements below.

Finally, Child Health systems are required to provide the ability for users to view the notifications that have come in for a given time period.



Figure 9: PDS Integration – Process Birth (Child Health)

# PDS Tracing Parameters

The following table lists search parameters available with PDS tracing together with requirements and guidance on their usage and some information on how PDS determines a match.

Key to table:

|  |  |
| --- | --- |
| Mandatory | Data must be supplied otherwise the message will be rejected by PDS |
| Optional | Data may be supplied |
| N/A | Data is not supported by the message |
| Do not use | Data is supported by the message but either:  is recommended is not used as it will lessen the chances of a match, or  may cause unexpected results, or  is not intended to be used but that may not be explicit in the MIM, or  refers to optionality not available if another data item has been used. |

## Table of PDS Tracing Parameters

| Message /  Data Item | Simple Trace | Advanced Trace (Alphanumeric) | Advanced Trace (Algorithmic) | Retrieval | Cross Check Trace |
| --- | --- | --- | --- | --- | --- |
| NHS Number | N/A | Do not use (if supplied other data would be ignored by PDS) | Do not use (if supplied other data would be ignored by PDS) | Mandatory | Mandatory |
| Gender | Mandatory  *Only records with a PDS value that exactly matches the parameter in the message will be considered to be a match* | Mandatory  *Only records with a PDS value that exactly matches the parameter in the message will be considered to be a match* | Mandatory | N/A | N/A |
| Full date of birth | Mandatory  *A match will be made only if the Date of Birth in the message has the same resolution as that held on PDS* | Mandatory (if a date of birth range or partial date of birth is not used)  Do not use (if a date of birth range or partial date of birth is used) | Mandatory (if a date of birth range or partial date of birth is not used)  Do not use (if a date of birth range or partial date of birth is used) | N/A | Mandatory |
| Time of birth | Do not use | Do not use | Do not use | N/A | Do not use |
| Date of birth range or Partial Date of birth | N/A | Mandatory (if a full date of birth is not used)  Do not use (if a full date of birth is used)  *If a partial date is supplied, a match will be made if the Date of Birth in the message has the same or higher resolution as that held on PDS* | Mandatory (if a full date of birth is not used)  Do not use (if a full date of birth is used) | N/A | N/A |
| Full date of death | Optional  *A match will be made only if the Date of Death in the message has the same resolution as that held on PDS* | Optional (if a date of death range or partial date of death is not used)  Do not use (if a date of death range or partial date of death is used) | Optional (if a date of death range or partial date of death is not used)  Do not use (if a date of death range or partial date of death is used) | N/A | N/A |
| Time of death | Do not use | Do not use | Do not use | N/A | N/A |
| Date of death range or Partial Date of death | N/A | Optional (if a full date of death is not used)  Do not use (if a full date of death is used)  *If a partial date is supplied, a match will be made only if the Date of Death in the message has the same or higher resolution as that held on PDS* | Optional (if a full date of death is not used)  Do not use (if a full date of death is used) | N/A | N/A |
| Name type | Do not use (PDS will search all name types) | Do not use (PDS will search all name types) | Do not use (PDS will search all name types) | N/A | Do not use (PDS will search all name types where family name and first given name are used) |
| Family name | Mandatory  Wildcards not accepted  Comparison by PDS is case-insensitive  White space and punctuation are significant | Mandatory  Wildcards accepted  Comparison by PDS is case-insensitive  White space and punctuation are significant | Mandatory (if a first given name is not used)  Optional (if a first given name is used)  Wildcards not accepted  Comparison by PDS is case-insensitive  White space and punctuation are not significant | N/A | Optional (Mandatory if a first given name is used) |
| First given name | Optional (wildcards not accepted)  Comparison by PDS is case-insensitive  White space and punctuation are significant | Optional (wildcards accepted)  Comparison by PDS is case-insensitive  White space and punctuation are significant | Mandatory (if a family name is not used)  Optional (if a family name is used)  Wildcards not accepted  Comparison by PDS is case-insensitive  White space and punctuation are not significant | N/A | Optional (Mandatory if a family name is used) |
| Other given name(s) | Do not use | Do not use | Optional (wildcards not accepted)  Comparison by PDS is case-insensitive  White space and punctuation are not significant | N/A | Do not use |
| Prefix | Do not use | Do not use | Do not use | N/A | Do not use |
| Suffix | Do not use | Do not use | Do not use | N/A | Do not use |
| Address type | Do not use (PDS will search all address types) | Do not use (PDS will search all address types) | Do not use (PDS will search all address types) | N/A | N/A |
| Address lines | N/A | Do not use | Do not use | N/A | N/A |
| Postcode | Optional  Wildcards not accepted  Comparison by PDS is case-insensitive | Optional  Wildcards accepted  Comparison by PDS is case-insensitive | Optional  Wildcards not accepted  Comparison by PDS is case-insensitive | N/A | N/A |
| PAF key | Do not use | Do not use | Do not use | N/A | N/A |
| GP Practice code | N/A | Optional | Optional | N/A | N/A |
| GP code | N/A | Do not use | Do not use | N/A | N/A |

Table 1: Tracing Parameters

## Advanced Trace (Algorithmic) Parameters

The Advanced Trace (Algorithmic) uses a combination of data to build a list of possible candidate records. One or more of the following combinations of data must be present, without wildcards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. | Gender | Family Name | First Given Name | Date of birth (or date of birth range) |
| 2. | Gender | Family Name | Date of birth (or date of birth range) | Postcode |
| 3. | Gender | First Given Name | Date of birth (or date of birth range) | Postcode |

Table 2: Advanced Trace (Algorithmic) Parameters

Note that gender is included in the table because it is mandatory in the Advanced Trace message, but a match on gender is not necessary to get back a matching record from PDS though any mismatch on gender will affect the match weighting of any returned record.

# Requirement List

In the table that follows, the complete requirement list is enumerated. Whilst there is not an absolute distinction between the two, the requirements broadly elaborate how a system should interact with the PDS and not how the system should functionally operate.

Each requirement is identified and every effort has been made to group the requirements by the particular aspect of functionality it addresses. There are major requirements and minor requirements. The minor requirement is relevant only if the parent major requirement is adopted. Thus if a supplier chooses not to respond to a major requirement (for instance one rated as a ‘May’ requirement), the rating of the minor requirement (e.g. a ‘Must’) becomes irrelevant.

Major requirements are phrased so as to be understandable out of context and are identified with a whole number; minor requirements will be dependent on an understanding of its parent.

Suppliers will be required to complete a Requirements Traceability Matrix (RTM), with responses to the relevant requirements, for each system being assured.

## Definitions

The keywords **MUST**, **SHOULD** and **MAY** are to be interpreted as described in RFC2119:

* **MUST**: This word, or the terms "**REQUIRED**" or "**SHALL**", means that the definition is an absolute requirement of the specification.
* **SHOULD**: This word, or the adjective "**RECOMMENDED**", means that there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications **MUST** be understood, and described in the response to the requirement, before choosing a different course.
* **MAY**: This word, or the adjective “**OPTIONAL**”, means that an item is truly optional. One implementer may choose to include the item because a particular implementation requires it or because the implementer feels that it enhances the implementation, while another implementer may omit the same item. Again the reasoning for omitting such requirements must be described in the supplier response.

## Requirement Principles

The principles underlying the integration of local systems with PDS follow, and must be respected at all times unless explicitly over-ridden by additional requirements.

| Reqt. ID | Requirement Text | Rating | Notes |
| --- | --- | --- | --- |
| **PDSPCP** | **Principles** |  |  |
| **PDSPCP-1** | **For the PDS to be maintained as a central source of patient demographics, it MUST be queried and updated in line with the local system’s Local Patient Index.** | **Must** |  |
| **PDSPCP-2** | **Display of PDS trace results on local systems MUST be governed by Caldicott Principles. That means that, where possible, the end-user should only be presented with trace data for the person they are searching for.** | **Must** |  |
| **PDSPCP-3** | **Local systems MUST synchronise any locally-held copy of a patient record with its counterpart on the PDS at the following events:**   * + **At the commencement of an episode. This includes:**   + **Registering or reception at a GP surgery**   + **Reception at an outpatient clinic**   + **Beginning of any episode of unscheduled care where patient identity is known**   + **On referral for assessment in Social Care where consent to access NHS data has been given**   + **Prior to using patient communication information. This includes:**   + **Prior to using locally-stored patient telephone numbers or addresses**   + **Prior to sending correspondence to a patient**   + **Prior to inpatient admission and discharge. This includes:**   + **Prior to the generation of messages containing new or changed demographics to downstream, local systems**   + **Prior to updating any information for the patient on Spine, including any update of the PDS itself**   + **Prior to any retrieval of clinical or medication information stored on external Spine services, including:**   + **e-RS, SCR, GP2GP and EPS**   + **But may exclude retrievals of clinical data during an episode of inpatient care.** | **Must** | **Suppliers must describe the synchronisation events in the system Functional Specification.** |
| PDSPCP-3.1 | Where synchronisation fails at one of the ‘Significant Events’, local systems MUST continue to be able to provide care for a patient. | Must |  |
| PDSPCP-3.1.1 | Under such circumstances an unsynchronised or local-only record SHOULD be used. | Should |  |
| **PDSPCP-4** | **Systems that provide PDS trace functionality capable of returning multiple candidate records from PDS, or that provide PDS update functionality, MUST support role-based access control as defined by the National Access Control Reference Group and documented in the RBAC database.** | **Must** | **Systems limited to PDS tracing and retrievals that return single candidate records need not implement RBAC user access control.**  **Refer to NPFIT-SI-SIGOV-0073.05 Guidance on Implementing RBAC for PSIS and PDS v2.1 for full details about RBAC.**  **An example mapping is provided in the PDS Integration Guidance document.** |
| **PDSPCP-5** | **The NHS Number (and its bar-coded equivalent) MUST be used in all correspondence, notes and patient care systems to support accuracy in patient identification and record linkages.** | **Must** |  |
| PDSPCP-5.1 | All Spine-compliant systems in England, Wales and the Isle of Man MUST:   * + Either use only the NHS Number as the unique patient identifier   + Or use the NHS Number as a patient identifier in conjunction with a local system numbering system. | Must |  |
| PDSPCP-5.2 | Local systems MUST display and print the NHS Number in 3-3-4 format on all screens and printed material, e.g. 123 456 7890. | Must |  |
| PDSPCP-5.3 | Bar-coded NHS Numbers MUST conform to the current NHS Digital Standard. | Must | The current standard is “ISB 1077 AIDC for Patient Identification”.  N.B. The Information Standards Board (ISB) has been replaced by the Data Coordination Board (DCB). |
| **PDSPCP-6** | **An entire PDS response message MUST NOT be rejected where individual items of data are invalid.** | **Must** | **Invalid refers to any type of incorrectness against MIM requirements, e.g. missing mandatory fields, code values outside the range supported, unusable date format etc.**  **This principle applies to any response message from PDS. The use of strict schema validation can make this requirement difficult to meet, therefore alternative methods of assuring the usability of data in PDS response messages are recommended.**  **Some suggested approaches to specific types of data are:**   * **Ignore any coded values that are not in the appropriate vocabulary;** * **Ignore any name, address or telecom data which does not have a legitimate use type, and any telecom data without a valid sub-type;** * **Ignore any date that does not represent a valid date in CCYYMMDD format or any date/time that does not represent a valid date/time in CCYYMMDDhhmm format;** * **Truncate name and address line fields that are longer than that specified in the PDS Integration Guidance document.**   **Individual items of data that are invalid may be rejected but the rest of the response must be made available to the end system. Only in the following scenarios can the entire transaction be legitimately rejected:**   * **where the remaining content does not meet the minimum mandatory data requirements of the system, e.g. no name or address data is valid;** * **where it is not possible to make use of the message e.g. due to corruption or invalid structure.** |
| **PDSPCP-7** | **Where interacting with PDS using an automated batching process, the frequency of submission of individual interactions to PDS MUST be capable of being regulated.** | **Must** | **For example, by means of a configurable throttling mechanism.** |
| **PDSPCP-8** | **For processes involving users authenticated with a smart card, local systems MUST include an interactive user’s SDS User Role Profile identifier in all messaging sent to the PDS. Specifically, the 'author' participation and 'R\_AgentNPFITPersonSDSWithRoleId' CMET of the Query and Trigger Event Control Acts used in every PDS interaction MUST be treated as mandatory.** | **Must** |  |

