

SAMPLING HANDBOOK FOR THE NHS EMERGENCY DEPARTMENT SURVEY 2008

THE ACUTE SURVEYS CO-ORDINATION CENTRE



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Adherence to the procedures outlined in this document

It is not permissible to deviate from the agreed protocol as set out in this guidance manual, for example, by offering financial inducements or lottery prizes to respondents. Similarly, we do not recommend translation of questionnaires into other languages. More guidance on how to reach ethnic minority groups can be found in Section 8 of the main guidance manual. The terms of the ethical approval do not permit these types of alteration. Furthermore, such alterations might mean that the comparability of the survey would be compromised, and such results may not be acceptable for computation of the relevant measures within the Annual Health Check for that trust. If trusts want to make any adjustments to the method or materials set out in this guidance, they will need to check with the Co-ordination Centre that the proposed alteration would not compromise comparability.

Updates

Before you start work on your survey, check that you have the latest version of this document, as there might be some small amendments from time to time (the date of the last update is on the front page). In the very unlikely event that there are any major changes, we will e-mail all trust contacts and contractors directly to inform them of the change.

This document is available from the Co-ordination Centre website at:

www.NHSSurveys.org

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1 About this handbook

This handbook is produced by the Acute Surveys Co-ordination Centre, on behalf of the Healthcare Commission.

This handbook is comprised of excerpts from the *Guidance Manual for the NHS Emergency Department Survey 2008* and is intended to assist in the sampling for the survey. This abridged handbook is aimed at those carrying out the sampling for, but not directly coordinating or managing, the Emergency Department survey at each trust. Those who are co-ordinating the survey for the trust are strongly recommended to read the full guidance manual, with special attention to Section 3 entitled "What's new for 2008?"

2 What's new for 2008?

Sampling month for 2008: Trusts can choose to sample from January **or** February **or** March 2008. Trusts should select the month most reflective of their normal performance. Please note for the Emergency Survey, trusts need to take a **random sample** of 850 patients from an age-sorted list. Please see section 4 – Compiling a list of patients.

Free text comments: For the 2008 Emergency Department survey, the patients' written free text comments should also be submitted to the Co-ordination Centre in an anonymised format. This is discussed further in Section 17.3 of the main guidance manual.

Data protection guidance: There has been some revision of the guidelines on data protection, specifically those relating to sending patient details to contractors. This should further clarify the security settings that are required. If analysis by subgroup is carried out, the results for any group consisting of fewer than **30 respondents** should be suppressed. These are discussed in further detail in Section 3 – Data protection and confidentiality.

NHS Statistic Tracing Service (NSTS): There is additional security information provided by NSTS on batch tracing (appendix 3) and password/phrase guidance for batch encryption to AES 256-bit strength (appendix 4). This new guidance is also available as separate files on the NHS Surveys website under the 'Guidance' category of the 'Emergency Department Survey 2008' section of the website.

Weekly submissions: Weekly submissions of response rates (outcomes) and helpline monitoring information will be requested for each trust taking part in the 2008 Emergency Department survey. We will be using this data to generate weekly adjusted response rate data for the Healthcare Commission. This is discussed further in Section 12 of the main guidance manual.

Page limit: A limit has been set on the maximum number of pages that can comprise the questionnaire booklet. This limit is set to 12 sides of A4 ie pages 1-12.

Patient record number: The patient record number is vital for the survey process in that it allows sample and response information to be matched in a manner that isolates the patients' names from their reporting of hospital experience. Information about the minimum font size and location, and what action to take if this number is removed from questionnaires, has been added to section 16.4 – Sending out questionnaires of the main guidance manual.

Current inpatients: Trusts are instructed to exclude current inpatients from the sample when generated. This should be the only time current inpatients are excluded from the survey process. When checks for deceased patients are carried out immediately prior to each mailing, do not check for, or exclude, current inpatients at these times.

Ethnic category: Ethnic category as defined by the NHS Dictionary maintained by Connecting for Health should now be used instead of ethnic group. Ethnic category is a 17 item alphabetical code that will replace the 6 item code previously used in patient surveys. The code "Z" ("not stated") should be used when a person had been asked for their ethnic category and had declined either because of refusal or genuine inability to choose. A blank or full-stop should still be used to indicate where ethnic category is "not known" i.e. where the patient had not been asked or the patient was not in a condition to be asked, eg unconscious. Further information can be found in section 4.6 – Create the sample file.

