



NHS CENTRAL REGISTER

(The General Register Office and NHS Central Register are both part of the Office for National Statistics)

Migration Analysis Cleansing Service (MACS)

Customer Information V8

Change History

date	Version	Changes
Jan 2005	1	NNTS Original Draft for discussion
Feb 2005	2	NNTS Customer Copy
May/June 2006	3	MACS Re-launch Draft for discussion with NHS CfH
July 2006	4	Amended Version 3 incorporating NHS CfH comments
12 th July 2006	5	Amended Version 4 incorporating NHS CfH and NHSCR comments
4 th October 2006	6	Removed instruction on spacing of postcode. Amendment to NHSmail address & addition to service of Scottish & N.Ireland postcodes
15 th January 2008	7	Change of Contact Information. Encryption and Password advice. Removed IQAP reference
11/02/2008	8	Change of Email Addresses

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1. Introduction

The **Migration Analysis Cleansing Service (MACS)**, formerly the NHS Number Tracing Service (NNTS), is a service offered by the NHS Central Register (NHSCR) to NHS Organisations to aid them in tracing NHS numbers for their patients in preparation for PDS. NHSCR data is held on the Central Health Register Inquiry System (CHRIS) which holds some 60 million person entries and exists to assist Primary Care Trusts in the transfer of primary care medical records within the General Practitioner (GP) network.

CHRIS holds details of all patients that were registered with a GP on 1st January 1991. New entries are added to the database for babies born in England or Wales and for immigrants born outside of England & Wales. CHRIS is routinely updated as patient data changes.

CHRIS was used to populate the NHS Strategic Tracing Service (NSTS) and continues to update and ensure the data quality of NSTS.

CHRIS holds historic data not held on NSTS, and is therefore a useful tracing service to use when preparing for migration

The following data items are held for each patient:

- New NHS number
- Old NHS number (where appropriate)
- Surname – current and previous values
- Forename(s) – current and previous values
- Date of birth – current and previous values
- Health Authority/Primary Care Trust and date of registration – current and previous values
- Exit details, if the patient is no longer receiving NHS care
- Date of death

Files submitted by Trusts are automatically run against CHRIS using a Matching Algorithm (details available from MACS) and each matched record is updated with the current details. The match rate will obviously depend on the quality of the data supplied.

2. The Service

- Your data will be batch matched against the CHRIS database and dispatched within three working days of receipt. (For details of the MACS tracing algorithm please contact the MACS team)
- Comprehensive data analysis reports will be provided separately. This includes a MS Access Report detailing invalid data and possible duplicate or triplicate records; and an email report detailing traced and non-traced figures.
- A separate MS Excel file of all records considered invalid to batch matching will be provided for your appraisal.
- A manual tracing evaluation service. By manually tracing a small selection of records which have not batch traced, the MACS team will evaluate the potential for a Trust to utilize the on-line NSTS system for operator matching. (For details of MACS manual tracing guide please contact the MACS team)
- From November 2006 the service will include tracing for those records with Northern Ireland and Scottish postcodes.
- Tailored advice on how to improve data quality and match rates.
- Support and guidance provided to our customers via email HSCIC.MACS@nhs.net or telephone 0151 471 4328

The Migration Analysis Cleansing Service is available, without charge, to approved Trusts and can be arranged by contacting the MACS Team.

3. Mandatory Data Requirements

- Record Type
- Local patient ID

For a trace to be carried out, the following data items **must** be supplied for each record:

- **A Valid Date of birth***
- **A Valid Surname ***
(Examples of invalids include 'Unknown' and blank fields)
- **A Valid First forename***
(Examples of invalids include 'Baby' 'Twin' 'Male')
- **A Valid Postcode***
Remember, users of NSTS Batch can request the population and return of Postcodes by ticking a box on their submission form (TS2)

***See paragraph nine for the definition of Valid**

Should **any** of these data items be **invalid or not supplied, no positive trace can be returned.**

4. Confidentiality

Confidentiality and security of data is guaranteed. NHSCR staff are governed by the Official Secrets Act and the service is also covered by the existing ONS registration under the Data Protection Act.