## Tracing Requirements

| Reqt. ID | Requirement Text | Rating | Notes |
| --- | --- | --- | --- |
| **TRCGEN** | **Tracing General** |  | **Relevant to all systems implementing PDS Tracing.** |
| **TRCGEN-1** | **For systems with their own LPI, the local system MUST always trace locally for candidate records, prior to initiating a PDS Trace.** | **Must** |  |
| **TRCGEN-2** | **For systems without their own LPI, the local system MUST initiate a PDS Trace.** | **Must** |  |
| **TRCGEN-3** | **Any local trace where no valid candidate record is found MUST continue to trace on the PDS.** | **Must** | **The choice of search parameters used, and which parameters are mandatory in local searching, is down to supplier discretion.**  **The criteria for determining a local candidate match is also down to supplier discretion.**  **A step which requires user confirmation of the candidate would be the norm.** |
| TRCGEN-3.1 | A trace referred to the PDS in this manner SHOULD be sent without further user interaction providing the minimum criteria for a trace are present. | Should | Where insufficient criteria are already present for any type of PDS trace supported by the local system, the system could prompt users to enter further data and indicate which data needs adding. |
| **TRCLCL** | **Local Tracing** |  | **Relevant to all systems with a Local Patient Index.** |
| **TRCLCL-1** | **Local systems SHOULD allow local searching on NHS Numbers.** | **Should** |  |
| **TRCLCL-2** | **Local searches using wildcards MUST be sent to the PDS as an Advanced Trace (Alphanumeric) message.** | **Must** |  |
| **TRCLCL-3** | **If local ‘Soundex’ tracing (or similar) was used in the initial local search, this MUST NOT be translated to an alphanumeric PDS trace type.** | **Must** | **The alphanumeric PDS trace types are: PDS Simple Trace Query and PDS Advanced Trace Query (Alphanumeric).** |
| **TRCLCL-3.1** | **If local ‘Soundex’ tracing (or similar) was used in the initial local search, these criteria MAY be used in a PDS Advanced Trace (algorithmic) if the minimum criteria for such a trace are present.** | **May** |  |
| **TRCPDS** | **Tracing on the PDS** |  | **Relevant to all systems implementing PDS Tracing.**  **Suppliers must indicate in the system Functional Specification which search parameters are supported for each trace message used. See** [**Table of PDS Tracing Parameters**](#_Table_of_PDS)**.**  **See also** [**https://digital.nhs.uk/NHS-Number**](https://digital.nhs.uk/NHS-Number) **for further guidance on tracing and the use of the NHS Number.** |
| **TRCPDS-1** | **Local systems MUST support the use of at least one of the following messages for tracing with demographic data:**   * **PDS Simple Trace Query** * **PDS Advanced Trace Query (Alphanumeric)** * **PDS Advanced Trace Query (Algorithmic).** | **Must** | **The simple trace need not be implemented. Ideally both types of advanced trace would be supported.** |
| TRCPDS-1.1 | At least one variant of the PDS Advanced Trace Query MUST be supported where the system supports NHS Number Allocation. | Must |  |
| **TRCPDS-2** | **Local systems MAY support either or both of the following messages for tracing involving NHS Number:**   * **PDS Retrieval Query** * **PDS Cross Check Trace Query.** | **May** | **The PDS Cross Check Trace will report an error condition (i.e. indicate the record is not verified) if there is a date of birth mismatch, without providing the PDS record.**  **As an alternative, it may be more useful to use the PDS Retrieval, as it allows the patient details to be returned in scenarios where the PDS Cross Check Trace does not.**  **Using the PDS Retrieval, a user can then determine whether the PDS record is for the patient being traced even if there is, say, a date of birth mismatch.**  **Where the PDS Retrieval is used, systems need to take into account additional possible error responses from PDS, e.g. if the number has been inaccurately entered into the local system and no such record exists on PDS, or if the NHS number has been superseded (error code 17) or invalidated (error code 22).**  **Where the PDS Retrieval is used and a record successfully returned, it is particularly important that the confirmation of identity steps are carried out as per the** [**TRCCNF**](#TRCCNF) **requirements.** |
| TRCPDS-2.1 | Where the PDS Retrieval or PDS Cross Check Trace message is used, the local system MUST compare the used and returned NHS Numbers for discrepancies. | Must | For, as an example, superseded NHS Numbers as outlined in the section [6.5 Flagged Record requirements](#FLG). |
| **TRCPDS-3** | **Local systems SHOULD determine the appropriate PDS trace message based on the trace criteria present.** | **Should** | **For example, where criteria unique to the Advanced Trace are used (e.g. date of birth range or wildcards are present), the system would use the PDS Advanced Trace (Alphanumeric). Where the criteria could equally be sent using the PDS Simple Trace or PDS Advanced Trace, either message could be used, but if it is required to trace against historic data on PDS or to return multiple candidate records, then the PDS Advanced Trace should be selected.** |
| **TRCPDS-4** | **If the PDS Simple Trace is used in the first instance and returns zero matches, suppliers MAY automatically send a PDS Advanced Trace (Algorithmic) with the same parameters** **as long as the criteria are present to satisfy at least one of the required combinations (blocking queries).** | **May** | **See section** [**5.2 Advanced Trace (Algorithmic) Parameters**](#_Advanced_Trace_(Algorithmic)) **for details of the blocking queries.** |
| **TRCPDS-5** | **Where the PDS Advanced Trace (Alphanumeric) is supported, the local system MUST allow the use of wildcards in surname/forename and postcode search parameters.** | **Must** |  |
| TRCPDS-5.1 | Wildcard substitution MUST be preceded by a minimum of two characters. | Must |  |
| **TRCPDS-6** | **If postcode searching is supported, local systems SHOULD use a PAF tool (e.g. the Spine Gazetteer or QAS) to ensure accurate, non-free-text postcodes are used.** | **Should** |  |
| **TRCPDS-7** | **Local systems MUST be capable of tracing on a full date of birth, and (where tracing on date of death is supported) a full date of death.** | **Must** |  |
| TRCPDS-7.1 | Where the PDS Advanced Trace is supported, local systems MUST be capable of tracing on date of birth range or a partial date of birth, and where tracing on date of death is supported, on date of death range or a partial date of death. | Must | If DOB range or partial DOB were not to be supported, then tracing patients with inexact details (for example where the PDS has a DOB with the day/month accidentally reversed) would not be possible. |
| **TRCPDS-8** | **For patient names that contain punctuation characters (hyphens, apostrophes etc.) patients SHOULD be traced using wildcards or algorithmic mechanisms i.e. via PDS Advanced Trace instead of using the punctuation characters.** | **Should** | **For example, if sending an alphanumeric advanced trace use SMITH\*JONES instead of SMITH-JONES; if sending an algorithmic advanced trace, the name either with or without the hyphen can be sent.**  **The space character should also be treated in the same way as punctuation characters.** |
| TRCPDS-8.1 | This replacement MAY be done automatically by the system. | May |  |
| TRCPDS-8.2 | Where there is a contradiction between using wildcards in place of punctuation and the need to precede a wildcard by two characters, e.g. O’Brien, the local system SHOULD use algorithmic mechanisms. | Should | For systems which do not support the algorithmic advanced trace, an approach to this scenario could be: send an alphanumeric advanced (or simple) trace with the apostrophe, and if that fails send another alphanumeric advanced (or simple) trace without the apostrophe. |
| **TRCPDS-9** | **Where Primary care data (GP practice code) is supported as a trace parameter, the user interface SHOULD NOT allow free-text entry of coded data, but provide lookup functionality.** | **Should** |  |
| **TRCPDS-10** | **Local systems MUST validate the data provided in the trace message to ensure it meets the data requirements for the trace used, as documented in the** [**Table of PDS Tracing Parameters**](#_Table_of_PDS) **and the MIM, and contain valid values.** | **Must** | **Validation of values used would be expected to include:**   * **NHS Number: that the number is 10 digits long and that the 10th digit is a valid check digit.** * **Gender: is a valid code value from the MIM vocabulary.** * **Date of birth: is a legitimate date.** * **Postcode:** a **single space must be present between outcode and incode.** |
| **TRCPDS-11** | **In response to PDS tracing, where the number of matches found on the PDS exceeds the operational limits the local system MUST inform the user that too many matches have been found.** | **Must** | **Currently the limits are > 1 match for Simple Trace; > 50 matches for Advanced Trace.**  **Local systems could encourage the user to refine their search.** |
| TRCPDS-11.1 | Where the response to a PDS Simple Trace indicates >1 match and the system supports PDS Advanced Trace, the system MAY automatically send a PDS Advanced Trace (alphanumeric) with the same trace parameters in order to have the matching records returned without requiring user involvement. | May |  |
| **TRCDPY** | **Displaying PDS Trace Results** |  | **Relevant to all systems implementing PDS Tracing.**  **Although this section refers to the ‘display’ of patient records, this should not be taken to mean only on computer screens. In particular, systems must also not print out lists of patient data for the purposes of tracing.** |
| **TRCDPY-1** | **The patient trace result pick-list on local systems MUST display not more than the following data items:**   * **Patient ID (NHS Number)** * **Surname** * **Given name(s) [i.e. forename(s)]** * **Preferred name** * **Gender** * **Date of birth** * **Date of death (where applicable)** * **Address (lines 1 – 5)** * **Postcode** * **Primary care information.** | **Must** | **The principle behind this requirement is that demographic data supplied on a pick-list is kept to the minimum level required to support identification and validation of the appropriate patient record, in line with** [**PDSPCP-2**](#PDSPCP-2)**.** |
| **TRCDPY-2** | **Local systems MUST NOT display the Matching Level in the results from an Advanced Trace (algorithmic), nor use it to derive an ordering of results.** | **Must** |  |
| TRCDPY-2.1 | Local systems MUST display results from an Advanced Trace (algorithmic) results in the order returned from PDS. | Must |  |
| **TRCDPY-3** | **When the local system receives multiple records in response to an Advanced Trace, it SHOULD exhibit all of the following behaviours:**   * **inform the user that multiple records have been returned** * **offer them the option to view a pick-list of returned results** * **inform them that their decision to view the pick-list will be audited and if inappropriate may lead to disciplinary action.** | **Should** | **These requirements reflect an appropriate interpretation of the Caldicott principles. However, suppliers may vary from this requirement having agreed the process with user IG representatives.**  **In particular it may be appropriate to not display the audit warning each time multiple candidates are returned from a trace, but to do this once at the beginning of the user session.**  **The requirements for audit functionality are described in IG Requirements for ESP Systems.**  **Systems suppliers may consider an alternative approach to showing users a pick-list of candidate records by refining the search i.e. including additional data and searching again, either against a cache of the returned candidates or by tracing on PDS again.** |
| TRCDPY-3.1 | If the user opts to view a pick-list the local system MUST audit this access, recording user identification and trace details. | Must | This includes audit where the pick-list consists of a single candidate. |
| **TRCDPY-4** | **If a sensitive flagged record is returned in a trace, the flag MUST NOT be displayed to the user on a search results screen.** | **Must** | **The returned patient data should be displayed. But not the sensitive nature of the record.** |
| **TRCFAL** | **PDS Trace Failure** |  | **Relevant to all systems implementing PDS Tracing.** |
| **TRCFAL-1** | **If PDS Tracing fails to find a candidate record on PDS and the user elects to create a new record for the patient, the local system SHOULD:**   * **If a local record has not been created, create one.** * **Check to ensure an exact local match does not exist.** * **Notify the LBO that no PDS match has been found.** * **De-couple the local record until the LBO function is complete.** | **Should** | **The LBO function should be able to retrace the patient on PDS and, if this fails, allocate a record on PDS. See** [**LBOALT**](#LBOALT) **requirements.**  **Whilst this is the best mechanism for ensuring local system NHS Numbers are maintained, not all systems will develop an allocate function.**  **If a PDS allocate function is not available, then the untraced local record may be de-coupled from PDS until traced by another mechanism such as periodic PDS batch tracing - DBS.**  **A local exact match check should use:**   * **Full Date of Birth** * **Full First Given Name of Usual Name** * **Full Family Name of Usual Name** * **Gender** * **Postcode.** |
| **TRCCNF** | **Confirmation of Patient Identity** |  |  |
| **TRCCNF-1** | **Where a matching record returned by the LPI or PDS in response to a trace is selected, a user MUST be prompted to confirm that the displayed record belongs to the patient.** | **Must** | **Even where a single match is found on the LPI or PDS with the exact input criteria, a ‘false-positive’ match can result. As an example, this can happen where the person being traced has no PDS record, but a person with the same details does already exist on PDS. A matching record is therefore found, but for the wrong person.**  **This confirmation of identity should be carried out in line with the following principles:**   * **Where the patient is present they should be asked for an item of demographic data not used in the trace as confirmation e.g. 1st line of the address or GP, whichever is not used in the trace** * **Where the patient is not present, unused demographic data accompanying the trace details may be used to confirm the correct record.**   **Confirming a match between a local and PDS record through this process means that the record can be considered ‘Traced & Verified’.** |
| TRCCNF-1.1 | A single returned record from PDS MAY be considered a match automatically if input criteria are used which ensure that only a unique and correct match can be made. This would be a trace on all of:   * Full Date of Birth * Full First Given Name * Full Family Name * Gender * Postcode. | May | A match between a local and PDS record made through this process means that the record can be considered ‘Traced & Verified’. |
| **TRCBCH** | **Batch Tracing** |  |  |
| **TRCBCH-1** | **Local systems MAY use batch processes to trace NHS Numbers for locally held records which do not have them, and to also verify locally held NHS Numbers which have not been verified.** | **May** | **An alternative batch approach is to use the DBS mechanism for tracing and verifying NHS Numbers. See** [**https://digital.nhs.uk/Demographics**](https://digital.nhs.uk/Demographics) **for more information.** |
| TRCBCH-1.1 | Each such batch process MUST meet the following requirements:   * For tracing NHS Numbers: the PDS Simple Trace Query MUST be used and Surname, Forename, Full Date Of Birth, Gender and Postcode MUST all be present and populated; * For verifying NHS Numbers: the PDS Retrieval Query MUST be used, followed by comparison of returned data against the locally held values (see note [\*1] for details). | Must | Batch processing may be carried out using:   * Local system batching of PDS trace messages. * The generic batching mechanism for PDS trace messages. See the MIM for details but note that only PDS Simple Trace and PDS Retrieval messages can be batched using this mechanism.   See the PDS Integration Guidance document for more detail on batching.  [\*1] The NHS Number can be considered verified if:   * The returned date of birth matches the locally held date of birth.   If the date of birth does not match, the NHS Number can still be considered verified if the following match:   * 2 out of 3 elements of the Date of Birth * First character of the First Given Name of Usual Name * First 3 characters of the Family Name of Usual Name. |
| TRCBCH-1.2 | Where such a batch process is used, the records concerned SHOULD be flagged on the local system as being ‘Traced & Verified’ against PDS. | Should |  |
| TRCBCH-1.3 | A local record flagged as ‘Traced & Verified’ MUST NOT be considered exempt from the patient confirmation process outlined in [TRCCNF](#TRCCNF). | Must |  |
| TRCBCH-1.4 | A local record flagged as ‘Traced & Verified’ MUST NOT be automatically synchronised with PDS unless the criteria laid down in the synchronisation requirements have been met, i.e. initial synchronisation has been overseen through use of the split-screen. | Must |  |