Embargo on results: Trust-level findings for the Emergency Department survey 2008 should not be released outside of the hospital/trust until the national results are published by the Healthcare Commission. Please continue to use the results from your in-house survey teams or approved contractor to improve services, but wait until the survey results for all trusts are published by the Healthcare Commission before promoting your results in any way (either on your website, in press releases or any other external publicity) to the local community and media. You will receive, along with communications staff in your trust, advance notice of the publication date and will have time to prepare for your local announcements once the embargo is lifted.

3 Data protection and confidentiality

When carrying out your survey, you will need to ensure that you comply with the Data Protection Act 1998, and ensure that all responses are kept confidential. You will also need to comply with the NHS Code of Practice on Confidentiality (2003), which incorporates the Caldicott principles¹. It is your legal responsibility to ensure that you meet any guarantees of anonymity or confidentiality made in covering letters and on the questionnaire form. It will also be necessary to establish appropriate contractual arrangements with any contractors (see section 5.2 of the main guidance manual). Your trust's Caldicott guardian and legal advisors will be able to advise you on these matters.

Guidelines on the use and security of the data collected have been agreed by the Healthcare Commission and the co-ordination centres for the national NHS staff and patient survey programmes. These guidelines will help to ensure that data are handled in a manner most in keeping with the spirit of the Data Protection Act 1998 and the Market Research Society's *Guidelines for social research* (2005). They have implications for approved contractors and for NHS trusts conducting surveys in-house.

Their website below has further information:

<http://www.dh.gov.uk/PolicyAndGuidance/InformationPolicy/PatientConfidentialityAndCaldicottGuardians/fs/en>

Information about the Data Protection Act 1998 can be found at the [ICO – Information Commissioner's Office](http://www.ico.gov.uk) (<http://www.ico.gov.uk>)

Further guidance can be found in the Market Research Society document at http://www.mrs.org.uk/standards/downloads/revise/legal/data_protection_social.pdf

3.1 Statements of compliance with data protection

In-house surveys

Each NHS trust has a Caldicott Guardian responsible for overseeing proper use of patient data. If you are conducting the survey in-house then, before drawing the sample, you must submit a formal declaration (see Appendix 1), signed by the Caldicott Guardian and survey lead(s) for the trust, to the Co-ordination Centre. This declaration will certify that data shall only be displayed, reported,

¹ Each NHS trust has a Caldicott Guardian who is responsible for overseeing proper use of patient data. They have to ensure that any use of patient data conforms to the following principles:

- **Principle 1** - Individuals, Departments and organisations must justify the purpose(s) for which information is required
- **Principle 2** - Don't use patient-identifiable information unless it is absolutely necessary
- **Principle 3** – Use the minimum necessary patient-identifiable information
- **Principle 4** - Access to patient-identifiable information should be on a strict need-to-know basis
- **Principle 5** – Everyone should be aware of their responsibilities
- **Principle 6** - Understand and comply with the law

You should take particular care to ensure that your use of patient data in carrying out the survey, complies with these 6 principles. In particular, you should be aware of the flows of patient data, and the issues which these present.

The Caldicott guidance and principles were incorporated into the NHS code of practice on confidentiality.

or disseminated in compliance with the new guidelines (see Section 6.7 of guidance manual). Templates for these declarations are available on the website containing the survey guidance (www.NHSSurveys.org). You must wait for confirmation of receipt from the Co-ordination centre before you draw your sample.

If the Caldicott Guardian is unable to make such a declaration, then the trust must use an approved contractor to ensure that appropriate standards of confidentiality data protection are maintained.

Approved contractors

The framework agreement between the approved contractors and the Healthcare Commission contains clauses stating that the approved contractor will comply with the Data Protection Act so no declaration is required if a trust appoints a contractor from the approved list.