5. Application for the Migration Analysis Cleansing Service

This service is available, **at any time before migration,** to Trusts as agreed with NHS Connecting for Health.

A "Data Protection Assurance" form has been completed by the IQAP Senior Project Manager on behalf of NHS Connecting for Health, as a blanket assurance for all Trusts involved in this exercise.

Trusts must arrange submission of files with the MACS team. Files then can be submitted as below.

A MACS request form must be completed and sent with each request. See Appendix A (NTR).

6. Input/Output Media

Input files should be submitted by secure email (NHSMail) or on compact discs (CDs). Each file should contain no more than 25,000 records. However there is no limit to the number of files which can be submitted. For further details please contact:

E-mail: HSCIC.MACS@nhs.net

☎ 0151 471 4328

6.1 Email (NHSMAIL)

The preferred method for submission of files is secure email; the NHSMAIL is a secure method and does not require a secondary encryption.

The input data should be sent on as many Emails as necessary, however each Email may contain several files. The input file format must be as described in 7.1. A return receipt should be requested. If it is not correctly formatted you will be contacted and a replacement file will be requested. Each Email must be labelled consistently with the details on the Appendix A (NTR) form.

The output file will be returned by secure Email(s).

You can sign up for the NHSMAIL service at this website.

<http://www.connectingforhealth.nhs.uk/systemsandservices/nhsmail>

6.2 Compact Disc (CD)

The input data should be sent on as many CDs as necessary, however each CD may contain several files. The input file format must be as described in 7.1. If it is not correctly formatted you will be contacted and a replacement file will be requested. Each CD must be labelled consistently with the details on the Appendix A (NTR) form and encrypted using 256 bit encryption with password protection. The password should be at least 12 characters long Please see Customer Hints and Tips for further information. CDs not using the correct level of encryption will be treated as unencrypted and destroyed. The password should be sent separately by email to HSCIC.MACS@nhs.net

The CD(s) should be sent to the address shown on Appendix A (NTR).

The output file will be encrypted and returned on CD(s). The de-encryption password(s) will be sent separately by e-mail together with the file statistics.

7. Input File Format

The input data must be in NSTS fixed width field format. The file should contain data only, with no header or trailer records.

7.1 Batch Trace Request Records

Field	Format	Values	Comments
* Record Type	N(2)	10	Currently, record not processed if type not equal to 10. Denotes Trace Request, with details only returned for single matches.
* Local PID	X(20)		End User's Person Identifier – not part of trace data
* Date of Birth	N(8)	YYYYMMDD	Must be a valid Date of Birth
Date of Death	N(8)	YYYYMMDD	

Field	Format	Values	Comments
Old NHS Number	X(17)		
New NHS Number	N(10)		
* Surname	X(35)		Must be a valid Surname
Previous/Alternative Surname	X(35)		
* First Forename	X(35)		Must be a valid Forename
Alternative Forename	X(35)		
Sex	X(1)	0,1,2,9	Not known, male, female, not specified
Address Line 1	X(35)		
Address Line 2	X(35)		
Address Line 3	X(35)		
Address Line 4	X(35)		
Address Line 5	X(35)		
*Postcode	X(8)		If you cannot provide the whole postcode you may still get a match with the stem or first part of the postcode eg PR8
Previous Address Line 1	X(35)		
Previous Address Line 2	X(35)		
Previous Address Line 3	X(35)		
Previous Address Line 4	X(35)		
Previous Address Line 5	X(35)		
Previous Postcode	X(8)		
Registered GP	X(8)		A Person's registered GP (National code)
Registered GP Practice	X(6)		
Previous Registered GP	X(8)		
Previous Registered GP Practice	X(6)		

* = Mandatory

8. Output File Format

Output files will be named 'NTnnn.out' and discs will be individually labelled with each filename. The output file will be in NSTS fixed width field format, and will contain data only with no header or trailer records. The output file is a series of Trace Responses in two parts:

- The main record containing all the data supplied in the request record, together with a trace outcome indicator. The main record is returned in all cases.
- A 'tail', which is returned only when there is a single match.