## Synchronisation Requirements

| Reqt. ID | Requirement Text | Rating | Notes |
| --- | --- | --- | --- |
| **SNCGEN** | **Synchronisation General** |  |  |
| **SNCGEN-1** | **For patient facing scenarios, a synchronisation MUST NOT be performed until the identity of the patient has been confirmed following a successful trace on the local system or the PDS.** | **Must** | **See** [**TRCCNF**](#TRCCNF) **requirements.** |
| SNCGEN-1.1 | Once a PDS record has been confirmed as correct for the patient, details SHOULD be retrieved using the PDS Retrieval Query message. | Should | Systems would normally be expected to use the PDS Retrieval.  An alternative approach for some read-only systems which do not need to use the SCN or certain other data that is only available from PDS in a PDS Retrieval Response could be to use the data from the trace response instead of making another interaction with PDS. Suppliers considering this approach should refer to the datasets supported by the PDS Simple/Advanced Trace Response and Retrieval Response interactions in the PDS Integration Guidance document. |
| **SNCGEN-2** | **For non-patient facing synchronisation events, the PDS Retrieval Query message MUST be used if the patient record will be used prior to a patient encounter.** | **Must** | **Examples of events at which a non-patient facing synchronisation could occur are:**   * **e-RS referrals** * **appointment letter runs.** |
| **SNCGEN-3** | **When using the PDS Retrieval Query message, local systems SHOULD use the Retrieval Item parameter wherever possible so that only appropriate patient demographic data is retrieved, though the exact item to be used will be a matter of local business need.** | **Should** |  |
| **SNCGEN-4** | **Local systems MUST be able to persist and use objects from the PDS which contain unpopulated optional elements.** | **Must** | **For an example, an address where lines 1, 3 and 5 have no data but lines 2 and 4 do.** |
| **SNCCMP** | **Comparison of Records** |  |  |
| **SNCCMP-1** | **Where a record that has not previously been synchronised has been confirmed as a match from the LPI, the corresponding PDS record MUST be traced.** | **Must** | **See requirements:** [**TRCPDS**](#TRCPDS)**,** [**TRCDPY**](#TRCDPY)**,** [**TRCCNF**](#TRCCNF)**.** |
| **SNCCMP-2** | **Where a record has been initially traced on PDS (i.e. no LPI record was initially found but a PDS record was successfully traced), a query MUST be made against the LPI to find a potential local counterpart for the PDS record.** | **Must** | **The purpose of this is to minimise the chance of creating a duplicate locally where a potentially matching record on the local system was missed during the initial tracing on the LPI.**  **The following comparison algorithms (**[**SNCCMP-2-1**](#SNCCMP21)**,** [**SNCCMP-2.1.1**](#SNCCMP211) **and** [**SNCCMP-2.2**](#SNCCMP22)**) are used to search for and compare local counterparts to the retrieved PDS record.**  **Suppliers may define and make use of additional comparison algorithms with interactive use of the system before determining that a new record needs to be created (**[**SNCCMP-3**](#SNCCMP3)**). Matching records found by such algorithms can only be regarded as potential matches, and therefore will require confirmation from a user before an actual match can be made. The system Functional Specification must include details of any such algorithms used and associated functionality.** |
| SNCCMP-2.1 | Local systems MUST query the LPI using the NHS Number returned by PDS in the trace response message. | Must | Suppliers need to consider the conditions for their own LPI. Does the LPI allow:   * Only records with ‘Traced & Verified’ NHS Number (verified against PDS)? * Additionally records with Unverified NHS Numbers (e.g. manually added NHS Numbers, unverified against PDS)? * Duplicate NHS Numbers on different local records? * Local records with no NHS Number?   The PDS/LPI comparison rules may vary depending upon these rules. |
| SNCCMP-2.1.1 | Where a single record on the LPI is found containing the NHS Number returned by PDS, a match MUST only be considered to be made if one of the following is true:   * The NHS Number was previously 'Traced & Verified'. * The NHS Number was not previously 'Traced & Verified' but there was a match on the full Date of Birth. * The NHS Number was not previously 'Traced & Verified' but there was a match on: * 2 out of 3 elements of the Date of Birth * First character of the First Given Name of Usual Name * First 3 characters of the Family Name of Usual Name. | Must | If a matching local record is found that has not previously been ‘Traced & Verified’ against PDS, then it can be considered a match as a ‘Traced & Verified’ record in any of these circumstances. |
| SNCCMP-2.2 | If the 1st query results in no match, a second query MAY be made using the following demographics:   * Full Date of Birth * Full First Given Name of Usual Name * Full Family Name of Usual Name * Gender * Postcode. | May | Note: This search is not possible for a Sensitive flagged record as postcode is not returned for such records by PDS.  If a matching local record is found that has not previously been ‘Traced & Verified’ against PDS, then it can be considered a match as a ‘Traced & Verified’ record. |
| **SNCCMP-3** | **Where no local match is found for a returned PDS record using any of the comparison algorithms, a new record MUST be written to the local system using the PDS provided data.** | **Must** | **The newly created record can be considered as a ‘Traced & Verified’ record.**  **Following these requirements means that it is possible for more than one record to exist in the LPI for the same patient. This may include multiple records with the same NHS Number. See guidance above.**  **Therefore further checks will be required to de-duplicate the LPI. See** [**LBOGEN-1**](#LBOGEN1)**.** |
| **SNCCMP-4** | **Duplicate local records found by the ‘local cross-check’ queries outlined in** [**SNCCMP-2.1**](#SNCCMP21) **to** [**SNCCMP-2.2**](#SNCCMP22) **MUST be referred to the Local Back Office for further investigation.** | **Must** | **See note on** [**SNCCMP-2.1**](#SNCCMP21)**.** |
| SNCCMP-4.1 | If such local duplicates are found, the originally retrieved PDS record SHOULD be inserted on to the LPI and used for the purposes of immediate care. | Should | Following this requirement will create an additional duplicate.  The benefit of that is that it is easier to manage the merging of records than to potentially have to unmerge data if an incorrect duplicate were to be chosen. |
| **SNCCMP-5** | **The local system MUST be capable of updating any matched local record with PDS data.** | **Must** | **This is relevant where a single match is made or one of duplicate matches is chosen to be used if the system does not follow** [**SNCCMP-4.1**](#SNCCMP41)**.**  **The NHS number must be updateable as a minimum, up to all the data held in common with PDS.** |
| **SNCSCN** | **Use of the Serial Change Number (SCN)** |  |  |
| **SNCSCN-1** | **Local systems MUST store the SCN locally in order determine synchronisation behaviour.** | **Must** |  |
| SNCSCN-1.1 | At each synchronisation event the SCN SHOULD be used in the first instance to evaluate the synchronisation status of records held on the local system and the PDS. | Should | Typical SCN values used in LPIs are:   * -ve value: indicating a ‘de-coupled from PDS’ state. * Null: Never synchronised with PDS. * 0: NHS Number is verified but the record is currently unsynchronised with PDS. * +ve value: NHS Number is verified and previously synchronised with PDS.   An alternative approach to using the SCN to evaluate the state of synchronisation is to compare all the data synchronised between the local and PDS sources using the split screen. |
| **SNCSCN-2** | **The local system SHOULD automatically overwrite the local record found using the algorithms outlined in** [**SNCCMP-2.1**](#SNCCMP21) **to** [**SNCCMP-2.2**](#SNCCMP22) **when the patient in question has been referred from another Spine system where identity has previously been confirmed, e.g. an e-RS appointment or receipt of an EPS prescription. This includes saving the SCN to the local database.** | **Should** | **For instance, with an e-RS booking, the referring organisation is required to synchronise the PDS record for the patient prior to sending the booking.**  **It is expected that local systems will be automatically updated with the retrieved PDS data.**  **But it is possible to hold the PDS data separately until a user has manually synchronised the two sources. However, all e-RS-related processing, such as appointment letters, must use the PDS data until this synchronisation has occurred.**  **Suppliers considering this approach must agree the process with NHS Digital.** |
| **SNCSCN-3** | **Where a local record already exists, initial synchronisation of the LPI and PDS records MUST be undertaken by manual comparison of details using a ‘split-screen’ mechanism.** | **Must** | **The term ‘initial synchronisation’ refers to the first time a synchronisation between the matched local and PDS records is undertaken. Because it is possible for the local record to have more up-to-date details than the PDS at this point, this initial synchronisation must be undertaken manually by a user.**  **This requirement means that local records must not be automatically overwritten if not previously synchronised. The exception to this is covered by the next requirement.** |
| SNCSCN-3.1 | Initial synchronisation MUST NOT occur where the logged-on user has read-only access to the local system. | Must | The local data should be used where the user has read-only rights.  This requirement means that where the logged-on user has read-only access to the local system, a local record may only be automatically overwritten where it has previously been synchronised with the PDS. |
| **SNCSCN-4** | **If subsequent synchronisations (i.e. after a record has been through the initial synchronisation process) are performed automatically, local systems SHOULD update the LPI with PDS data when the PDS SCN is greater than the local one and the local SCN is ≥ 1.** | **Should** | **Either thus requirement or** [**SNCSCN-4.1**](#SNCSCN41) **must be implemented.**  **This requirement includes recognising when data that has previously been synchronised with PDS is no longer present on PDS (i.e. has been removed since the last synchronisation event) and updating the local system accordingly. On no account should such removed data be automatically added back to PDS.**  **Suppliers whose systems use configuration to determine whether subsequent synchronisations are performed automatically or manually need to be prepared to be tested using both approaches.** |
| SNCSCN-4.1 | Such synchronisations MAY be performed by manual comparison of details using a split-screen mechanism. | May | Either thus requirement or [SNCSCN-4](#SNCSCN4) must be implemented.  Suppliers must consider user requirements and the volume of updates likely to occur when determining whether automatic synchronisation is to be implemented.  It may be appropriate to make this functionality switchable dependent on the business use of the system. |
| **SNCSCN-5** | **Where there is an interactive user, in addition to the use of the SCN and/or manual comparison of fields, if the local system detects that changes have occurred to the key-fields on the PDS (e.g. the death notification status has been set or the gender altered), that user MUST be informed.** | **Must** | **The additional key-field check must be applied where it is possible to refer a failure to an interactive user.**  **If no interactive user is involved in the process, the key-field check should not be performed.** |
| SNCSCN-5.1 | Interactive users MUST be given the opportunity to review and if necessary reject a change in the key-fields. | Must |  |
| SNCSCN-5.2 | A change in the PDS key-fields SHOULD be accepted to the local record or an update made to the PDS record at the point at which the system is notified of the change e.g. at a synchronisation event. | Should | Note: Death notification status on PDS cannot be removed by local systems. A death notification status incorrectly applied to a patient record would need NBO to remove it.  See: <https://digital.nhs.uk/National-Back-Office>. |
| SNCSCN-5.2.1 | If the interactive user rejects an update to the key-fields, the local record MUST be:   * ‘de-coupled’ from the PDS * referred to the Local Back Office for further investigation. | Must |  |
| **SNCSCN-6** | **Where there is no interactive user, or where the logged-on user has read-only access to the system and the records have previously been synchronised, the system MUST accept updates to key-fields from the PDS.** | **Must** |  |
| **SNCSCN-7** | **De-coupled records MUST NOT be used to update the PDS.** | **Must** | **De-coupled records may indicate a confused record. This needs to be resolved before further updates to PDS are made.** |
| SNCSCN-7.1 | De-coupled records MUST be capable of being updated locally. | Must |  |
| **SNCSCN-8** | **Local systems MUST provide tools to manage de-coupled records.** | **Must** | **The tools should support business processes for escalating problems to Local/National Back Office and functionality to re-synchronise/’re-couple’ records once issues are resolved.** |
| **SNCSCN-9** | **When performing an automatic PDS synchronisation on a previously unsynchronised local record, suppliers MUST provide a solution for avoiding valid local data being lost where no corresponding data item is returned from PDS.** | **Must** | **This is pertinent to an e-RS provider scenario where the local provider-system patient record already exists and has not previously been synchronised with the PDS e.g. it has a SCN = null.**  **e-RS processing requires the local record to be automatically overwritten with PDS data.**  **Whilst the referring system will have synchronised data with the PDS, the breadth of the data synchronised may be different to that supported by the provider system.**  **Suppliers must determine a strategy to either retain local data where PDS has no corresponding data or accept the PDS blank values. With both options it is beneficial to force a manual reconciliation of the record when the patient next attends.**  **Note: Automatic synchronisations can only be performed on unsynchronised records in an e-RS scenario, and must not be performed in other scenarios such as a letter run.** |
| **SNCSCN-10** | **If, on system upgrade, additional LPI/PDS data is synchronised, suppliers SHOULD reset local SCN values to ensure a manual re-synchronisation will occur.** | **Should** | **This is only applicable to records previously synchronised with a +ve SCN value.**  **Suppliers may consider strategies to avoid resetting the SCN. If so this must be documented in the system Functional Specification.** |
| **SNCSPL** | **Use of the Split-Screen** |  |  |
| **SNCSPL-1** | **When the 'split-screen' is shown, users MUST be given the option to 'defer' the synchronisation meaning no data will be changed on either system.** | **Must** | **Deferral may be appropriate where the user has insufficient information to resolve the differences.**  **Deferring the synchronisation of records is not desirable as it means the PDS is not maintained effectively. However, it is sometimes required.** |
| SNCSPL-1.1 | Deferral SHOULD result in a notification to a local business function for resolving failed synchronisations. | Should | Deferrals should be managed appropriately. Therefore local systems should allow deferrals to be monitored and managed. |
| SNCSPL-1.2 | Tools MUST be provided to ensure deferrals can be resolved in a timely fashion on the local system. | Must | Suppliers must make user organisations aware that local procedures and timescales for the resolution of deferred synchronisations are required. |
| **SNCSPL-2** | **Local systems MUST highlight only genuine differences on a split-screen.** | **Must** | **Typically a local system will display a banner of key demographic details for the patient and then display any differences between the LPI and PDS records.** |
| SNCSPL-2.1 | Local systems MUST NOT highlight differences associated with:   * Unnecessary whitespace * Inclusion / removal of commas / full stops / other punctuation characters * Upper / lower case discrepancies. | Must | Failure to do this may lead to unnecessary user effort to resolve insignificant differences. |
| SNCSPL-2.1.1 | Where such discrepancies are not displayed on the split-screen, local systems MUST NOT update that object on either data source. | Must |  |
| SNCSPL-2.2 | When comparing addresses for display on a split-screen, local systems MUST ignore blank lines, i.e. MUST NOT highlight differences in address formatting. | Must | Where comparison of address lines is required, suppliers should remove blank lines from the 2 addresses, prior to comparison. |
| SNCSPL-2.3 | When comparing addresses for display on a split-screen, local systems SHOULD ignore differences in line 5. | Should | For example, where address line 5 on PDS (i.e. County) is blank and a value is held locally, or vice-versa, or one source has a shortened form of the county and the other a long form.  The reason for this requirement is that county is not significant in postal terms, and resolving differences such as these can cause additional and unnecessary work for users. |
| **SNCSPL-3** | **System providers MUST ease cross-comparison activity on local systems by, for example:**   * **highlighting potential differences in different colour** * **using bold/italics or different font sizes** * **using ‘tabbed views’ or only showing differing fields.** | **Must** | **The system Functional Specification should make references to any such strategies for easing comparisons.** |
| **SNCSPL-4** | **The functionality of the split-screen MUST allow for the update of individual objects from each source, i.e. suppliers MUST NOT introduce functionality that results in an ‘ALL’ or ‘NOTHING’ update.** | **Must** |  |
| SNCSPL-4.1 | Suppliers MAY default all selections on the split-screen to one data source or the other, provided that the default selection can be changed. | May |  |
| SNCSPL-4.2 | Selection of data from each source MUST be at the object level e.g. the whole Usual Address, not individual address lines. | Must |  |
| **SNCSPL-5** | **The split-screen MUST NOT display primary care or pharmacy codes without also displaying corresponding name and/or address information provided from local or SDS reference data.** | **Must** | **Note: SDS is updated in real-time whereas ODS files are updated periodically. PDS data reflects SDS. It is therefore possible for PDS data such as Practice codes to not be present in the ODS data. It is preferable if local systems utilise SDS lookup data.** |
| **SNCSPL-6** | **The following fields, when different on the local system and the PDS, MUST be given special prominence on the split-screen, e.g. be highlighted in a different colour or through the use of additional prompts to system users:**   * **NHS Number** * **Date of birth** * **Date of death** * **Gender.** | **Must** | **Discrepancies in these fields may be an indication of a confused record which needs to be addressed in consultation with the patient.** |
| **SNCSPL-7** | **Local systems MUST provide functionality for users to escalate possible confusion cases from the split-screen.** | **Must** | **Confusion cases will not normally be resolvable without the input of the National Back Office.**  **See:** [**https://digital.nhs.uk/National-Back-Office**](https://digital.nhs.uk/National-Back-Office)**.** |
| SNCSPL-7.1 | If the user escalates such a confusion case, the local record SHOULD be:   * De-coupled from the PDS * Referred to Local Back Office/service desk for further investigation. | Should |  |
| **SNCDTS** | **Business and System Effective Date, and Source Information Synchronisation** |  |  |
| **SNCDTS-1** | **Local systems MAY display business effective dates on demographics editing screens.** | **May** |  |
| **SNCDTS-2** | **Local systems MUST be able to persist and use objects from the PDS which contain unpopulated business effective dates.** | **Must** | **If business effective dates are required for local processing, e.g. a ‘business effective from’ date for primary care information, local systems may substitute blank data with default data for local processing only.**  **For systems which update PDS, any such default date must not be passed back to the PDS in an update as a ‘legitimate’ business effective date without patient approval. See** [**UPDDTS-1.3**](#UPDDTS13)**.** |
| **SNCDTS-3** | **Where an object with a ‘business effective to’ date in the past is returned in current PDS data, local systems SHOULD indicate that these objects are out of date.** | **Should** | **Suppliers will need to take user guidance on preferences in this scenario. It may be preferable to take some data such as Usual name and Usual Address even if the ‘business effective to’ date is set in the past, as these items should not normally be removed from PDS without providing a current alternative.**  **An alternative to indicating they are out of date is to ignore their presence in a retrieval subject to the exceptions stated above (i.e. for usual name and usual address).** |
| **SNCDTS-4** | **Local systems MAY store PDS-assigned system effective dates and source information.** | **May** | **System effective dates and source information are only available where history was requested and is returned from PDS.** |
| SNCDTS-4.1 | Local systems MAY display PDS-assigned system effective dates or source information on demographics screens. | May | Where business effective dates are available, these should be displayed to users. If business effective dates are not present on the PDS record then suppliers may consider the display of system effective dates where available. |
| **SNCNAM** | **Name Synchronisation** |  |  |
| **SNCNAM-1** | **Local systems MUST be able to display any name prefix value returned by the PDS.** | **Must** |  |
| **SNCGPS** | **GP Practice Data Synchronisation** |  |  |
| **SNCGPS-1** | **Where local systems store primary care information, changes detected in registered GP practice information on the PDS during synchronisation SHOULD be updated on the local database.** | **Should** |  |
| SNCGPS-1.1 | Where primary care business effective dates are absent in a retrieval from the PDS, or where primary care date information is inconsistent with reference data (NACS or SDS information), local systems MAY use locally assigned default dates if required for local purposes, e.g. commissioning. | May |  |
| **SNCGPS-2** | **Where applicable, local systems MUST be capable of consuming and displaying primary care data from PDS regardless of whether a GP Practice code or a GP (GNC) code is returned.** | Must | **This might only be applicable where historic data had been requested (as all current PDS data will be a GP Practice code).** |
| **SNCCST** | **Consent to Share Synchronisation** |  | **SNCCST\* requirements only relate to systems that have the ability to electronically share detailed clinical data across organisational boundaries for purposes *other than* direct clinical communication.**  **Examples of direct clinical communication would be a referral or a GP2GP transfer of patient notes.**  **An example of a purpose *other than* direct clinical communication would be the data analysis of detailed clinical data by a 3rd party organisation.**  **See Information Governance NHS CRS Consent to Share: Access Rules - NPFIT-FNT-TO-IG-DES-0135 and IG Requirements for ESP and GPSoC Systems - NPFIT-FNT-TO-TIN-0427 for a full description of consent requirements.**  **The definition of detailed clinical data does not include PDS and Summary Care Record (SCR) data.** |
| **SNCCST-1** | **Local systems MUST be capable of reading consent to share status on the PDS.** | **Must** |  |
| **SNCCST-2** | **Local systems MUST allow a consent status of ‘2’ (Express Dissent) to be overridden.** | **Must** |  |
| SNCCST-2.1 | Local systems MUST restrict the ability to override dissent to only those eventualities and roles outlined in NPFIT-FNT-TO-IG-DES-0135: NHS CRS Consent / Dissent: Information Sharing Rules. | Must |  |
| **SNCDTH** | **Death Data Synchronisation** |  |  |
| **SNCDTH-1** | **Local systems SHOULD update a record’s local counterpart when it detects a death has been recorded on the PDS.** | **Should** | **This will be the normal operation of systems. However, the local system could notify users of a PDS recorded death for manual resolution.** |
| **SNCDTH-2** | **Local systems SHOULD NOT lock records on death.** | **Should** | **Depending on the business scenario, there may be a requirement to append pre/post-mortem demographic or clinical data.** |
| **SNCDTH-3** | **Local systems MUST allow the user to un-decease the patient within the local system alone, i.e. unset the local death details.** | **Must** |  |
| SNCDTH-3.1 | A record that has been un-deceased locally MUST be de-coupled from the PDS until such time as the problem/mismatch has been resolved. | Must | National Back Office must be notified that the patient has been un-deceased.  The NBO will verify the status of the patient and update the death status on the PDS. The local system can then be updated if required. |
| **SNCDTH-4** | **When an e-RS appointment or an EPS prescription is cancelled due to patient death, local systems MAY consider this an ‘implied’ death notification and trigger a PDS synchronisation, where records have previously been synchronised.** | **May** |  |
| **SNCRPS** | **Related Persons Synchronisation** |  | **Suppliers must determine the business value of supporting related persons. It can be complex to develop and for users to maintain. Therefore, there should be a clear business requirement to do so.** |
| **SNCRPS-1** | **Local systems MAY synchronise related persons, where appropriate for local business purposes.** | **May** |  |
| SNCRPS-1.1 | Where they are supported, local systems SHOULD be able to manipulate up to 99 related persons. | Should |  |
| **SNCRPS-2** | **When persisting PDS data to the local system on synchronisation, the system MUST be capable of handling inconsistent related person contact ranking, e.g. where contact ranking ‘1’ is not present but ‘2’, ‘3’ and ‘4’ are still available, or where duplicate contact ranking values are found.** | **Must** |  |
| **SNCRPS-3** | **Local systems MUST reinforce the fact that related person information from PDS identified by an NHS Number is not to be divulged to the presenting patient, e.g. through the use of appropriate warnings.** | **Must** |  |
| **SNCRPS-4** | **Local systems MUST NOT support the display of related person information identified by NHS Number if this information is accessible by patients, e.g. a Patient-accessed kiosk.** | **Must** |  |
| SNCRPS-4.1 | If this information is NOT accessible by patients, local systems MUST support the retrieval and display of related person information identified by NHS Number. | Must |  |
| SNCRPS-4.1.1 | The information thus displayed MUST be restricted to the data available for a related person not identified by NHS Number, i.e. a single current usual address, a single current usual name, telecom addresses, communications preferences etc. | Must | Suppliers should be aware that the range of information available for a related person modelled through use of the NHS Number may be greater than that for a non-NHS Numbered related person. Local systems should restrict the display of this information in line with that available for the non-NHS Numbered related person.  See section 6.19 of the PDS Integration Guidance document for the full dataset for a related person. |
| **SNCBCH** | **Batch Synchronisation** |  |  |
| **SNCBCH-1** | **Where records have previously been synchronised with the PDS, local systems MAY use batch retrieval mechanisms to automatically synchronise records when required for batch operations e.g. appointment letters.** | **May** | **Note: See** [**TRCBCH**](#TRCBCH) **for batch tracing options summary.** |
| **SNCBCH-2** | **Where records have NOT previously been synchronised with the PDS, local systems MUST NOT use batch retrieval mechanisms to automatically synchronise records.** | **Must** | **See also** [**SNCGEN**](#SNCGEN)**.** |