3.2 Patients' names and addresses

In order to comply with the Data Protection Act 1998 and common law duty of confidence, NHS trusts should not release the names, addresses or any other personal details of patients to anyone who is not employed by the trust, unless consent has been obtained from each patient. This includes releasing names and addresses for the purpose of mailing survey questionnaires to patients. The honorary contract (see Section 6.5 of guidance manual) allows approved contractor staff to view this information without infringing the Data Protection Act 1998. Please note that under the data protection guidelines for patient surveys, the following principles **must** be followed:

- Trusts/contractors must undertake to keep their products up to date to ensure that security is effective and must strictly observe the following guidance. The requirements that dictate the guidelines include the Data Protection Act 1998, the Health and Social Care Act (Community Health and Standards) Act 2003, the NHS confidentiality code of practice 2003¹ (which incorporates the Caldicott principles) and the Commission's own code of practice on confidential personal information²
- Personal data such as names and addresses must be sent by trusts to contractors securely, either by post or over the Internet using an encrypted session
- **By post:** Trusts should send the personal data to their contractor in the form of an encrypted data file. We strongly recommend that the **256-bit AES** (Advanced Encryption Standard) encryption algorithm should be used for this purpose – see below for further information on this. The password should be verbally given to a named individual at the contractor. **Passwords should never be written on CD-ROMs or diskettes or otherwise included with encrypted material sent through the post.** The encrypted database should be saved onto a CD-ROM or diskette, place it in a single sealed envelope or other container, annotated "Addressee only", and this should be sent to the contractor by Royal Mail Special Delivery or through a courier service approved by the Healthcare Commission: personal data should **not** be sent by recorded delivery. This procedure for sending data is in accordance with the Commission's policy for sharing RESTRICTED information as set out in its handbook for staff, "Handling information at the Healthcare Commission"³

¹ http://www.dh.gov.uk/prod_consum_dh/idcplg?IdcService=GET_FILE&dID=9722&Rendition=Web

² <http://www.healthcarecommission.org.uk/db/documents/04012832.pdf>

³ <http://www.healthcarecommission.org.uk/db/documents/04012828.pdf>

- **Over the Internet:** An encrypted session based on the Transport Layer Security (TLS) or Secure Sockets Layer (SSL) protocol (for example as with HTTPS or SFTP) must be used. A key size of 256 bits or greater should be used. This is to ensure a high level of security, to protect against any accidental or intentional interception during the transfer of patients' details. Approved contractors should be able to provide guidance on the use of an encrypted session to Trusts
- As the owners of the data, the method for transferring patient samples is ultimately the Trust's decision because the Trust remains legally responsible for the security and processing of the information it shares. The Healthcare Commission strongly recommends the two methods described above. Trusts wishing to send information by encrypted email will need to seek their own specialist advice. Guidance on best practice in encryption is available from NHS Connecting for Health¹.

Remember: if the data contains patient names and addresses, this can only be sent to the contractor by encrypted CD-ROM or diskette, or over the internet via a Healthcare Commission approved encrypted method.

3.3 Encryption of personal data

Any patient identifiable information sent between trusts and contractors should be in an encrypted format with password protection to help ensure good standards of information security. Many different encryption algorithms exist and not all of these are suitable, so both the Coordination Centre and the Healthcare Commission very strongly recommend the use of the **256-bit AES** (Advanced Encryption Standard) algorithm. There are several software tools that can be used to encrypt data in this way, the most commonly available of these being WinZip® (v9 and above)².

3.4 Confidentiality and contractor responsibilities

Two common methods are practised by trusts, and advised by the Healthcare Commission, when working with approved contractors:

The contractor delivers pre-packed serial-numbered envelopes containing questionnaires, covering letters and FREEPOST envelopes to the trust. The trust then attaches number-matched address labels to the envelopes and sends them out to patients. Completed questionnaires can then be returned to the contractor and, by checking the record numbers on returned questionnaires, they can inform the trust which patients need to be sent reminders. This process is described in more detail in Section 16 of the main guidance manual.

Alternatively, with the agreement of the trust's Caldicott Guardian, you may set up a written agreement between the trust and the external contractor. The Healthcare Commission has developed a set of contracts for trusts and approved contractors carrying out the survey to avoid the need for each trust to develop its own arrangements. The honorary contract allows the trust to transfer patient data in a way that does not compromise patient confidentiality. It is strongly recommended that these documents are reviewed by each trust and approved contractor to ensure they are satisfied with them, and to amend where required.

¹ http://www.connectingforhealth.nhs.uk/igsecurity/gpg/gpg/NPFIT-FNT-TO-IG-GPG-0004.01%20GPG_%20%20NHS%20Cryptographic%20Algorithms.pdf – this document is only accessible from NHSnet.

