



British Isles Network of Congenital Anomaly Registers

BINOCAR Standard Operating Procedure for Demographic Batch Search (DBS)

Instructions for the Registration and Surveillance of Congenital Anomalies in
England and Wales

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Background

This document describes the process of submitting Congenital Anomaly Register (CAR) data for cleansing via the Health and Social Care Information Centre (HSCIC) Demographics Batch Service (DBS). DBS is a mechanism that allows NHS and other organisations to submit a file of patient information to the NHS Spine for tracing against the Personal Demographics Service (PDS). More information can be found here: <http://www.hscic.gov.uk/demographics/dbs>.

CAR staff may routinely use the PDS Summary Care Record (SCR) to access Spine data when completing or validating NHS numbers and demographic details for individual cases. The DBS provides a facility for bulk data validation.

An N3 connection is required to access the DBS; alternatively a third party (e.g. PHE NCRS) may be willing to undertake the submission/retrieval process.

Technical details and further information about submission and response files can be found in the DBS2 User Guide (embedded).



dbs2ugnew.doc

Purpose of using DBS

Data cleansing using DBS can be undertaken, separately, for all mothers and registerable babies recorded by a CAR i.e. for 1 or 2 persons within each CAR record. DBS may also be used for bulk data extracts, especially those not populated with NHS numbers, BEFORE cases are registered by the CAR.

The purpose of DBS tracing is:

- To complete NHS numbers where missing.
- Where NHS numbers are already complete (within CAR):
 - To confirm that the NHS number is correct,
 - To validate other data items: forename, date of birth, date of death, and status (alive/dead),
 - To complete any missing data items: forename (babies), date of death, and status (alive/dead).

Information Governance

Submitted and returned DBS files contain a large volume of person identifiable data (PID). Data are submitted directly to DBS via a secure N3 connection.

BINOCAR registers collect data under section 251 of the NHS Act 2006. Where a third party undertakes the submission on behalf of the CAR, it must be confirmed that this is appropriate within s251 approval. Data must be transferred securely at all times (e.g. NHS net email to NHS net email, or using NHS Secure File Transfer). The CAR System Level Security Policy should be updated to reflect this routine data exchange.

Timescale/frequency

DBS tracing should be a routine and regular CAR activity and should take place at least once a year. Whenever tracing is undertaken, two files of data (mother and baby) should be submitted in quick succession.

Extracting/preparing CAR data for submission

It is good practice to submit the whole CAR database for cleansing, to ensure that data are complete, and that the status (alive/dead) is checked regularly.

Mother records – extract all CAR cases with a known DOB.

Baby records – extract all registerable births (stillbirths or live births) with a known DOB.

The submission file record format is detailed in Appendix 1.

Notes

- Mandatory items on the submission/extract file are DBS record type (can be auto populated), local PID, date of birth, surname, and either NHS# or postcode.
- The DBS ignores any "previous" information provided in the request file. If you want to trace using this information, it must be copied into the "current" fields and the file resubmitted.
- Tracing is not case sensitive, so text fields can be uppercase, lowercase, or both.
- Multiple records for tracing can be created for a single CARE record. For example if a child has two forenames, a record can be sent with the first forename, and another record sent with the second forename. However, the field [Local PID] will need to be modified.
- To receive a greater response rate, please undertake the following:
 - Ensure address lines 1 - 5 are removed from the submission file. It is highly likely the address lines will not exactly match the data held on PDS.
 - Exclude the GP Practice and Code number from the trace file.
 - Exclude the Date of Death data.
 - OPTIONAL: wildcard the postcode, e.g. LS1
IMPORTANT: It is possible to trace without submitting the postcode, however it is important to be aware that this carries the risk of a false positive match if a transposed or incorrect date of birth is provided.

Submission file format

Data should be extracted/submitted as text files, either CSV or fixed length.

The filenames for submission are restricted to the basic 36 character set of 'A' to 'Z' (both upper and lower case), 0 to 9, hyphen and underscore with period permitted for the separation of filename and suffix.

All files must be submitted with header and footer records, the format for these is recorded in Appendix 2.

Within PHE, files are submitted to HSCIC by NCRS and therefore headers and footers are not required. However the table 2 (below) details the format of file headers and footers which should be added as the first and last record of the submission file.

Response files

Response files (< 235,000 records) are returned by DBS within 24 hours. If data are sent via NCRS, files will be queued with other batches for submission. Files may be held over to the next day, if the number of records for submission (from NCRS) exceeds the limit of 250,000.

Response files provide details of matched and unmatched cases, and include the submitted data as well as the response. All matched and unmatched records should be reviewed. Discrepancies between submitted and response data fields can be identified and explored.