## Flagged Records Requirements

| Reqt. ID | Requirement Text | Rating | Notes |
| --- | --- | --- | --- |
| **FLGBUS** | **Business Flagged Records** |  | **Local business practices for the handling of PDS flagged records must be described in the system Functional Specification.** |
| **FLGBUS-1** | **On detection of a Business Flagged record, the local system MAY warn users:**   * **When accessing the patient’s record that the record is currently undergoing a data quality investigation** * **To check the record with the patient and allow them to correct inaccuracies accordingly.** | **May** | **The Business Flag indicates that the record is part of a National Back Office investigation. It can be helpful for the details on the PDS record to be reviewed by the patient to ensure they are current.**  **This may not be appropriate in some business scenarios (e.g. 111 or other call centre scenarios).**  **Further information can be found at:** [**https://digital.nhs.uk/National-Back-Office**](https://digital.nhs.uk/National-Back-Office)**.** |
| **FLGSUP** | **Superseded Records** |  |  |
| **FLGSUP-1** | **In user-interactive processing, on receipt of a Superseded Record code from the PDS, the local system MUST warn users accessing the patient’s record, that the local record is wrongly identified.** | **Must** | **Superseded records are denoted by error code 17 or 44.** |
| FLGSUP-1.1 | The warning message displayed by the local system MUST advise the user:   * That the NHS Number being used has been replaced * That the patient should be informed of the replacement number (where possible). | Must |  |
| **FLGSUP-2** | **On receipt of a Superseded Record code, if the new NHS Number returned in the response is NOT present on another record in the local database, the superseded number MUST be replaced with the superseding number.** | **Must** |  |
| FLGSUP-2.1 | Suppliers MAY refer this superseded record processing to the Local Back Office. | May |  |
| FLGSUP-2.2 | The system MUST reset any locally-held SCN information for the superseded record. | Must | This ensures that the local record will undergo an ‘initial synchronisation’ process when next accessed. |
| **FLGSUP-3** | **On receipt of a Superseded Record code, if the new NHS Number returned in the response is present on another record in the local database, then the superseded record MUST continue to be used for the purposes of this episode of care and the Local Back Office MUST be notified.** | **Must** | **The superseded record is the record for which patient identity has been confirmed and should continue to be used while the Local Back Office processes the local merge.** |
| FLGSUP-3.1 | Where the superseded record continues to be used while the Local Back Office is processing the merge, the local system SHOULD warn users accessing the patient’s record that the local record is wrongly identified. | Should |  |
| FLGSUP-3.1.1 | The warning message displayed by the local system SHOULD advise the user:   * That the NHS Number being used is no longer valid * That the record has been referred to the Local Back Office for processing. | Should | The actual wording may be varied. |
| **FLGINV** | **Invalid Records** |  |  |
| **FLGINV-1** | **In a user-interactive process, on receipt of an Invalid NHS Number code from the PDS the local system MUST warn users accessing the patient’s record that the local record is wrongly identified.** | **Must** | **Invalid NHS Numbers are denoted by error code 22.** |
| FLGINV-1.1 | The warning message displayed by the local system MUST advise the user:   * That the NHS Number being used is no longer valid * That the record is being referred to the Local Back Office for processing * That all demographic and clinical information for this patient should be regarded with caution until the processing is complete. | Must | The actual wording may be varied. |
| FLGINV-1.2 | Local systems MAY mark the record in such a way that EVERY TIME it is accessed all users are made aware:   * that there are data anomalies on the record which could constitute a clinical risk * that the anomalies may pertain as much to the clinical as the demographic record. | May | Whether to adopt this approach should be a business decision. |
| **FLGINV-2** | **On receipt of an Invalid NHS Number code, the wrongly identified local record MUST be ‘de-coupled’ from the PDS.** | **Must** | **De-coupling will exempt the local record from further synchronisation until it has been re-coupled and the SCN reset to 0 (assuming SCN values are used as per** [**SNCSCN-1.1**](#SNCSCN2)**). It should also trigger a Local Back Office task to resolve.** |
| FLGINV-2.1 | Local systems MUST notify the Local Back Office that an invalid record has been encountered. | Must |  |
| FLGINV-2.1.1 | The notification MUST contain the affected record NHS Number. | Must |  |
| FLGINV-2.1.2 | The notification MAY contain patient demographics and/or identifiers to aid in record identification, i.e. the following fields where held on the local record:   * Local identifier(s) * The invalid, local NHS Number (clearly marked as being invalid) * Usual name * Any alias, previous or preferred names * Date of Birth * Gender * Usual address and/or postcode. | May |  |
| **FLGSEN** | **Sensitive records** |  | **As described in the earlier narrative there are several approaches to sensitive record processing.**  **Requirements** [**FLGSEN-1**](#FLGSEN1)**\* and** [**FLGLCL**](#FLGLCL)**\* reflect the preferred model to user-interactive sensitive record processing whereby access to locally-held location details are restricted by user access rights.**  [**FLGSEN-2**](#FLGSEN2) **proposes an alternative whereby access to records marked as Sensitive on PDS are not restricted. This may be appropriate in certain business scenarios.**  **The selected approach to sensitive record processing must be evaluated by suppliers and user representatives in terms of patient safety in the business context in which the local system will be used.**  **Suppliers must describe their approach to sensitive record processing in the system Functional Specification.** |
| **FLGSEN-1** | **If a Sensitive record code is returned from PDS, the local system SHOULD NOT display the following data held on the matching local system record, unless the logged-on user has the appropriate RBAC rights to view this information:**   * **patient addresses** * **telecoms information** * **related persons** * **GP Practice/Pharmacy data.** | **Should** | **If the adopted approach is to restrict access to this data then** [**FLGSEN-1**](#FLGSEN1) **must be implemented.**  **A sensitive record is denoted by error code 5 or 9, and also by a value of ‘S’ for the Information Sensitivity Indicator (carried by the confidentialityCode element in the HL7 message).**  **‘Display’ of patient records should be taken to mean display on screens and print out such as lists of patient data which include sensitive information.** |
| FLGSEN-1.1 | Local systems MUST restrict access to any details relating to the patient’s location held locally. | Must |  |
| FLGSEN-1.1.1 | Access to the location details on the record MUST be restricted using RBAC. | Must |  |
| FLGSEN-1.1.2 | Users with appropriate access rights MUST continue to be able to access and update location information held locally only. | Must |  |
| **FLGSEN-2** | **Systems MAY display locally-held details for the sensitive-flagged record without RBAC restrictions, if the supplier/user’s patient safety analysis deems the risk appropriate.** | **May** | **This is the alternative approach to that in** [**FLGSEN-1**](#FLGSEN1) **and its subsidiary requirements and must be implemented if the adopted approach is not to restrict access to location-related data.**  **PDS sensitive flagged records will not return location information. Therefore, details held against a local record may be considered the user organisation’s responsibility. The display or otherwise of these records may be decided once an appropriate safety analysis has been performed.**  **The results of any safety analysis relating to sensitive records must be summarised in the system Functional Specification.** |
| **FLGSEN-3** | **If a sensitive record is selected from a ‘pick-list screen’ or detected during the course of synchronisation, the local system MUST warn users accessing the patient’s record that the record is sensitive, regardless of RBAC rights.** | **Must** | **Pick-lists are referred to in** [**TRCDPY-1**](#TRCDPY1)**. This is the results screen from a PDS trace.**  **See also** [**TRCDPY-4**](#TRCDPY4)**.** |
| FLGSEN-3.1 | The advisory message displayed by the local system MUST also warn the user:   * If RBAC is used to restrict access, that unless they have the appropriate RBAC rights, they will not be able to view or amend ‘location’ data for the patient * That updates to this record will not be sent to the PDS * That no new NHS Number allocation should be made for this patient. | Must | The actual wording may vary. In particular it may be considered unnecessary to warn the user about updates to PDS and the need for no allocation. |
| **FLGSEN-4** | **Local Systems SHOULD continue to attempt record synchronisation with the PDS** **at subsequent significant events, so that it can be detected whether a sensitive flag has been removed from the record.** | **Should** |  |
| **FLGSEN-5** | **Local systems SHOULD continue to update their LPI with non-restricted data from the PDS on synchronisation.** | **Should** | **Any attempt to send updates made on the local system to the PDS will be rejected.** |
| **FLGSEN-6** | **Where local, restricted, ‘location’ information is present, this data MUST NOT be overwritten with blank data from PDS on record synchronisation.** | **Must** | **Blank data here refers to the absence of location-related data (addresses, telecoms, related persons, GP Practice etc.) due to masking by PDS.** |
| **FLGSEN-7** | **Where location information for sensitive records is required by integrated ‘downstream’ systems, local systems SHOULD automatically replace the suppressed data with default data (such as “data not available” i.e. without indicating that the default is used in place of sensitive information), or left blank.** | **Should** | **Ordinarily this requirement must be met. However, where it is known that a downstream system has the capability to shield protected data for a ‘S’ flagged patient, allowing access to the protected data under RBAC control, it may be passed the full patient record including any locally entered protected data. More detail about this can be found in NPFIT-FNT-TO-DSD-0120.06 Business Use Case: Sensitive Patients – Local Business Processes v1.0.** |
| **FLGLCL** | **Locally Flagged Records** |  | **Implementation of requirements in this section is dependent on the responses to** [**FLGSEN-1**](#FLGSEN1)**/**[**FLGSEN-2**](#FLGSEN2)**.** |
| **FLGLCL-1** | **Local systems SHOULD be able to locally mark a record as flagged for sensitivity, so that sensitive behaviour can be ensured independently of PDS interaction.** | **Should** |  |
| **FLGLCL-2** | **The system SHOULD restrict access to location-related data held locally for any record traced on the LPI with a local sensitivity flag.** | **Should** |  |
| **FLGLCL-3** | **When a locally-flagged sensitive record is selected from a trace or encountered during synchronisation, the system MUST display a warning of the sensitive nature of the record.** | **Must** |  |