² <http://www.winzip.com/>

3.5 Model contract

A model contract¹ has been drawn up by the Healthcare Commission (see section 5.2 of the main guidance manual). This is an agreement between the approved contractor and the trust contracting them. By signing it, the approved contractor is obliged to keep the information confidential at all times, and to comply with the Data Protection Act 1998. It provides the trust with some recourse if any breach of the Data Protection Act were to occur, as a result of the actions of the approved contractor. The model contract also ensures that approved contractor staff members sign and abide by the honorary contract. The honorary contract is set up between the trust and those members of the approved contractor staff who will have access to patients' information. The honorary contract describes how patients' personal data will be sent to the approved contractor, and how the data can be used. It also ensures that only those members of staff named in the contract will have access to the data.

The model and honorary contracts are available under the Emergency Department survey section of the website (www.NHSSurveys.org).

3.6 Patient anonymity

In-house surveys

It is important to ensure that any claims you make about patient anonymity are accurate; and you are obliged by law to honour any statements that you do make. In most cases where a survey is carried out in-house, it is not accurate to tell patients that their responses will be anonymous. The person who receives the completed questionnaires is usually able to match these responses to patient names and addresses.

Approved contractors

Patient anonymity can be achieved if there is a clear separation between the information seen by an approved contractor and the information held by the trust. Patients' names and addresses will be seen by trust staff when generating the sample, while contractor staff will usually possess both patient details and patient responses. As long as the response data supplied to trusts do not include patient record numbers or any other detail that allows individuals to be identified or linked, it can reasonably be claimed, with regard to the trust and trust staff, that patients' responses are anonymous.

3.7 Patient confidentiality

It is essential that any patient survey is conducted in such a way that patient confidentiality is respected and given a high priority. The covering letters that accompany the mailed questionnaires inform patients that their name and address will never be linked to their responses. Furthermore, patients' responses must not be presented to anyone in a way that allows individuals to be identified. For example, if a patient is known to have stayed on a particular ward, and his or her year of birth, sex and ethnic category are known from their survey responses, it might be possible to use this information to identify them. It would be unlawful to provide staff who may

¹ The model contract is available on the NHSSurveys website at: <http://www.nhssurveys.org/surveys/326>

have had contact with respondents any information that would allow these respondents to be identified. The following recommendations are made:

Trust level

- 1) The raw data set should not be provided to any staff at the trust other than the Caldicott Guardian and survey leads recorded on the declaration of compliance (see Section 6.1 of main guidance manual)
- 2) Additional data analysts may be added later by a second submission of the declaration of compliance to the Co-ordination Centre (see Appendix 2). Additional data analysts cannot view the raw data until approval has been received from the Co-ordination Centre.
- 3) If data are to be presented to trust staff who have not signed the declaration using the declaration of compliance, only the aggregated totals for each question should be provided. If analysis by subgroup is carried out, the results for any group consisting of fewer than **30 respondents** should be suppressed (replaced by a dash). The data should be presented as in the following example. In this case, responses for the 'Mixed' and 'Asian' ethnic categories are suppressed (though the subgroup totals are shown):

Ethnic category	Q13. Did the doctors and nurses listen to what you had to say?			
	Yes, definitely	Yes, to some extent	No	Total responses
	%	%	%	n
White	71	10	19	261
Mixed	-		-	18
Asian	-		-	28
Black	69	13	18	52
Chinese or other	81	15	4	36

- 4) Do not present response information (including comments) in a form that allows an individual patient to be identified by the group receiving the information. For example, if you are presenting the results of a small number of patients, make sure that it will not be possible for the reader/audience to identify individual patients from their responses, and pay particular attention to the patients' free text comments in this context.

The electronic file containing the patients' names and addresses should be stored securely (ie password protected). Access to the file should be given only to those individuals who have signed the declaration of compliance.

Approved contractor

- 1) Approved contractors must not provide raw data to the trust as a matter of course.
- 2) If the trust has a particular need for the raw data from the survey from the approved contractor, the contractor may provide an abridged version of this dataset to the trust upon request, providing that the steps below are undertaken first:
 - a. The contractor must delete the two variables pertaining to ethnicity (both sample and response variables)
 - b. The contractor must band year of birth into four age groups (16-35, 36-50, 51-65, 65+). This process should be repeated separately for both sample and response variables. The original year of birth variables (eg those specifying an exact year rather than age group) must then be deleted
 - c. The date of attendance at the Emergency Department must be removed

- d. The contractor must band the time of attendance at the Emergency Department into time periods of *at least* four hours (e.g. 09:00-12:59, 13:00-16:59, 17:00-20:59, 21:00-00:59, 01:00-04:59, 05:00-08:59). If there are fewer than 30 respondents in a time period, then the length of time must be increased. The original time of attendance variable must then be deleted.
- e. Any additional information specific to the survey that can be used to identify individual patients must also be removed.
- f. Verbatim comments that could lead to any staff identifying respondents must be removed, eg those mentioning patient, staff, ward, or unit names¹.
- g. Receive confirmation from the trust that they have destroyed the names and addresses of the sampled patients, otherwise they will be able to identify individual patients by matching up the patient record number/serial numbers on the name and address list to those in the raw data file.