8.1 Main Trace Response Record

Field	Format	Values	Comments
* Response Type	N(2)	20, 21, 22, 24, 26 30, 31, 32, 33, 34, 35, 36, 39 40, 41, 42, 44, 50, 53, 54, 57 80	Indicates the type of Trace Response (see below)
* Local PID	X(20)		As provided in the request. End User's Person Identifier - not part of trace data
No of Multiple Matches	N(3)		The default is set to 0
Trace Result new NHS Number	N(10)		New NHS Number provided by MACS
Date of Birth	N(8)	YYYYMMDD	As provided in the request
Date of Death	N(8)	YYYYMMDD	As provided in the request
Old NHS Number	X(17)		As provided in the request
New NHS Number	N(10)		As provided in the request
Surname	X(35)		As provided in the request
Previous/Alternative Surname	X(35)		As provided in the request
Forename	X(35)		As provided in the request
Previous/Alternative Forename	X(35)		As provided in the request
Sex	X(1)	0,1,2,9	As provided in the request
Address Line 1	X(35)		As provided in the request
Address Line 2	X(35)		As provided in the request
Address Line 3	X(35)		As provided in the request
Address Line 4	X(35)		As provided in the request
Address Line 5	X(35)		As provided in the request

Field	Format	Values	Comments
Postcode	X(8)		As provided in the request
Previous Address Line 1	X(35)		As provided in the request
Previous Address Line 2	X(35)		As provided in the request
Previous Address Line 3	X(35)		As provided in the request
Previous Address Line 4	X(35)		As provided in the request
Previous Address Line 5	X(35)		As provided in the request
Previous Postcode	X(8)		As provided in the request
Registered GP	X(8)		As provided in the request
Registered GP Practice	X(6)		As provided in the request
Previous Registered GP	X(8)		As provided in the request
Previous Registered GP Practice	X(6)		As provided in the request

* = Mandatory

8.2 Additional Trace Response Information Tail

Field	Format	Values	Comments
Returned Date Of Birth	N(8)	yyyymmdd	
Date field last modified	N(8)	yyyymmdd	The date when the preceding field was last updated
Returned current Central Register posting	N(3)	Valid Organisation Code, X (Exit) or D (Dead)	Either an Organisation Code (Q Code), a Health Authority cipher (being phased out) or an 'exit' cipher (includes 'dead')
Date field last modified	N(8)	yyyymmdd	The date when the preceding field was last updated
Return date of current posting (or death, if dead)	N(8)	yyyymmdd	
Date field last modified	N(8)	yyyymmdd	The date when the preceding field was last updated
Returned surname	AN(35)		
Date field last modified	N(8)	yyyymmdd	The date when the preceding field was last updated
Returned first forename	AN(35)		
Date field last modified	N(8)	yyyymmdd	The date when the preceding field was last updated
Returned alternative or previous surname	AN(35)		
Date field last modified	N(8)	yyyymmdd	The date when the preceding field was last updated

Field	Format	Values	Comments
Returned other forename(s)	AN(35)		Other forename(s) and/or initials
Date field last modified	N(8)	yyyymmdd	The date when the preceding field was last updated
Returned sex	N(1)	0, 1, 2, 9	
Date field last modified	N(8)	yyyymmdd	Not held on CHRIS
Returned address line 1	AN(35)	The PAF address and post code, if held, otherwise the Vernacular address	Not held on CHRIS
Date field last modified	N(8)	yyyymmdd	Not held on CHRIS
Returned address line 2	AN(35)		Not held on CHRIS
Date field last modified	N(8)	yyyymmdd	Not held on CHRIS
Returned address line 3	AN(35)		Not held on CHRIS
Date field last modified	N(8)	yyyymmdd	Not held on CHRIS
Returned address line 4	AN(35)		Not held on CHRIS
Date field last modified	N(8)	yyyymmdd	Not held on CHRIS
Returned address line 5	AN(35)		Not held on CHRIS
Date field last modified	N(8)	yyyymmdd	Not held on CHRIS
Returned postcode	AN(8)		Not held on CHRIS
Date field last modified	N(8)	yyyymmdd	Not held on CHRIS
Returned current registered GP	AN(8)	Valid GP codes	Not held on CHRIS
Date field last modified	N(8)	yyyymmdd	Not held on CHRIS
Returned current registered GP practice	AN(6)	Valid GP practice codes	Not held on CHRIS
Date field last modified	N(8)	yyyymmdd	Not held on CHRIS

8.3 Person Tracing Response Codes

The following table lists the possible Response Codes returned by Batch Tracing.