## PDS Update Requirements

| **Reqt. ID** | **Requirement Text** | **Rating** | **Notes** |
| --- | --- | --- | --- |
| **UPDGEN** | **Updates General** |  | **This and other UPD\* sections are only relevant to systems which update PDS.** |
| **UPDGEN-1** | **Systems MUST synchronise a locally stored patient record prior to performing a PDS General Update.** | **Must** | **This is in order to refresh any demographic data which may have changed on the PDS, including PDS Object Identifiers, and to obtain the current Serial Change Number for the record being updated.** |
| UPDGEN-1.1 | Local systems SHOULD synchronise all demographic data held in common with the PDS and which it is subsequently capable of modifying. | Should | Generally all data held in common between the PDS and local system will be capable of being synchronised.  However, suppliers may identify instances of data incompatibilities which prohibit this. For instance, where there are data type differences between the PDS and LPI.  Suppliers must indicate in the Data Supported tab of the Requirements Traceability Matrix the PDS data the local system will synchronise. This must include a mapping of the range of types and codes used for each synchronised item. See [Appendix A Data Support](#Appendix1), which replicates the list of data items from the Data Supported tab. |
| **UPDGEN-2** | **If the local system has an LPI it MUST update the PDS whenever local patient demographics are amended, except in the following circumstances:**   * **if the PDS is unavailable** * **at which point, the local system MUST indicate that the records are now not synchronised.** * **if the only data amended is not held on the PDS** * **e.g. ethnicity** * **if the only data amended is explicitly exempt from update on the PDS** * **e.g. primary care information from secondary care** * **if the record is sensitive or invalid** * **i.e. ‘S’ flagged records or records identified by an invalid NHS Number** * **if the local record is de-coupled from the PDS or in an unsynchronised state** * **e.g. there is an erroneous death status set on the PDS.** | **Must** |  |
| **UPDGEN-3** | **Update messages MUST contain only changed data, i.e. be partial updates.** | **Must** | **The update message must not contain all patient data held locally. It must only contain the data or objects that have been ‘altered’, ‘added’ or ‘removed’.** |
| **UPDGEN-4** | **Local systems MUST NOT ‘add’ or inadvertently ‘alter’ or ‘remove’ any object on the PDS, which it cannot update in its entirety. This includes:**   * **Any PDS object where the local system cannot support all of its component elements, e.g. a name without other given names** * **Any PDS object where the local system cannot support all MIM defined line-lengths, e.g. address lines of only 25 characters** * **Any PDS object where the local system does not fully support a given vocabulary, or for which a local vocabulary cannot be mapped “one-for-one” to MIM / PDS Data Dictionary reference values.** | **Must** | **This should not be taken to mean that a local system must store the object natively in its own database. For example systems without an LPI can still update PDS as long as all data for the objects is available.**  **Imperfect data support, such as not holding business effective dates on the LPI, does not preclude the update of objects which include these dates. Default values can be created for this purpose. Where not all data is displayed by the local system existing values received from PDS can be maintained and reflected back in any update amending the data that is supported.**  **Another example could be where the local system does not support Other Given Names or Suffix. In any update (altering) of the Name object, the local system must reflect back the values of these fields as retrieved from PDS.**  **Similarly where related person details retrieved from PDS contain data that need not be supported (see** [**UPDRPS-2**](#UPDRPS2)**/**[**UPDRPS-2.1**](#UPDRPS21)**) then this data must be included in any update (altering) of the related person details.**  **Where the local system has such imperfect data support the approach adopted should be detailed in the system Functional Specification and also the ‘Data Supported’ tab of the RTM.**  **The PDS Data Dictionary is contained within the PDS Integration Guidance document.** |
| UPDGEN-4.1 | When updating an object on the PDS, local systems MUST NOT allow an object’s vocabulary classification to be ‘altered’, unless there has been a human decision to do so. | Must | For example a related person must not have their relationship type altered systematically from ‘13’ (Father) to ‘03’ (Parent). |
| **UPDGEN-5** | **All demographic data transmitted by local systems to the PDS in HL7 version 3 messages MUST be in the ASCII (standard) character set.** | **Must** |  |
| UPDGEN-5.1 | Local systems MAY store Unicode encoded data natively as long as it is possible to convert to ASCII standard text without loss of meaning when communicated to the PDS. | May |  |
| **UPDGEN-6** | **If the local system has an LPI, updates to the PDS SHOULD be ‘loosely coupled’ unless synchronous behaviour is required for local business processing.** | **Should** | **Whether the system behaves synchronously or asynchronously, suppliers need to consider time-out periods to manage failed and delayed messages.** |
| **UPDGEN-7** | **The SCN MUST be reset to 0 upon sending the PDS Update.** | **Must** | **The SCN value retrieved from PDS must be included in the Update message.**  **However immediately before the update is sent, the local SCN value must be reset to 0 (see Note in** [**SNCSCN-1.1**](#SNCSCN2)**).**  **Once an update acceptance message is returned the local SCN can be set to the new PDS value contained within the message.**  **This means that if the update fails (or no response is received) the local record will be recognised as requiring a manual synchronisation against PDS when next accessed.** |
| UPDGEN-7.1 | Increments in the SCN MUST be stored in the local database only when returned from the PDS in response to updates. | Must |  |
| **UPDGEN-8** | **Application acknowledgements received in response to PDS updates MUST be captured and be capable of being viewed within the system.** | **Must** | **This could be satisfied through a Local Back Office reporting process.** |
| **UPDSEM** | **PDS Update Semantics** |  |  |
| **UPDSEM-1** | **Update messages which modify non-singular data items (e.g. name, address, telecoms) MUST explicitly identify, by use of the PDS Object Identifier, which instance of an object is being ‘altered’ or ‘removed’.** | **Must** | **When the PDS Object Identifier should be retrieved by local systems is a design issue. Suppliers may wish to retrieve them immediately after ‘adding’ an object to the PDS; they may rely on the synchronisation immediately preceding any update.**  **However, it should be noted that Spine now allows PDS Object Identifiers to be specified with data being “added” (see the subsidiary requirements** [**UPDSEM-1.1**](#UPDSEM11) **/** [**UPDSEM-1.1.1**](#UPDSEM111)**).** |
| UPDSEM-1.1 | Update messages which add non-singular data items (e.g. name, address, telecoms) MAY include a PDS Object Identifier generated by the local system. | May |  |
| UPDSEM-1.1.1 | Where a PDS Object Identifier generated by the local system is supplied in an update message, it MUST adhere to the following rules:   * The PDS Object Identifier MUST be unique within the type of object (e.g. where a telecommunication address for a patient is being added there must not already exist a current telecom for that patient with the same PDS Object Identifier); * The PDS Object Identifier MUST be at least 4 characters and no more than 10 characters long; * The PDS Object Identifier MUST contain only alphabetic (upper case and/or lower case) and/or numeric characters (i.e. no punctuation or other characters may be present). | Must | “Unique within the type of object” refers to current data only. Adding an object instance with the same PDS Object Identifier as a historic instance (where that PDS Object Identifier does not exist amongst any current instance) is allowable.  PDS Object Identifiers are case sensitive and therefore PDS Object Identifiers used within updates to existing objects must exactly match the existing case. |
| **UPDSEM-2** | **Update messages MUST include value data for objects being ‘altered’ or ‘added’ (either as “value” or “code” attributes, or for complex objects as sub-elements).** | **Must** |  |
| **UPDSEM-3** | **Update messages MUST NOT include value data for objects being ‘removed’.** | **Must** |  |
| **UPDSEM-4** | **When any object is being ‘altered’, local systems MUST provide all the elements/attributes within the object for which data is held on the local system.** | **Must** | **Any attributes for a simple object or elements for a complex object that are not provided (or are null) will be considered by PDS a delete of that attribute/element.**  **See the** [**UPDGEN-4**](#UPDGEN4) **note describing how the requirement may be met where all elements of an object are not held locally.** |
| **UPDSEM-5** | **When ‘altering’ name, address or telecom objects, local systems MUST NOT change the “use” attribute for a given object or an object of a particular “use”/sub-type combination, e.g. ‘alter’ an 'H' telecom of sub-type 'tel:' to an 'HP' telecom of sub-type 'tel:'.** | **Must** | **If the use is to be changed, the object must be removed and then a new one added. This is possible in a single update message.**  **Elements such as Usual name (Type ‘L’) cannot be removed though.** |
| **UPDSEM-6** | **Local systems MUST NOT attempt to ‘add’ objects which already exist.** | **Must** | **For example, if a language already exists on the PDS record for the patient, and a different language needs specifying for the patient, the existing language must be modified by use of the “altered” updateMode; any attempt to use the “added” updateMode where this data already exists will be rejected by the PDS.** |
| **UPDSEM-7** | **Local systems MUST NOT attempt to ‘alter’ or ‘remove’ objects which do NOT exist.** | **Must** | **For example, if a language does not already exist on the PDS record for the patient but a language needs specifying, the “added” updateMode must be used; any attempt to use the “altered” or “removed” updateMode where this data does not already exist will be rejected by the PDS.** |
| **UPDSEM-8** | **Local systems MUST NOT attempt to remove any of the following objects without providing a replacement value:**   * **usual name (“use” type ‘L’)** * **gender** * **date of birth** * **date/time of death** * **consent (to share).**   **This requirement applies equally to the semantics of the update message itself, i.e. MUST NOT use the ‘removed’ “updateMode”.** | **Must** |  |
| **UPDSEM-9** | **Where date of birth is to be ‘added’ or ‘altered’, the full birth date (CCYYMMDD) MUST be provided in the update.** | **Must** |  |
| UPDSEM-9.1 | Time of birth MAY also be provided (CCYYMMDDhhmm). | May | Time of birth would only typically be provided within the PDS General Update message where it is being corrected. This might be required where an incorrect value had previously been provided in a PDS Create Initial Record Request message.  Another scenario would be where a time of birth is present on the PDS record and the date of birth is being corrected, in which case the time of birth should be reflected back unchanged unless it was also being corrected.  Another potential scenario is where a record for a baby was added to PDS without time of birth and a value needs to be added in. |
| **UPDSPT** | **Data Support** |  |  |
| **UPDSPT-1** | **Local systems which retrieve from and update PDS MUST support the following minimum dataset:**   * **one and only one current usual name (“use” = ‘L’)** * **person gender** * **date of birth** * **one and only one current usual address (“use” = ‘H’).** | **Must** |  |
| **UPDSPT-2** | **Local systems which retrieve from and update PDS SHOULD support the following data items:**   * **one and only one current preferred name (“use” = ‘PREFERRED’)** * **date of death** * **one and only one current temporary address (“use” = ‘TMP’)** * **one and only one current home telephone number (“use” = ‘HP’)** * **one and only one current mobile telephone number (“use” = ‘MC’)** * **language and interpreter required indicator.** | **Should** | **Systems may also support other data items subject to any specific restrictions within these requirements.**  **Also see section 6.9.3 of the PDS Integration Guidance document for additional information regarding a complication with supporting home telephone number.** |
| **UPDVLD** | **Data Validation** |  |  |
| **UPDVLD-1** | **Local systems MUST validate data prior to updating PDS.** | **Must** |  |
| UPDVLD-1.1 | Dates, when ‘added’ or altered’ on the PDS, MUST be sent as valid, full dates in the format CCYYMMDD, e.g. if a system asks for dates to be input as MM, DD, YY, validation MUST ensure that the DD field is not passed to the PDS as MM and that YY if correctly expressed as a four digit year. | Must | CCYYMMDDhhmm is acceptable for date of birth or death (birthTime or deceasedTime HL7 elements). |
| UPDVLD-1.2 | Dates of birth and death when ‘added’ or ‘altered’ on the PDS MUST NOT be future dates. | Must |  |
| UPDVLD-1.3 | Any vocabulary data contained in an update MUST be validated against the appropriate vocabulary in the MIM / PDS Data Dictionary. | Must | The PDS Data Dictionary is contained within the PDS Integration Guidance document. |
| UPDVLD-1.4 | When sent to the PDS in an update, the following data MUST be valid, current values from the applicable reference data sources, i.e. not free-text:   * NACS codes, e.g. pharmacy code * NHAIS cyphers * Postcode * PAF key. | Must |  |
| UPDVLD-1.5 | Telecommunication addresses when sent to the PDS indicating telephone, fax or textphone numbers MUST conform to the following requirements:   * All local numbers (i.e. UK numbers not provided in an international format) MUST include STD codes, MUST be a minimum of 10 characters in length and MUST begin with a zero. * All international numbers MUST be prefixed with "+" followed by the country code and MUST be a minimum of 12 characters in length. Any leading zero in the area code MUST be omitted except where the area code has been incorporated into the subscriber's number and a leading zero has been retained (the only known instance of this is with Italian landlines, international prefix +39). * Extension numbers MAY be sent to PDS using the text **;ext=** to separate the extension from the rest of the number. * Text SHOULD NOT be included within the telephone number (apart from when used as part of the extension number convention). * Visual separators (e.g. hyphens, dots and brackets) MUST NOT be included. * Space characters MUST NOT be included. | Must |  |
| UPDVLD-1.6 | Telecommunication addresses when sent to PDS indicating email addresses MUST conform to the following requirements:   * A single instance of the **@** symbol MUST be present.to separate out the local part of the e-mail address from the domain. * The local part MUST contain at least one character. * The domain MUST contain at least one character. * The local part and domain MUST only contain characters from the following set: any alphabetic character (upper or lower case), any numeric character and any of the following characters between but not including the double quotes:   “.!#$%&’\*+-/=?^\_`{|}~”. | Must |  |
| UPDVLD-1.7 | Person or related person names where ‘added’ or ‘altered’ by local systems and prior to inclusion in an update message MUST adhere to the following formatting rules:   * Names MUST include family name and first given name * Sub-elements of a name, with the exception of other given names, MUST NOT exceed 35 characters in length * All other given names when space delimited MUST NOT exceed 100 characters in length * Sub-elements of a name MUST NOT contain extraneous whitespace, i.e. consecutive space characters or beginning/ending in a space character. | Must | Typically, local systems may not hold a whole name such as with preferred name, but when adding this data to PDS they need to ensure that both a family and given name is supplied. |
| UPDVLD-1.8 | If any of the following list of person name prefixes is ‘added’ or ‘altered’ by local systems and included in an update message, the value MUST conform to the following NHS Data Dictionary values and format:   * Mr * Mrs * Ms * Dr * Rev * Sir * Lady * Lord * Dame | Must | This does not preclude other prefixes being used. |
| UPDVLD-1.8.1 | Local systems MUST NOT include the full-stop character in any name prefix sent to the PDS in an update. | Must |  |
| **UPDDTS** | **Business and System Effective Dates, Notified Dates and Source Information** |  |  |
| **UPDDTS-1** | **Where an object supporting business effective dates is ‘added’ or ‘altered’, a ‘business effective from’ date MUST be provided.** | **Must** | **This may be derived systematically.** |
| UPDDTS-1.1 | Where an object supporting business effective dates is ‘added’ and no ‘business effective from’ date is available, local systems MUST use a default of the current date. | Must |  |
| UPDDTS-1.2 | Suppliers MAY choose not to default the current date in place of a true business effective date, provided the addition of a ‘business effective from’ value is mandated by means of validation. | May |  |
| UPDDTS-1.3 | Where a default ‘business effective from’ date has been substituted locally for a blank date returned by PDS, any such default date MUST NOT be passed back to the PDS in an update as a ‘legitimate’ business effective date without patient approval. | Must | See [SNCDTS-2](#SNCDTS2). |
| **UPDDTS-2** | **The following objects MUST NOT be assigned a ‘business effective to’ date when ‘added’ or ‘altered’ on the PDS:**   * **Patient usual name (“use” = ‘L’)** * **Patient usual address (“use” = ‘H’) (but see note)** * **Primary care information** * **Consent to share** * **Related person usual name (“use” = ‘L’).** | **Must** | **Where a usual address is being changed (e.g. the patient has a new address or the existing value is being corrected) then this requirement applies.**  **However, where a usual address is not being changed but the patient wishes it to be known that their usual address will no longer be valid from a specified date and no replacement is being provided (e.g. because they are moving abroad or do not wish to disclose their new address to the NHS) then it is legitimate to update the existing address with a business effective to date. This will enable the address to be preserved in the current table on PDS as the last known address for the patient.** |
| **UPDDTS-3** | **Both ‘business effective from’ and ‘business effective to’ dates associated with a correspondence address MUST be recorded and included in any update of a correspondence address to PDS.** | **Must** |  |
| **UPDDTS-4** | **Both ‘business effective from’ and ‘business effective to’ dates associated with a temporary address MUST be recorded and included in any update of a temporary address to PDS.** | **Must** |  |
| **UPDDTS-5** | **The following objects MAY be assigned a ‘business effective to’ date when ‘added’ or ‘altered’ on the PDS:**   * **Patient names other than usual name** * **Patient telecoms** * **Related persons** * **Related person address** * **Related person telecoms.** | **May** | **A ‘business effective to’ date applied to an object implies that when that date is reached, the object is no longer valid and there is no superseding value.** |
| **UPDDTS-6** | **With the exception of the type “H” address (Usual address), where an object is to be rendered no longer valid from the current moment (i.e. it is end-dated on the local system with an end date that is not in the future), and no replacement value is being provided, then it MUST be ‘removed’ from PDS.** | **Must** | **Were systems to use the ‘altered’ updateMode to add a ‘business effective to’ of the current date to an existing object on PDS would mean the current table on PDS remains populated with out of date data.**  **By using the ‘removed’ updateMode the object will be correctly placed into history on PDS.**  **The type “H” address is an exception to this because it can be useful to be able to retrieve the last known address for a patient.**  **Note that a type “L” name (Usual name) cannot be removed from PDS in any case, and a business effective to date cannot be provided for it either.**  **Where a user is end-dating an object locally and also providing a replacement value then the ‘altered’ updateMode would normally be used.** |