These steps **MUST** be followed before supplying raw data to trusts. This is to prevent the disclosure of a patients' identity by specific demographic factors. Different arrangements govern the supply of raw data to the co-ordination centres. The arrangements are described in full in Section 17 of the guidance manual. The response data will be anonymous when passed to the Co-ordination Centre and Healthcare Commission, and published and archived results will not identify patients.

If data are to be presented to trust staff, only the aggregated totals for each question should be provided. If analysis by subgroup is carried out, the results for any group consisting of fewer than **30 respondents** should be suppressed. The data should be presented as in the following example. In this case responses for the 'Mixed' and 'Asian' ethnic categories are suppressed (though sub-group totals are shown):

Ethnic category	Q13. Did the doctors and nurses listen to what you had to say?			
	Yes, definitely	Yes, to some extent	No	Total responses
	%	%	%	n
White	71	10	19	261
Mixed	-		-	18
Asian	-		-	28
Black	69	13	18	52
Chinese or other	81	15	4	36

Furthermore, do not present response information (including comments) in a form that allows an individual patient to be identified by the group receiving the information. For example, if you are presenting the results of a small number of patients, make sure that it will not be possible for the reader/audience to identify individual patients from their responses, and pay particular attention to the patients' free text comments in this context.

¹ Please be aware that there are exemptions allowing disclosure, such as the prevention of crime exemption which **might** allow disclosure of free text describing criminal matters actual or threatened. Neither the Healthcare Commission nor the Co-ordination Centre can offer legal advice on these matters; the contractor or trust must seek its own independent legal advice before disclosing patients' comments to trusts.

The electronic file containing the patients' names and addresses should be stored securely (ie password protected). Access to the file should be given only to those individuals who have signed honorary contracts.

4 Compiling a list of patients

This section explains how to draw a sample of patients. This task will need to be carried out by a member of staff at the NHS Trust. In hospital trusts, the sample will normally be drawn from the Patient Administration System (PAS). Prior to sending out questionnaires, the list will also have to be checked by the NHS Strategic Tracing Service (NSTS) to identify deceased patients.

Please follow the instructions below carefully and allocate sufficient work time to check the sample with NSTS before the first mailing and within the trust prior to each mailing.

We strongly advise that you read all of this section BEFORE you start to compile your patient list.

4.1 Compile a full list of patient attendances in 1 month

- 1) Select the month of Emergency Department attendances that your survey will cover. This should be January **OR** February **OR** March 2008.

Note:

If you decide to sample attendances in **March 2008**, we strongly recommend that you wait until the week commencing 14th April **BEFORE** you draw your sample to avoid having to remove a large number of patients from your sample because they are current inpatients (i.e. patients who were admitted to hospital following their attendance at the Emergency Department).

- 2) Compile a full list of **all patient attendances** at all Emergency Departments (A&E /Casualty) at **all sites** in your trust during one month.
- 3) This is a list of **attendances/visits**, rather than a list of patients, so some patients will appear in the list more than once, but that does not matter at this stage.

The information you obtain about each patient will be used both for administering the survey and for sending to the tracing service to check for deceased patients. It saves time and effort if all the information is gathered at the same time.

The list should **include**:

ALL eligible adult patients, who have attended an Emergency Department(s) within the trust for the chosen 'sampling month' (i.e. January or February or March 2008)

The list should **exclude**:

- **deceased** patients
- children or young persons aged **under 16 years** at the date of their attendance at the Emergency Department
- Any attendances **at Minor Injuries Units or Walk-in Centres**
- Any patients who were admitted to hospital via **Medical or Surgical Admissions Units** and therefore have not visited the Emergency Department
- Any patients who are known to be **current inpatients**
- Planned attendances at **outpatient clinics which are run within the Emergency Department** (such as fracture clinics)
- Patients **without a UK postal address** (but do not exclude if addresses are incomplete but useable e.g. no postcode)