Matches (including type) or otherwise are identified using the response code in the response record. Common response codes are listed in Appendix 4.

Unmatched CAR records

Submitted records with NHS numbers should generally be matched, any that don't need exploring further.

Unmatched CAR files –results and CAR actions/validations (refer to Appendix 4)

Outcomes [response codes]	Definition	Action
No match "Lost matches" [31, 34, 41]	Record submitted with NHS#, no match returned	Check via SCR that NHS# submitted is valid – if valid confirm DOB, names, sex are complete and correct (should resolve in future matching) If NHS# submitted is invalid, search for correct NHS# NB some NHS# may change over time e.g. if children are adopted
No match multiple match [22, 32, 35, 42]	Record submitted with/without NHS, multiple possible matches identified e.g. for same surname and date of birth	Check via SCR that NHS# submitted is valid (as above) If NHS# not submitted source additional data for future submissions, or use wildcard postcards
No match invalid record, insufficient data [80, 81]	Record submitted with invalid or insufficient data	Review format of submitted data Source additional data for future submissions, or use wildcard postcards
No match other [21]	Record submitted, no matches identified Spine records may be restricted.	Complete NHS# using individual search using SCR Resubmit using other known postcodes or other known surnames (e.g. swap mother and baby surnames)

Matched CAR records

For matched cases, DBS can provide:

- NHS numbers where missing from submitted files,
- Confirmation of status (within PDS) as alive or dead,
- Additional/updated person details – current names and addresses/postcodes,
- General Practice data (not recorded by CARs).

Matched records may also identify discrepancies between CAR and PDS data, e.g. different dates of death. CARs can validate these differences, and amend CAR data accordingly. If CAR data are amended to agree with PDS, then discrepancies should not occur in future data submissions. However if CAR data are validated (using an independent source) and not amended, the same discrepancy will be generated in future submissions. It is therefore import to retain details of additional validation and differences within the CAR record, to avoid repeating this exercise.

CARs have extensive experience in dealing with discrepancies with mother and baby names. For mothers, whilst forenames generally remain consistent, surnames change especially around pregnancy. For babies, the initial name recorded within PDS is forename = baby, surname = mother's surname, and then amended shortly afterwards.

Matched CAR files – results and CAR actions/validations (refer to Appendix 4)

Outcomes [response codes]	Definition	Action
Matched case [20] Additional NHS#	Submitted NHS# is blank and returned NHS# is not blank	Update CAR with NHS#
Matched case [30] Confirmed NHS#	Submitted NHS# is complete and matches trace	Compare submitted/returned fields (see below)
Matched case [33, 36, 39,40] Different or missing NHS#	Submitted NHS# is complete but different NHS# matched	Review cases individually using SCR and resolve; record additional NHS# within CAR NB some NHS# may change over time e.g. if children are adopted
Matched case (all) Additional death details	CAR outcome is alive (or DOD is blank) and NSTS dead (or DOD is not blank)	Update CAR with new status and returned data of death
Matched case (all) Additional baby forename details	submitted forename = missing/girl/boy/baby etc. and returned forename = other	Update CAR with new forename
Matched case (all) Different DOB	For mothers: submitted DOB <> returned DOB For babies: submitted DOB <> returned DOB +/- # days	Review cases individually and resolve
Matched case (all) Different sex (baby)	submitted sex <> returned sex	Review cases individually and resolve, NB SCR default is male, SCR sex is not 100% reliable
Other possible – different first names, names exchanged	spellings etc.	To be determined by CAR

Appendix 1 Submission record format

ID	Data fields to submit	Format	Notes Transformations
1	*Record Type	N(2)	set to 10
2	*Local PID	X(20)	CAR case identifier This identifier refers to a CAR record for mother and baby, therefore CARs should add a prefix/suffix (e.g. M, B) if they wish to submit 2 records for the same CAR case.
3	*Date of Birth	N(8)	YYYYMMDD
4	Date of Death	N(8)	YYYYMMDD can be excluded to improve matching
5	[*]Old NHS Number	X(17)	<i>leave empty</i>
6	[*]New NHS Number	N(10)	NHS number
7	*Surname	X(35)	
8	Previous/Alternative Surname	X(35)	also use baby surname for mother or vice versa
9	* First Forename	X(35)	Forename – strip out any additional names e.g. middle or twin 1, etc. If unknown/un-named (e.g. girl, boy) update to *
10	Alternative Forename	X(35)	<i>leave blank</i>
11	Sex	X(1)	0 Not known 1 male 2 female 9 not specified <i>remember to set to 2 for mothers</i>
12-16	Address Line 1-5	X(35)	Leave blank, as highly likely the address lines will not exactly match the data held on PDS.
17	[*] Postcode	X(8)	OPTIONAL: wildcard the postcode, e.g. LS1
18-22	Previous Address Line 1-5	X(35)	<i>leave blank</i>
23	Previous Postcode	X(8)	<i>leave blank</i>
24	Registered GP	X(8)	<i>leave blank</i>
25	Registered GP Practice	X(6)	<i>leave blank</i>

Key: * = Mandatory
[*] = Either NHS Number or Postcode must be supplied

IMPORTANT: It is possible to trace without submitting the postcode, however it is important to be aware that this carries the risk of a false positive match if a transposed or incorrect date of birth is provided.