| **UPDDTS-7** | **Local systems MUST NOT provide any default dates for ‘business effective to’ values except for temporary and correspondence addresses (types “TMP” and “PST”).** | **Must** | **Temporary addresses may be assigned a default period of, for instance, 1 week or 1 month, up to a maximum of 3 months. Similarly for correspondence addresses, up to a maximum of 12 months. Default values may be determined by the local business requirement up to the stated maximum. However temporary and correspondence addresses must be given both ‘business effective from’ and ‘business effective to’ dates.** |
| **UPDDTS-8** | **When updating PDS, ‘business effective from’ dates MUST NOT be set in the future.** | **Must** | **Spine no longer stores future dated data.** |
| **UPDDTS-9** | **Business effective date information that indicates a date range MUST be chronologically consistent, i.e. the ‘business effective from’ date MUST precede the ‘business effective to’ date.** | **Must** | **In HL7 message terms, where both low and high sub-elements of a useablePeriod or validTime or effectiveTime element are present, the start date (low element) must precede the end date (high element).** |
| **UPDADD** | **Address Updates** |  |  |
| **UPDADD-1** | **Local systems MUST be capable of deriving addresses from a PAF tool when performing updates.** | **Must** | **Systems must be able to utilise a PAF tool for address searching.** |
| UPDADD-1.1 | When updating PDS with a PAF tool derived address, the PAF key MUST be included in the update. | Must |  |
| **UPDADD-2** | **Addresses, when ‘added’ or ‘altered’ by local systems, MUST be a maximum of five lines in length and contain the following data, plus postcode:**   * **Line 1: premises ID, house name, e.g. ‘Flat 1’, ‘The Old Schoolhouse’** * **Line 2: house number, dependent thoroughfare name and descriptor (if present), thoroughfare name and descriptor, e.g. ’23 Mill Lane’** * **Line 3: dependent locality, locality (if present) e.g. ‘Boxgrove’** * **Line 4: post town, e.g. ‘Leeds’** * **Line 5: county (if present), e.g. ‘Hampshire’, ‘Hants’** * **Postcode.** | **Must** | **This applies to a related person address as well as to the patient’s addresses.** |
| UPDADD-2.1 | Lines 1 or 2, and line 4 MUST be populated. | Must |  |
| UPDADD-2.2 | Each of address lines 1-5 MUST NOT exceed 35 characters. | Must |  |
| **UPDADD-3** | **The following data MAY be abbreviated when address line length exceeds 35 characters:**   * **Premises ID** * **Thoroughfare** * **County.** | **May** |  |
| **UPDADD-4** | **Where an address line exceeds 35 characters, it MUST be truncated to 35 characters.** | **Must** | **Abbreviation (as per** [**UPDADD-3**](#UPDADD3)**) should be applied prior to truncation where possible.** |
| **UPDADD-5** | **The postcode MUST conform to the PAF format i.e. a single space character must separate the ‘outcode’ and ‘incode’.** | **Must** |  |
| **UPDADD-6** | **Where an address cannot be found in the PAF tool** **or a PAF tool is not supported, systems MUST enable the user to manually populate the address according to the prescribed format in** [**UPDADD-2**](#UPDADD2)**.** | **Must** |  |
| UPDADD-6.1 | When such a vernacular address is being entered, the data input screen MUST be appropriately labelled, to indicate the type of data to be written on each line. | Must | For example:  Line 1: House name  Line 2: Number and road  Line 3: Locality  Line 4: Town |
| UPDADD-6.2 | In the manual manipulation of addresses, county names MUST NOT be entered, i.e. addresses captured must be sent to PDS with a blank 5th line. | Must |  |
| UPDADD-6.3 | Where a vernacular address is updated on to PDS, a PAF key MUST NOT be provided. | Must |  |
| **UPDADD-7** | **Where a PAF tool is supported and an updated PAF database is applied, local systems MUST NOT update locally held address information without also updating the addresses of synchronised records on PDS.** | **Must** |  |
| **UPDADD-8** | **Where a foreign address is added, or a non-specific address, e.g. ‘No Fixed Abode’, local systems MUST provide functionality to add default postcodes, i.e. ‘ZZ99’ type postcodes.** | **Must** |  |
| UPDADD-8.1 | In primary care, surgeries MAY use the practice address as the registered address for patients of no fixed abode. | May | This could be via a system function or a business process. |
| UPDADD-8.2 | Where adding foreign or non-specific addresses, address lines 1 or 2, and address line 4 MUST be populated. | Must |  |
| UPDADD-8.2.1 | The mandatory nature of these fields MUST be reinforced by means of user interface design. | Must |  |
| UPDADD-8.2.2 | For ‘no fixed abode’ addresses, line 1 SHOULD contain ‘No Fixed Abode’, line 4 a post town, e.g. ‘Leeds’. | Should |  |
| UPDADD-8.2.3 | For ‘no fixed abode’ addresses, the postcode field MUST contain the default postcode ‘ZZ99 3VZ’. | Must |  |
| **UPDADD-9** | **Where correspondence address (type “PST”) is supported, local systems SHOULD be able to locally record standard text to describe the address.** | **Should** | **Standard text address descriptions for correspondence addresses can be found in section 6.8.2 of the PDS Integration Guidance document.**  **The local system may instead record a local free-text address description if there is a requirement.**  **Note that locally recorded correspondence address descriptors, whether standard or local free text, must not be provided to PDS in an update as this text is only supported on PDS for temporary addresses.**  **Not applicable to systems with no LPI.** |
| **UPDADD-10** | **Where temporary address (type “TMP”) is supported, local systems MUST be able to record on the PDS standard text to describe the address.** | **Must** | **Standard address descriptors are documented in the PDS Integration Guidance document (section 6.8.2).** |
| UPDADD-10.1 | Local systems MUST NOT update the address descriptor field on PDS with a local free-text description of a temporary address. | Must |  |
| **UPDADD-11** | **Where temporary address is supported, local systems MUST NOT add an additional temporary address where one (or more than one) already exists on PDS.** | **Must** | **The objective is that a maximum of a single current entry exists on PDS. Where at least one temporary address already exists on PDS then systems must not add another one but replace (one of) the existing one(s) when updating PDS. Where multiple instances already exist on PDS it is not expected that systems synchronising with PDS should manage those, but should choose the most appropriate one to maintain (e.g. by examining business effective dates).** |
| **UPDADD-12** | **Where correspondence address is supported, local systems MUST NOT add an additional correspondence address where one (or more than one) already exists on PDS.** | **Must** | **The objective is that a maximum of a single current entry exists on PDS. Where at least one correspondence address already exists on PDS then systems must not add another one but replace (one of) the existing one(s) when updating PDS. Where multiple instances already exist on PDS it is not expected that systems synchronising with PDS should manage those, but should choose the most appropriate one to maintain (e.g. by examining business effective dates).** |
| **UPDGPS** | **GP Practice Update** |  |  |
| **UPDGPS-1** | **Systems other than NHAIS, GP Practice and DSA MUST NOT update primary care information on the PDS.** | **Must** |  |
| UPDGPS-1.1 | Systems other than NHAIS or DSA MUST NOT ‘remove’ primary care information from the PDS. | Must |  |
| UPDGPS-1.2 | Primary care systems MUST ONLY update registered GP practice information as part of GP registration functionality. This information MUST NOT be changed on the PDS for any other purpose. | Must | This means that the GP Practice is only updated on PDS as part of a permanent GP registration. Other types of GP registration, i.e. temporary, emergency and additional GP registrations (for example contraceptive, maternity and child health services) must be local-only registrations on the practice system. |
| **UPDGPS-2** | **Where primary care data is added to the update request, the user interface MUST NOT allow free-text entry of coded data, but provide lookup functionality.** | **Must** |  |
| **UPDGPS-3** | **Where primary care business effective dates are absent in a retrieval from the PDS, or where primary care date information is inconsistent with reference data (NACS or SDS information), and the local system has used locally assigned default dates, any such defaulted dates MUST NOT be used to update PDS as a business effective date, i.e. MUST remain locally only.** | **Must** |  |
| **UPDCST** | **Update of Consent to NHS Care Record Sharing** |  | **UPDCST\* requirements only relate to systems that have the ability to electronically share detailed clinical data across organisational boundaries for purposes *other than* direct clinical communication.**  **Examples of direct clinical communication would be a referral or a GP2GP transfer of patient notes.**  **An example of a purpose other than direct clinical communication would be the data analysis of detailed clinical data by a 3rd party organisation.**  **See Information Governance NHS CRS Consent to Share: Access Rules - NPFIT-FNT-TO-IG-DES-0135 and IG Requirements for ESP and GPSoC Systems - NPFIT-FNT-TO-TIN-0427 for a full description of consent requirements.**  **The definition of detailed clinical data does not include PDS and Summary Care Record (SCR) data.** |
| **UPDCST-1** | **Local systems MUST be capable of recording (i.e. setting) consent to share status on the PDS.** | **Must** |  |
| UPDCST-1.1 | The ability to update consent to share information on the PDS MUST be restricted to appropriate roles in the RBAC database. | Must |  |
| **UPDCST-2** | **Where consent to share information is changed on a patient record and provided to PDS in an update, the date last changed MUST be defaulted to the current date.** | **Must** |  |
| **UPDCST-3** | **Local systems MUST be capable of recording additional comments about consent status locally (consent to share text).** | **Must** |  |
| UPDCST-3.1 | Local systems MUST NOT display consent to share text across legal organisational boundaries, e.g. in the case of a shared database. | Must |  |
| UPDCST-3.2 | Access to local consent to share text MUST be restricted to appropriate roles in the RBAC database. | Must |  |
| UPDCST-3.3 | Where consent to share text is held locally and the status of consent has been changed on PDS to ‘1’ (Express Consent), local systems SHOULD move both the dissenting status and the text to a local historical record or audit trail. | Should |  |
| **UPDDTH** | **Death Updates** |  |  |
| **UPDDTH-1** | **Where there is a legitimate business need to submit death notifications, local systems MUST be capable of recording (i.e. setting) informal death status on the PDS.** | **Must** |  |
| UPDDTH-1.1 | Local systems MUST NOT set formal status for the death notification. | Must | The only exception to this is for a stillborn baby being recorded via the PDS Create Initial Record Request message. |
| UPDDTH-1.2 | The ability to update death status and date/time of death on the PDS MUST be restricted to appropriate roles in the RBAC database. | Must |  |
| **UPDDTH-2** | **Where death data is to be ‘added’ to PDS, the full death date (CCYYMMDD) MUST be provided in the update.** | **Must** |  |
| UPDDTH-2.1 | Time of death MAY also be provided (CCYYMMDDhhmm). | May |  |
| UPDDTH-2.2 | The provision of death data within an update MUST be internally consistent, i.e. the “updateMode” associated with the date/time of death (HL7 person.deceasedTime element) must be identical to the “updateMode” associated with the status of death notification (HL7 deathNotification element). | Must |  |
| **UPDDTH-3** | **[deleted]** |  |  |
| **UPDDTH-4** | **Local systems MUST NOT attempt to un-decease the patient on the PDS, by ‘removing’ a death status once set.** | **Must** | **Such a process should be performed on the local record by the Local Back Office. The NBO must be notified that the patient has been un-deceased locally. The NBO will verify the status of the patient and update the death status on the PDS which may then be re-synchronised locally.**  **See:** [**https://digital.nhs.uk/National-Back-Office**](https://digital.nhs.uk/National-Back-Office)**.** |
| **UPDDTH-5** | **Local systems MUST NOT ‘alter’ the death status recorded on PDS from a ‘2’ (formal) to a ‘1’ (informal).** | **Must** |  |
| **UPDLAN** | **Language Updates** |  |  |
| **UPDLAN-1** | **If the interpreter required indicator is to be updated on PDS then a language defined in the language vocabulary MUST also be included in the update.** | **Must** | **The language vocabulary (the ISO639-1 dataset) can be found in the PDS Data Dictionary section of the PDS Integration Guidance document and in the MIM.** |
| **UPDLAN-2** | **Local systems SHOULD provide the ability to locally add additional, free-text languages for values not contained in the language vocabulary.** | **Should** |  |
| UPDLAN-2.1 | Where a code value for a free-text language is required for the purpose of local storage, the code ‘qa’ MAY be used. | May |  |
| UPDLAN-2.2 | The language code of ‘qa’ (code value used locally for free-text language) MUST NOT be sent to PDS in an update. | Must |  |
| **UPDPHY** | **Pharmacy Data Updates** |  |  |
| **UPDPHY-1** | **Local systems MUST only update the PDS with codes that are for Spine-compliant pharmacies.** | **Must** |  |
| **UPDPHY-2** | **Where pharmacy data is added to the update request, the user interface MUST NOT allow free-text entry of coded data, but provide lookup functionality.** | **Must** |  |
| **UPDPHY-3** | **Where pharmacy details are to be updated on the PDS, local systems MUST only provide a maximum of a single occurrence of each type of pharmacy data, i.e. 1 x ‘P1’ (Nominated pharmacy), 1 x ‘P2’ (Medical appliance), 1 x ‘P3 (Dispensing Doctor).** | **Must** |  |
| UPDPHY-3.1 | Local systems MUST NOT attempt to update PDS with business effective date information for pharmacy data. | Must |  |
| **UPDFLR** | **Update Failure modes** |  |  |
| **UPDFLR-1** | **If the local system has an LPI and the PDS is unavailable, the local system MUST allow demographics to be updated locally.** | **Must** |  |
| UPDFLR-1.1 | If a patient record is amended locally without an update to the PDS because of service unavailability, the failure SHOULD be recorded against the record so as to allow failure-mode processing. | Should | A number of approaches are possible:   * Reset the SCN to trigger a manual re-synchronisation at the next significant event; * Refer to Local Back Office (where functionality should be available to re-synchronise the record); * Implement queueing strategies for updates being sent during periods of service unavailability. |
| **UPDFLR-2** | **If an update fails as a result of a SCN failure, the SCN MUST be reset to force a manual synchronisation at the next significant event.** | **Must** | **SCN failure means the SCN submitted on the update does not match that held on the PDS record.** |
| **UPDFLR-3** | **Update failures MUST be recorded together with any PDS error response.** | **Must** | **This requirement is to ensure that updates to the PDS do not routinely fail due to unexpected validation weaknesses in the local system. Suppliers are encouraged to monitor organisations’ message failure levels to ensure no systemic issues exist.** |
| **UPDRPS** | **Related Person Update** |  | **Suppliers must determine the business value of supporting related persons. It can be complex to develop and for users to maintain. Therefore, there should be a clear business requirement to do so.** |
| **UPDRPS-1** | **If supporting related persons, local systems MUST support the update of related persons not identified by NHS Number.** | **Must** | **This should be the default approach to maintaining related person details. Holding related persons by NHS Number is not the preferred approach for local systems.** |
| **UPDRPS-2** | **When ‘adding’ or ‘altering’ the PDS details of a related person, the following minimum set of identification details MUST be provided:**   * **related person role** * **relationship type** * **contact ranking** * **one and only one usual name (“use” = ‘L’)** * **one and only one usual address (“use” = ‘H’)** * **a business effective from date.** | **Must** |  |
| UPDRPS-2.1 | In addition to those fields listed in UPDRPS-2, when ‘adding’ or ‘altering’ the PDS details of a related person, the following additional details MUST be supported (though not necessarily populated):   * one instance each of telephone numbers with “use” = ‘HP’ and ‘MC’ * language (where not English) and interpreter required indicator * preferred contact method (e.g. letter, telephone, e-mail etc.) and times * preferred written communication format (e.g. large print, Braille, audio) * call centre call-back consent * a next of kin indicator * a copy correspondence indicator * a business effective to date. | Must | When retrieving related person details from PDS there may be some data additional to those listed in this and the previous requirement, namely, other types or sub-types of telecom (e.g. type ‘HP’ e-mail address or type ‘WP’ telephone number). Where such additional telecoms are not supported locally, they must nevertheless be included in any update (i.e. altering) of related person details where they were present in the retrieval. See [UPDGEN-4](#UPDGEN4). |
| **UPDRPS-3** | **Local systems MUST NOT allow a related person to be ‘added’ to a PDS record using related person NHS Number.** | **Must** | **It is possible to retrieve from PDS related persons identified by NHS Number. If an update is required to such a related person it should be done by adding a free text related person and removing the NHS Number identified one (see** [**UPDRPS-4**](#UPDRPS4)**).** |
| **UPDRPS-4** | **Where a related person already identified by an NHS Number is to be altered, the local system MUST ‘remove’ the related person record from PDS and ‘add’ a replacement related person record on PDS without NHS Number.** | **Must** | **The minimum set of details that must be provided for the replacement related person record is specified in** [**UPDRPS-2**](#UPDRPS2)**.** |
| **UPDRPS-5** | **Where data stored on the PDS about a related person is to be ‘altered’, all applicable current data for the changed related person MUST be provided in the update message, NOT just the ‘altered’ data.** | **Must** |  |
| **UPDRPS-6** | **Local systems MUST NOT programmatically alter the sequence of a contact ranking for a related person, i.e. without patient approval.** | **Must** | **Systems may alter rankings of related persons. If, for instance, the related persons have rankings of 2, 3 and 4 these should be altered to 1, 2 and 3.**  **However, the logic should not allow sequence changes without user/patient input.** |
| UPDRPS-6.1 | Local systems MUST ensure that any ‘added’ or altered’ related person contact ranking is unique for that patient, i.e. no two related persons may have the same contact ranking on a given patient record. | Must |  |
| UPDRPS-6.2 | When ‘adding’, ‘altering’ or ‘removing’ any related person record, local systems SHOULD, where appropriate, update all related persons to ensure that the contact ranking begins at 1 and is contiguous. | Should |  |
| **UPDRPS-7** | **When ‘adding’ or ‘altering’ the PDS details of a related person, the following MUST NOT be provided:**   * **any related person name, other than usual name (“use” = ‘L’)** * **temporary or correspondence addresses (“use” = ‘TMP’ or ‘PST’).** | **Must** |  |
| **UPDRPS-8** | **When an invalid NHS Number is detected for a related person record, local systems MUST remove that related person record and prompt the user to add a new related person record using demographic data.** | **Must** | **Invalid NHS Numbers are denoted by error code 22 in a PDS retrieval response.** |
| **UPDRPS-9** | **Local systems MUST NOT attempt to use the ‘altered’ “updateMode” instruction when changing a related person role (‘AGNT’, ‘GUARD’ or ‘PRS’) or type, i.e. a role drawn from the x\_RelatedPerson MIM vocabulary and a type from the PersonRelationshipType MIM vocabulary.** | **Must** | **This may occur, for example, when a ‘partner’ becomes a ‘spouse’ (change in relationship type) or a ‘child’ becomes a ‘guardian’ (change in both role and type).** |
| UPDRPS-9.1 | Where a related person role or type is to change, local systems MUST instead use the ‘removed’ and ‘added’ instructions. | Must | This is possible in a single update message. |
| **UPDRPS-10** | **When using the ‘removed’ “updateMode” for any related person, local systems MUST supply the related person role (from the x\_RelatedPerson MIM vocabulary) along with the PDS Object Identifier and the “updateMode” attribute.** | **Must** |  |