Response Code	NHS Number Supplied?	Trace Results	Data Returned (in addition to Response Code & input data)
20	N	Single exact match found	Traced details
21	N	No match found	Nothing
22	N	Multiple match found	Nothing
24	N	Single match found on supplied details, but match outside of User's area (Record Set Restriction applied)	Nothing

Response Code	NHS Number Supplied?	Trace Results	Data Returned (in addition to Response Code & input data)
30	Y	Verification - NHS Number found; person details match	Traced details
31	Y	NHS Number not found; no match on supplied person details	Nothing
32	Y	NHS Number not found; multiple match on supplied person details	Nothing
33	Y	NHS Number not found; single exact match found on supplied person details	Traced details with different NHS Number
34	Y	NHS Number found but details do not match; no match found on supplied person details	Nothing
35	Y	NHS Number found but details do not match; multiple match on supplied person details	Nothing
36	Y	NHS Number found but details do not match; single exact match on supplied person details	Traced details with different NHS Number
40	Y	NHS Number no longer valid (non-unique); single exact match found on supplied person details	Traced details and replacement NHS Number
41	Y	NHS Number no longer valid (non-unique); no match found on supplied person details	Nothing
42	Y	NHS Number no longer valid (non-unique); multiple match found on supplied person details	Nothing
44	Y	NHS Number no longer valid (non-unique); single exact match found on supplied person details; match outside of User's area (Record Set Restriction applied)	Nothing
50	Y	Verification - NHS Number found; person details match; match outside of User's area (Record Set Restriction applied)	Nothing
53	Y	NHS Number not found; single exact match found on supplied person details; match outside of User's area (Record Set Restriction applied)	Nothing
54	Y	NHS Number found but details do not match; single exact match on supplied person details; match outside of User's area (Record Set Restriction applied)	Nothing
80	N/A	Request record has invalid record type	Nothing

If you have any queries about the Migration Analysis Cleansing Service not covered by this document please contact:

E-mail: HSCIC.MACS@nhs.net ☎ 0151 471 4328

9. Customer Hints And Tips

Maintain Your Data Quality: Three things to remember when collating files for the MACS Team

1, FORENAMES & SURNAMES MUST BE VALID ✓

You will not get a match with:

Unknown
Baby
Infant
Twin
Male
Female
Boy
Girl
An initial
A blank field

2, POSTCODES MUST BE VALID ✓

You will not get a match with:

Postcodes that begin ZZ
A blank field

Even if you do not have the full postcode you may still be able to get a match if you provide us with the stem e.g. PR8

3, DATE OF BIRTH MUST BE VALID ✓

Dates of birth must be set out as YYYYMMDD

*Please note that patients who were born before 1880 will not be on the Central Register.

4, Password Protection

Passwords should be at least 12 characters long and should not be alphabetic or numeric series.

Strings of Identical letters or numbers should not be used. Common phrases should not be used.

A Pass-phrase, with certain letters changed to numbers is preferred such as :-
(1azy_fat_cat5_sleep_0n_the_mat).

Appendix A – Migration Analysis Cleansing Service Request Form

1. This form must be sent each time a new job is submitted. Please include name, address, phone number and email address (if applicable).

To:

From:

Migration Analysis Cleansing Service
Room A102
Office for National Statistics
Smedley Hydro
Trafalgar Road
Southport
PR8 2HH

E-mail: HSCIC.MACS@nhs.net

Media* E.g. floppy disc/CD	Filename	Number of Records	Customer Reference (optional)	ONS Reference (for NHSCR use only)
(1)				
(2)				
(3)				
(4)				
(5)				
(6)				

*** If the file(s) is password protected please email the password to:**

HSCIC.MACS@nhs.net

Signed _____ Date _____