Appendix 2 Submission record header and footer format

Field	Header	Footer
Record type N(2)	00	99
File type N(1)	0 – request	1 -response
File version N(3)	001 001 signals no address & GP data to be returned 101 signals return of extra trace data (person address & registered GP) 201 signals return of extra data (address & GP) and additional Response Codes [new for Phase 2b]	001
File format N(1)	0	0
Requesting Organisation Code X(14)	3 digit	3 digit
Tracing Service Code X(14)		
File preparation X(14)	HHMMSSYYYYMMDD	HHMMSSYYYYMMDD
File sequence number N(8)	Number of the batch sent by the Organisation	Number of the batch sent by the Organisation
Number of Request records N(6)	Number of trace request records between header and trailer	Number of trace request records between header and trailer

Appendix 3 DBS Tracing Protocols

NHS Number Confirmation (Names/Date of Birth)

The DBS traces the records using the following rules for each record:

1. If the NHS Number is present, a cross-check is performed. This checks that the NHS Number and all elements of the date of birth provided match a record on the Spine. If they do, the patient's demographics are returned. Optionally, surname and forename can be included in the match by including them in the input file. If the cross-check fails, the system moves to the next step.
2. If the NHS Number is not present or the cross-check fails, an alphanumeric trace is performed. At a minimum, surname, given name, gender and date of birth must be provided. This searches both current and historical information held on the Spine. Wildcard searching is not performed in this case.

Cross Check Trace

A cross-check is considered valid if the date of birth in the request exactly matches the PDS current date of birth (to YYYYMMDD resolution).

If that check fails, the NHS Number is considered to be verified if the following data in the request matches the PDS current data:

- Two out of three parts of date of birth (a single 'part' being YYYY, MM or DD).
- First three characters of the family name.
- Initial of the given name.

Name parameters are matched against all current names for a patient. If 3 characters are not available for the surname, or forename is not supplied, the NHS Number is considered to be not verified.

Simple Person Tracing

The alphanumeric trace searches for an exact match against both current and historic data using the following rules:

- Name parameters are compared against all names, regardless of type.
- Postcode is compared against all postcodes. The full code is used. Note that there must only be a single space in the middle of the postcode.
- The search is case insensitive.
- White space and punctuation characters are significant, i.e. they must match with those provided.

The best way to use this trace is to provide the minimum information necessary to get an exact match but no more. A minimum trace would be patient name, gender and date of birth. Due to the way addresses are recorded throughout the NHS, it is very difficult to get an exact match on address lines or registered GP/practice. For this reason, it is not recommended that these are provided in the file.

Appendix 4 Common response codes

Resp Code	NHS# Supplied in Request?	Trace Results (Abbreviated Descriptions)	Data Returned	Comment
20	N	Single exact match	Traced details	
21	N	No match	Nothing	Single non-exact match Single match but Record Set restricted Single non-exact match but Record Set restricted
22	N	Multiple match	Nothing	
30	Y	NHS number found & verified	Traced details	If person is "Opted out", no person details will be returned
31	Y	NHS number not found & no match	Nothing	NHS number not found but single non-exact match
32	Y	NHS number not found & multiple match	Nothing	
33	Y	NHS number not found but single exact match	Traced details with different NHS number	
34	Y	NHS number found & not verified & no match	Nothing	NHS number found & partial match
35	Y	NHS number found & not verified & multiple match	Nothing	
36	Y	NHS number found & not verified & single exact match	Traced details with different NHS Number	
39	Y	NHS number found & not verified & Single exact match with no NHS number	Traced details	Inclusion of temporary NHS numbers to be returned on this code
40	Y	NHS number not valid but replacement traced & verified	Traced details and replacement NHS number	If NHS number has been superseded and had been verified
41	Y	NHS number not valid & no replacement traced	Nothing	NHS number not valid but replacement traced & partially verified
42	Y	NHS number not valid & multiple match traced	Nothing	
57	Y	NHS number not found but single exact match found has no NHS number	Traced details	
80	N/A	Invalid record type in request	Nothing	
81	N/A	Insufficient data to perform search	Nothing	