## Local Back Office Requirements

| Reqt. ID | Requirement Text | Rating | Notes |
| --- | --- | --- | --- |
| **LBOGEN** | **Local Back Office General** |  | **See the** [**Local Back Office activity diagram**](#LBOActivityDiagram) **for an outline of processes required to handle duplicate or confusion cases. This may generate further local functionality not described in these requirements.** |
| **LBOGEN-1** | **Local systems MUST provide mechanisms for the pre-emptive identification of duplicates, for example the provision of data quality reports.** | **Must** | **Depending on the LPI rules relating to holding records with unverified or no NHS Number, it may be possible for duplicate records to exist locally.**  **Duplicate records associated by a close demographic data match may also be identified.**  **Functionality to identify potential duplicates is therefore essential.** |
| **LBOGEN-2** | **Local systems MUST be capable of merging 2 records where it has been identified that they are duplicates.** | **Must** |  |
| **LBOGEN-3** | **Local systems MUST provide the facility to unmerge records merged in error back to the original unique patient identifiers.** | **Must** | **Unmerging such records can be an entirely manual process, e.g. requiring skilled database administrators.** |
| **LBOGEN-4** | **Local systems MUST be capable of logically deleting a local record.** | **Must** | **This is required, for example, for processing of invalid records and merging.**  **The intention of logically deleting a record is that these records must not be retrievable in the local system via tracing.** |
| **LBOGEN-5** | **Local systems SHOULD be capable of logically un-deleting a local record.** | **Should** | **In most circumstances this would be a database administrator-type function.** |
| **LBOGEN-6** | **A record that has been deleted MUST be audited together with the user that performed it.** | **Must** |  |
| **LBOSUP** | **Local Back Office Handling of Superseded Records** |  |  |
| **LBOSUP-1** | **Where a record is referred to the LBO requiring a merge as a result of a superseding NHS Number already existing on the local system, the system MUST ensure that the superseding NHS Number becomes the Primary NHS ID of the active record.** | **Must** |  |
| **LBOSUP-2** | **The superseded record on the local database MUST be logically deleted or otherwise rendered inaccessible to normal business users.** | **Must** | **It is important that such records are not capable of being traced in normal business practice.** |
| **LBOINV** | **Local Back Office Handling of Invalid Records** |  |  |
| **LBOINV-1** | **On receipt of an Invalid NHS Number code, if the patient cannot be traced on the PDS using demographic details, then the local system SHOULD allow for the creation of a new record and NHS Number allocation to support the provision of care.** | **Should** | **Invalid NHS Numbers are denoted by error code 22.**  **When an Invalid error code is received in a PDS retrieval response, the likelihood is that a new record has been created with a different NHS Number. The new record needs to be traced using the demographic details.**  **If tracing fails, then a PDS record needs to be allocated.**  **Depending on the business scenario and the data quality requirements of the user organisation, allocation functionality will be required.** |
| LBOINV-1.1 | [deleted] | Must |  |
| LBOINV-1.2 | The allocation process MUST be a function of the Local Back Office and not for front-line use such as an A&E receptionist. | Must | Allocation should only take place when thorough tracing has failed to find the patient. This is best done where there is less pressure to process a patient’s arrival and users are skilled in tracing. |
| **LBOINV-2** | **Local systems SHOULD provide functionality to support the business investigation carried out by the Local Back Office, to include:**   * **Trace the replacement record on the PDS using demographics only** * **Synchronise this replacement record to the LPI** * **View all demographic and clinical data for the invalid record held on the local system** * **Transfer demographic or clinical data from the invalid record to the replacement record.** | **Should** |  |
| LBOINV-2.1 | Local systems MUST provide the ability to merge in their entirety the two records on the LPI, where the business investigation reveals the record to have been invalidated as a duplicate by the National Back Office. | Must |  |
| LBOINV-2.2 | Local systems MUST provide the ability to logically delete in its entirety the invalid record from the LPI, where the business investigation reveals the record to have been invalidated as a confusion by National Back Office. | Must |  |
| **LBOALT** | **NHS Number Allocation** |  | **Suppliers may decide not to support NHS Number allocation.**  **Allocation of PDS records should be restricted to Local Back Office users.**  **Suppliers must ensure user organisations are aware of the patient types for which NHS Number allocation is permissible and for those for which allocation is exempt. See Section 4.5.2.** |
| **LBOALT-1** | **The facility to allocate an NHS Number MUST be possible only after at least one attempt to find the patient using one of the PDS trace options has returned no matching records.** | **Must** | **“No matching records” means either the PDS sent a “No matches” error code and returned no matches, or that the PDS did return one or more matches but the user determined that none of them was the correct record for the patient.** |
| **LBOALT-2** | **Local systems MUST require at least one PDS Advanced Trace Query to be performed before allowing NHS Number Allocation.** | **Must** |  |
| **LBOALT-3** | **The facility to allocate an NHS Number MUST be restricted to appropriate roles in the RBAC database.** | **Must** | **An RBAC example is provided in the PDS Integration Guidance document.** |
| **LBOALT-4** | **The local system MUST set the Previous NHS Contact Indicator in the PDS NHS Number Allocation Request message to ‘1’ (Yes).** | **Must** | **Note that although the MIM does support a value of ‘0’ (No) for the Previous NHS Contact Indicator, experience has shown that business processes within the National Back Office do not differentiate between the two possible values. The safest option therefore is for it to always be set to ‘1’ (Yes).** |
| **LBOALT-5** | **Suppliers MUST perform appropriate local duplicate checks prior to allowing a new registration to be persisted locally and prior to sending the PDS NHS Number Allocation Request message to the PDS.** | **Must** | **The local duplicate check should use a ‘close’ or exact match algorithm analogous to the duplicate checking mechanism on the PDS, e.g. an exact match on:**   * **Full Date of Birth** * **Full First Given Name of Usual Name (type ‘L’)** * **Full Family Name of Usual Name (type ‘L’)** * **Gender** * **Postcode.** |
| **LBOALT-6** | **In the context of GP Practice systems, for new GP registrations, any allocated NHS Number MUST be placed in the GP-Links Acceptance message.** | **Must** |  |
| **LBOALT-7** | **Where the Registering Authority type is NHAIS or GP practice, primary care information MUST be sent in the PDS NHS Number Allocation Request message, unless the allocation is part of a temporary or emergency GP registration.** | **Must** |  |
| **LBOALT-8** | **Where the Registering Authority type is not NHAIS or GP practice, primary care information MUST NOT be sent in the PDS NHS Number Allocation Request message.** | **Must** |  |
| **LBOALT-9** | **As a minimum, the PDS NHS Number Allocation Request message MUST contain the following mandatory fields:**   * **First given and family names of type ‘L’** * **A current UK address of type ‘H’** * **Gender** * **Date of birth.** | **Must** |  |
| **LBOALT-10** | **Newly allocated NHS Numbers MUST be stored in the local database as well as the SCN when returned from the PDS in response to the Allocation request message.** | **Must** |  |
| **LBOALT-11** | **If a PDS NHS Number Allocation Request is rejected by PDS, the failure SHOULD be referred to Local Back Office for further investigation.** | **Should** | **The Local Back Office functionality should include the ability to re-request the NHS Number and to search for a patient if the response has indicated an exact match already exists on Spine.** |

## Birth Notification Requirements

| Reqt. ID | Requirement Text | Rating | Notes |
| --- | --- | --- | --- |
| **BRNGEN** | **Birth Notification General** |  |  |
| **BRNGEN-1** | **Local maternity systems MUST be able to trace on PDS for mother or baby records.** | **Must** |  |
| **BRNGEN-2** | **Prior to the sending of a PDS Create Initial Record Request, local maternity systems MUST enforce a synchronisation of the mother’s record.** | **Must** |  |
| BRNGEN-2.1 | Such synchronisations MAY be for a partial mother’s record, provided that as a minimum the following fields are supported including all component attributes and business effective dates:   * Full usual name (“use” type ‘L’) * Date of birth * Gender * Usual address (“use” type ‘H’) * One temporary address (“use” type ‘TMP’) * Primary care details (GP practice code) * Primary home and mobile telephone numbers (“use” types ‘HP’ and “MC” of sub-type ‘tel:’). | May |  |
| BRNGEN-2.2 | If prior to birth notification, it is determined that the mother’s record is not on the PDS, local systems SHOULD have the ability to allocate an NHS Number for the mother. | Should | This requirement may not always apply. For example, if a maternity system is designed to be used alongside a Spine-compliant PAS and it is ensured that the PAS can provide the allocation functionality and refer the mother to maternity using internal messaging, it would not be necessary for the maternity system to duplicate this functionality.  Where the maternity system is to have allocation functionality, the allocation requirements ([LBOALT](#LBOALT)-\*) need to be supported.  Where it is not possible to allocate an NHS Number for the mother in a timely fashion (e.g. an emergency situation for a mother who is not registered on PDS) then the BNA can be used to register the baby’s birth without a mother’s NHS Number. |
| BRNGEN-2.2.1 | Where a new allocation is required, where a mother has no registered GP, or where a mother is unwilling to divulge this information, systems MUST ensure that the current “No registered GP practice” NACS code is supplied to the PDS in the PDS Create Initial Record Request. | Must | The NACS code to be used is V81997.  If the mother is registered with a GP Practice, all attempts should be made to identify the corresponding practice code. |
| **BRNGEN-3** | **Local maternity systems MUST ensure that NHS Numbers stored on the local database are unique and refer to only one record, whether mother or baby.** | **Must** |  |
| **BRNGEN-4** | **Once a birth notification has been sent and an NHS Number has been successfully issued by the PDS, local systems MUST NOT attempt to request another NHS Number for the same baby.** | **Must** |  |
| **BRNVLD** | **Validation of the Birth Notification** |  |  |
| **BRNVLD-1** | **Local systems MUST be able to record and send to the PDS all mandatory data items in the birth notification dataset.** | **Must** | **See the PDS Create Initial Record Request interaction dataset in the PDS Integration Guidance document for details.** |
| BRNVLD-1.1 | Local systems SHOULD record any initial birth information required in the support of existing, local business and clinical practice, e.g. head circumference. | Should |  |
| **BRNVLD-2** | **Local systems MUST validate data to be used in the birth notification prior to transmission to the PDS in the PDS Create Initial Record Request message, including all the required and conditional fields.** | **Must** |  |
| BRNVLD-2.1 | Local systems MUST NOT allow transmission of invalid birth notification information to the PDS. | Must |  |
| BRNVLD-2.2 | Local systems MUST warn the user if any of the required or conditional fields are absent in the notification, e.g. mother’s NHS Number or mother’s date of birth is absent. | Must |  |
| BRNVLD-2.3 | Where coded or ‘look-up’ data is to be provided, local systems MUST ensure that all reference values are valid and current, e.g. a valid GP practice code. | Must |  |
| BRNVLD-2.3.1 | Where such data is required by the notification, but not available from PDS, e.g. in the case of GP practice details for a mother whose PDS record is sensitive (‘S’ flagged record), the system MUST allow for this information to be manually entered. | Must |  |
| BRNVLD-2.3.2 | Where such data needs to be manually entered, e.g. GP practice details for a mother whose PDS record is sensitive (‘S’ flagged record), the user interface MUST NOT allow free-text entry of coded data, but provide lookup functionality. | Must |  |
| BRNVLD-2.4 | Where baby name information is unknown or not available, local systems MUST provide the following default values:   * Mother’s surname as baby’s surname * First Forename of ‘Baby’ for a singleton * First Forename of ‘Twin One’/’Twin Two’ for twins and as appropriate for multiple births, following the same pattern but substituting the word ‘Twin’ with the words ‘Triplet’, ‘Quadruplet’, ‘Quintuplet’, ‘Sextuplet’, ‘Septuplet’. | Must | There are known to be variations from this in other guidance e.g. NPSA wrist band guidance. |
| BRNVLD-2.4.1 | The entry of such names into the system MUST NOT be free-text. | Must |  |
| BRNVLD-2.4.2 | The first forename SHOULD be space delimited and initially capitalised and transmitted to the PDS in a single, first given name element in the PDS Create Initial Record Request message. | Should |  |
| BRNVLD-2.5 | The system MUST indicate that the unit of measurement for birth weight is grams and verify that the entered birth weight is within absolute limits of 100 - 9999 grams. | Must | Where the birth weight is less than 1000 grams, the value sent in the message must be prefilled with a leading zero. E.g. for 900 grams, the value sent would be 0900. |
| BRNVLD-2.5.1 | The system MUST also verify that the entered birth weight is within normal operating limits of 1000 - 5000 grams and if these are exceeded, display a warning message to the user. | Must |  |
| BRNVLD-2.5.2 | Where a birth weight is not available, the system MUST validate that a default value of 9999 has been submitted, or otherwise provide functionality to supply this value. | Must |  |
| BRNVLD-2.6 | Where a gestation age is not available, the system MUST validate that a default value of 99 has been submitted, or otherwise provide functionality to supply this value. | Must |  |
| **BRNMSG** | **Birth Notification Interactions** |  |  |
| **BRNMSG-1** | **Local systems MUST use the PDS Create Initial Record Request message to send the birth notification to the PDS.** | **Must** |  |
| **BRNMSG-2** | **If a PDS Create Initial Record Request Rejected (Duplicate Found) message is returned, local systems MUST display the returned possible duplicate(s).** | **Must** |  |
| BRNMSG-2.1 | Only the following demographic data MUST be displayed to aid in the identification of duplicate baby registrations:   * Mother’s ID (NHS Number) * Mother’s surname * Mother’s given name(s) [i.e. forename(s)] * Mother’s date of birth * Baby’s address information * Baby’s name * Baby’s date and time of birth * Baby’s gender * Baby’s birth order. | Must |  |
| BRNMSG-2.2 | The system MUST allow the user to select a record returned within the PDS Create Initial Record Request Rejected (Duplicate Found) and store the returned NHS number against the local baby record. | Must |  |
| BRNMSG-2.2.1 | Where a record is selected, if the local system is subsequently capable of updating the baby’s record on PDS, or if it may need to perform subsequent synchronisations, the local system SHOULD also perform a PDS Retrieval to obtain the Serial Change Number, and persist the returned Serial Change Number in its local database. | Should | This requirement allows the data stored in the local system to mirror that where a successful registration is made (as per [BRNMSG-4](#BRNMSG4) / [4.1](#BRNMSG41)) |
| **BRNMSG-3** | **Local systems MUST allow for possible duplicates to be ignored/over-ridden and for a PDS Create Initial Record Request message to be sent with the Ignore Possible Duplicates flag set to ‘true’.** | **Must** | **The Ignore Possible Duplicates flag is carried in the IgnoreDuplicateRecordCriterion HL7 class.**  **See section 5.3.1 of the PDS Integration Guidance document for more details of the PDS Create Initial Record Request message dataset and 5.3.2 for details of duplicate checking carried out by PDS and approaches to recognising the various duplicate responses that can occur.** |
| BRNMSG-3.1 | Local systems SHOULD NOT allow the Ignore Possible Duplicates flag to be set to ‘true’ where the PDS Create Initial Record Request Rejected (Duplicate Found) message indicates an exact match, i.e. where a duplicate registration indicates an exact match on mother’s NHS Number and Birth Order. | Should | The preferred approach would be to recognise that an exact match had been made. See section 5.3.2 of the PDS Integration Guidance document for details.  An alternative approach could be to resend the PDS Create Initial Record Request again with the same data and the Ignore Possible Duplicates flag set. If it fails again with the same response, then the cause of the failures could be deemed to be because an exact match had been made. |
| **BRNMSG-4** | **On receipt of a PDS Registration Request Accepted message, indicating the successful issue of an NHS Number, local systems MUST persist the returned NHS Number to its local database.** | **Must** |  |
| BRNMSG-4.1 | If the local system is subsequently capable of updating the baby’s record on PDS, or if it may need to perform subsequent synchronisations, it MUST also persist the returned Serial Change Number in its local database. | Must |  |
| **BRNMSG-5** | **Use of the PDS Create Initial Record Request MUST NOT be ‘fire-and-forget’, i.e. local systems MUST be capable of processing responses returned from the PDS.** | **Must** | **Responses here refers to all three types of response to the PDS Create Initial Record Request interaction documented in the MIM:**   * **Request failed** * **Request failed - duplicate record(s) found on the PDS;** * **Request successful - no duplicate records found on the PDS.** |
| **BRNMSG-6** | **In the case of birth notifications, and if the local system has an LPI, updates to the PDS (via the PDS Create Initial Record Request) MUST NOT be ‘loosely coupled’.** | **Must** | **Suppliers also need to consider time-out periods to manage failed and delayed messages.** |
| **BRNMSG-7** | **If an Application Acknowledgement is returned, indicating a validation or communications error, i.e. no NHS Number has been issued, local systems MUST alert the user that the transaction has been rejected and display to the user the reason for rejection returned in the message.** | **Must** |  |
| BRNMSG-7.1 | On receipt of such an error message, local systems MUST allow the user to re-request an NHS Number from the PDS after having taken any appropriate action, e.g. correcting data. | Must |  |
| **BRNMSG-8** | **Local systems MUST be capable of handling the return of an error code ‘25’ (Baby Record Inserted, Mother-Baby Link Failed) in a PDS Registration Request Accepted message.** | **Must** | **Typical scenarios which might cause this to occur include:**   * **if the mother's record is marked as sensitive on the PDS** * **if the mother's record on PDS fails validation checks.**   **No action should be taken by the local system if this code is returned from PDS.** |
| **BRNMAN** | **Birth Notification Manual Fall-back Requirements** |  |  |
| **BRNMAN-1** | **Any corrections to birth notification-specific data MUST NOT be sent to the PDS and MUST remain within the local system.** | **Must** | **Examples of birth notification-specific data include: Number of births in confinement, ethnic category.**  **Any corrections to this data required after the NHS Number has been issued will be handled by processes other than this PDS birth notification process. Typically, this will be a manual process. Maternity staff should notify the appropriate Child Health Organisation who will take appropriate action as necessary.**  **Normal PDS update processes may be used for corrections to data commonly editable on the PDS as per the next requirement.** |
| BRNMAN-1.1 | For systems which update PDS, any changes to data which is not birth notification-specific MUST be sent to PDS using the PDS General Update Request message. | Must | Any update must only be performed after the record has been traced and synchronised as documented elsewhere in these requirements. |
| **BRNMAN-2** | **If the PDS is unavailable for birth notifications, Child Health Organisations will use alternative systems to issue NHS Numbers for babies. In these cases, and when informed by the appropriate CHO, local maternity systems SHOULD allow these records to be traced and synchronised.** | **Should** | **See requirement** [**BRNGEN-2**](#BRNGEN2)**.**  **This requirement applies whether a local-only record exists for the baby or not.**  **If the local or associated systems are not integrated with PDS, then the Birth Notification Application (BNA) may be used for this purpose.** |
| BRNMAN-2.1 | The local system MUST allow the local record for the baby to be updated with the retrieved NHS Number. | Must |  |
| **BRNDPY** | **Display, labels, printing and bar-codes** |  |  |
| **BRNDPY-1** | **Where available, the baby’s NHS Number MUST be printed on all documentation related to the baby and mother while admitted for delivery, and for discharge letters and labels.** | **Must** | **The** [**PDSPCP-5.2**](#PDSPCP52) **principle is relevant here and is particularly important in the maternity context.** |
| BRNDPY-1.1 | The NHS Number MUST appear on printed patient-related system outputs automatically, without requiring user intervention/manual entry of the number. | Must |  |
| **BRNDPY-2** | **Local systems MUST also allow documentation without NHS Numbers to be produced to enable normal business to continue, e.g. in the event that the PDS is unavailable.** | **Must** |  |
| BRNDPY-2.1 | If no NHS Number is present, the system MUST warn the user that this is the case, prior to displaying or printing an output where one would normally be present. | Must | This requires a message to be displayed to the user indicating that no NHS Number is held for the baby. |
| BRNDPY-2.1.1 | An appropriate warning MUST also be printed in place of the absent NHS Number on any of such printed output. | Must |  |
| **BRNDPY-3** | **The system MUST enable the user to produce a printed birth notification, which includes all data items in the birth notification dataset, on standard-sized printer paper.** | **Must** | **This printed birth notification can be used as part of a manual fall-back procedure for NHS Number issue, for example where maternity staff notify the appropriate Child Health Organisation who will take appropriate action as necessary.** |
| **BRNDPY-4** | **To guard against incorrect association of NHS Numbers to babies, any labels or printouts produced by the system and associated with a baby MUST include the following information:**   * **Baby’s NHS Number (bar-coded and numeric formats)** * **Baby’s forename and surname (including when default information is used)** * **Baby’s date of birth** * **Baby’s gender** * **Birth order for multiple births in the format 2/3 (see note [1])** * **Mother’s forename and surname** * **Baby’s usual address/postcode (as much as will fit onto the label/printout).** | **Must** | **[1] Where ‘2’ is the birth order and ‘3’ is the number of births in confinement.**  **The detail of this and the subsequent requirement is taken from NPFIT-FNT-TO-DPM-0405 (NHS Numbers for New Born Screening** **Output Based Specification for the Blood Spot Card Label).** |
| **BRNDPY-5** | **In addition to those fields listed above, for the purposes of the blood-spot card for new born-screening, the following fields MUST be printed on the label to be attached to the card:**   * **Baby’s birth weight** * **Baby’s gestation age** * **Baby’s ethnic category** * **Mother’s date of birth** * **Mother’s primary care practice details** * **Birth location organisation name** * **Date printed.** | **Must** |  |
| **BRNRPT** | **Birth Notification Reporting and Audit** |  |  |
| **BRNRPT-1** | **As a minimum, local systems MUST provide the following reports:**   * **All records for babies born between specified dates for which no NHS Number has been recorded** * **A report listing the audit trail between specified dates (see BRNRPT-2).** | **Must** |  |
| **BRNRPT-2** | **Local systems MUST maintain an audit trail of NHS Number issue, including those created manually. As a minimum, the audit trail must record:**   * **Time/date of receipt of NHS Number** * **NHS Number** * **User who created the baby record** * **PDS Create Initial Record Request message contents at time of issue.** | **Must** |  |
| **BRNCHS** | **Child Health System Requirements** |  | **These requirements only pertain to Birth Notification to Child Health by the PDS; other requirements elsewhere govern additional Child Health system functionality.** |
| **BRNCHS-1** | **Spine-compliant Child Health systems MUST be capable of processing systematically the inbound Birth Notification sent to them by the PDS, i.e. MUST NOT rely on manual data entry.** | **Must** |  |
| BRNCHS-1.1 | Child Health systems SHOULD process the Birth Notification automatically upon receipt, updating the local Child Health register with baby registration details. | Should |  |
| BRNCHS-1.1.1 | Where Birth Notifications are processed automatically, users MUST be proactively informed by the system of all notifications received since last log-on. | Must |  |
| BRNCHS-1.1.2 | Ad-hoc reports on Birth Notifications received MUST also be available. See [BRNCHS-8](#BRNCHS8). | Must |  |
| BRNCHS-1.2 | Child Health systems MAY queue the Birth Notifications for manual processing. | May |  |
| **BRNCHS-2** | **The system MUST validate the inbound Birth Notification as detailed in the MIM / PDS Data Dictionary.** | **Must** | **As examples:**   * **All mandatory items are present. Optional items must be treated as such.** * **The format definition for that field. Numeric only fields must only contain numeric data, all fixed length fields are no shorter or longer than the field length definition, variable length field lengths are not exceeded.** * **The status, permissible values and formats specified for each field, e.g. Live/Still-born indicator must be a numeric value from 1 to 4.** |
| BRNCHS-2.1 | Child Health systems MUST NOT process a Birth Notification which fails this validation. | Must |  |
| BRNCHS-2.2 | Child Health systems MUST report validation errors, enabling Child Health operators to take actions to resolve the error with the assistance of the National Back Office and/or suppliers. | Must |  |
| BRNCHS-2.3 | The system MUST NOT reject any record where an optional data item has no value. | Must |  |
| BRNCHS-2.4 | The system MUST detect and report errors in received Birth Notifications without preventing further use of the system or receipt of other Birth Notifications. | Must |  |
| **BRNCHS-3** | **The system MUST support the receipt of a default value for the Mother’s Primary care Senior Partner code: G9999981.** | **MUST** | **A default GP code of G9999981 (meaning ‘No registered GP’) may be supplied for the Senior Partner code value in the Birth Notification where the Practice is valid and current for the patient but SDS holds no associated GP codes for that Practice.** |
| **BRNCHS-4** | **When processing the inbound Birth Notification, Child Health systems MUST use the NHS Number to retrieve the corresponding record from the PDS.** | **Must** |  |
| BRNCHS-4.1 | The Serial Change Number thus retrieved from the PDS SHOULD be stored in the Child Health system local database. | Should | The SCN is used to quickly assess if the local and PDS records are in sync. |
| BRNCHS-4.2 | Where suppliers opt to queue the inbound Birth Notifications for manual processing, local systems MUST check for updated demographics in the retrieval response and where detected, the changed demographics from the PDS MUST be stored in lieu of the demographics in the Birth Notification. | Must |  |
| BRNCHS-4.2.1 | A change in gender SHOULD be processed as per any other demographic change. | Should | Gender is a so called “key-field”, but in the context of Birth Notifications, updates to these fields are relatively common and would have been performed by National Back Office. |
| BRNCHS-4.2.2 | Where a Birth Notification is received and the Live/Still-born indicator for a baby is set to ‘1’ (Live), if the Birth Notification contains no date of death or death status, but either is present in the retrieval response from the PDS, the death status should be accepted, but the system MUST notify users so that the change can be investigated. | Must |  |
| **BRNCHS-5** | **Spine-compliant Child Health systems MUST provide validation, tools and processes to avoid the creation of duplicate records on the local Child Health register.** | **Must** |  |
| BRNCHS-5.1 | The system SHOULD NOT allow two records to be registered with the same NHS Number. | Should | This requirement assumes that the Child Health system only maintains verified NHS numbers i.e. those from Birth Notifications. If a system is capable of recording unverified NHS numbers from other sources, such as other systems, then this requirement isn’t relevant.  The system Functional Specification should make reference to any other sources of NHS numbers from which NHS numbers are obtained (if any) and whether or not they are verified. |
| BRNCHS-5.2 | Where possible duplicates are found, the system MUST report full details of both the pre-existing and the incoming baby records to an administrative function for resolution. | Must | How local systems identify possible duplicates is up to local system behaviour. |
| **BRNCHS-6** | **Spine-compliant Child Health systems MUST support the updating of all Birth Notification data items held locally.** | **Must** |  |
| BRNCHS-6.1 | The system MUST be able to update standard PDS demographics as per established mechanisms. | Must | This implies that the system must have the functionality required for full integration with the PDS. |
| BRNCHS-6.2 | The system SHOULD support the allocation of NHS Numbers to children, referred to the organisation, but not registered with a GP, i.e. non-birth first acceptance. | Should |  |
| **BRNCHS-7** | **Spine-compliant Child Health systems MUST be able to differentiate a Birth Notification which lists the organisation as either a ‘Partner’ or ‘Responsible’ Child Health Organisation, i.e.**   * **Where no ‘Responsible’ organisation is listed, the Partner organisation takes on the care of the child** * **Where the organisation appears in the Birth Notification as the responsible party, it will assume care for the child.** | **Must** |  |
| **BRNCHS-8** | **Spine-compliant Child Health systems MUST provide reports on demand for Child Health department users, namely:**   * **detailed information on each Birth Notification since last user log-in** * **detailed information on each Birth Notification in a user definable period** * **an audit trail, in printed or on-screen format, detailing the contents of the Birth Notification message, and also the date and time that the message was processed.** | **Must** |  |
| **BRNCHS-9** | **The system MUST be able to support the receipt of a default value of V81997 (meaning “No registered GP Practice”) for the Mother’s Primary Care Registration NACS code.** | **Must** |  |

# Appendix A – Data Support

Suppliers are required to describe in the Data Supported tab of the Requirements Traceability Matrix (RTM) which PDS data items they support and synchronise with. Suppliers must also indicate any differences in value ranges and data types held.

The table below replicates the list of PDS data items found in the RTM.

| **Data Group/Item** | | Notes on data group/item.  Update restrictions. |
| --- | --- | --- |
| Patient Identifier | | NHS Number |
| Superseded Patient Identifier | | NHS Number |
| Serial Change Number | |  |
| Person Name | | Family name and first given name are mandatory when adding or altering a name on Spine.  Refer to PDS Integration Guidance document for further guidance. |
|  | L - Usual Name | Removing Usual Name from Spine is not permitted. |
|  | PREFERRED - Preferred name |  |
|  | A - Alias name |  |
|  | PREVIOUS-MAIDEN- Maiden name |  |
|  | PREVIOUS-BIRTH - Birth name |  |
|  | PREVIOUS-BACHELOR - Bachelor name |  |
|  | PREVIOUS-OTHER - Other previous name |  |
| Person Gender | | Removing Person gender from Spine is not permitted. |
| Person Birth Date | | Removing Person birth date from Spine is not permitted.  Where adding or altering Person Birth Date, a full date (CCYYMMDD) must be provided. |
| Person Death Date | | Can only be updated on Spine by persons with the appropriate RBAC.  Removing Person death date from Spine is not permitted.  Once the death notification status is set to ‘formal’, local person death date cannot be further updated by local system.  Local systems cannot update the death notification status with a value of ‘formal’ except for a birth notification to Spine for a stillborn baby.  Where adding or altering Person Death Date, a full date (CCYYMMDD) must be provided. |
| Person Address | |  |
|  | H - Usual address |  |
|  | TMP - Temporary address | Local systems MUST be able to record on the Spine standard text to describe the address as defined in the Spine address descriptor design guidance.  A business effective to date (as well as a business effective from date) must always be provided when adding or altering a temporary address on Spine. |
|  | PST - Correspondence address | A business effective to date (as well as a business effective from date) must always be provided when adding or altering a correspondence address on Spine. |
| Telecommunication Address | |  |
|  | H - A communication address at a home |  |
|  | HP - The primary home, to reach a person after business hours |  |
|  | MC - A telecommunication device that moves and stays with its owner |  |
|  | WP - An office address |  |
|  | HV - A vacation home, to reach a person while on vacation |  |
|  | EC - A contact specifically designated to be used for emergencies |  |
|  | AS - An automated answering machine |  |
|  | PG - A paging device suitable to solicit a callback or to leave a very short message |  |
| Person Confidentiality | | Information sensitivity indicator.  Local systems cannot update sensitive or invalid Spine records. |
| Consent to NHS Care Record Sharing | | Can only be updated on Spine by persons with the appropriate RBAC.  Removing Consent to NHS Care Record Sharing from Spine is not permitted. |
| Call Centre Data | |  |
|  | Shared secret |  |
|  | Call centre call back consent |  |
| Contact Preferences | |  |
|  | Preferred contact method |  |
|  | Preferred contact times |  |
|  | Preferred written communication format | If supported, the preferredWrittenCommunicationFormat options MUST be available to all patients, not just those with visual impairments, i.e. large print, Braille or audio tape |
| Language Communication | | Where being added or altered on to Spine both language and interpreter required indicator must be provided. |
|  | Language |  |
|  | Interpreter required indicator |  |
| Previous NHS Contact | |  |
| Primary Care Registration | | Can only be updated by NHAIS or a GP Practice (or CCG) |
| Pharmacy Data | | Only a single occurrence of each type of Pharmacy Data may be present on Spine.  Business effective dates are not supported with Pharmacy Data and must therefore not be provided. |
|  | P1 - Nominated pharmacy |  |
|  | P2 - Medical appliance |  |
|  | P3 - Dispensing Doctor |  |
| Related Person | |  |
| Baby Tracing Data | | Birth order |
| Place Of Birth | | Town/City, County, Country |