Data fields to include in the list of attendances

You will need to keep the list in an electronic file in a programme such as Microsoft Excel or Access. The list should contain the following information:

- Patient Record Number¹
- Title (Mr, Mrs, Ms, etc.)
- Initials (or First name)
- Surname
- Address Fields²
- Postcode
- Year of birth
- Gender
- Ethnic category³
- Date of arrival at the Emergency Department
- Time of arrival at the and Emergency Department⁴
- Survey unit – e.g. hospital site⁵ – [**Optional**]
- PCT of Residence - should be coded using the **first three** characters of the PCT character codes (maintained by the National Administrative Codes Service).
- Any other details required by the NHS Strategic Tracing Service (NSTS). Wherever possible, this should include the NHS number⁶

¹ This field will be a series of sequential numbers (for example, 1001 through to 1850). The patient record number will be included on address labels and on questionnaires. Later, when questionnaires are returned (whether completed or returned undelivered), you (or the approved survey contractor) will be able to use these numbers to monitor which patients have returned their questionnaires and to identify any non-responders, who will need to be sent reminders.

² The patient address should be held as separate fields (e.g. street, area, town, county, postcode). This should be consistent with the address format required by the NSTS.

³ It is acknowledged that patient records might not always contain complete data on patients' ethnic category. However, this field should be included wherever possible. This data is required in order to evaluate non-response from different ethnic categories. This is in keeping with the aims of the Healthcare Commission and Department of Health to be more responsive to all ethnic groups and provide services that take account of their individual requirements.

⁴ The time of attendance should be in 24-hour format; HH:MM (e.g. 09:25)

⁵ This is optional, but it might be useful information if you later want to compare different Emergency Departments within the trust. However, you should discuss this fully with the approved survey contractor, who will advise on the minimum sample size required for such comparisons.

⁶ The NHS number can give more accurate matching, especially if addresses are incomplete. It is advisable to liaise with the registered NSTS batch trace user (if this is not the same person who creates the sample list) to ensure that all the required fields are included in the list of patients (see Section 4.4 for more details on using the NSTS).

4.2 Taking a sample of patients to send to the tracing service

It is likely that your full list will include thousands of attendances, but you will need to send questionnaires to only 850 patients.

Note: You are aiming for a **response rate of at least 50%** (but many trusts will achieve a much higher response rate than that), which means that you should have about 425 completed questionnaires if you send questionnaires to 850 patients. You will be able to maximise your response rate by following this guidance carefully. It is **not** acceptable to try to boost the number of responses you receive by sending out questionnaires to a larger number of patients. The Co-ordination Centre will only be able to accept responses from the 850 patients in your list that have been correctly sampled. (See Section 10.11 for the accepted options for increasing your sample size)

The first step is to take a random sample of patients to send to the NSTS (National Strategic Tracing Service). It is likely that some of your patients will have died, so it is advisable to select an initial sample of at least 900 patients, which will later be reduced to 850. The procedure for doing this is as follows:

1. Put the list of **all** eligible attendances in your chosen month (i.e. January, February OR March 2008) into an electronic file in a programme that allows sorting by columns (for example, Microsoft Excel or Access).
2. Sort the list by patients' **surnames**, and then by **year of birth** (N.B. Ensure that you select all columns before sorting in Excel, otherwise the patient details will get mixed up). Sorting should ensure that all attendances by the same patients come next to each other in the list.
3. Count the total number of attendances in the chosen month.
4. Calculate the sampling interval you will need to extract 900 patients from the total number of attendances, in order to select your pre-tracing sample of 900 patients. (See example below.)

Example

Number of Emergency Department attendances at your trust in one month = 26,500

Sampling interval (i) = $26,500 \div 900 = 29.4$

5. Round **DOWN** your interval to the nearest whole number to give you a value which we will call i (in this example, i would be **29**.)
6. Create a new data column in your patient file (call this column '**interval**'). Fill this column with a repeating series of numbers, starting with 1 in the first row and then numbering each record consecutively through to **29**, then starting again at 1 through to 29, and so on until you get to the bottom of the list. (Remember to use your own value of i .)
7. Choose a random number, between 1 and the value of i (29). Let's assume the random number is **14** in this example.

8. The sample will be all those records with a value of **14** in the 'interval' column (remember to use your own random number). Delete all records with values that are **not equal to 14**.

If you are using Excel, it might be easiest to sort the data by the new column 'interval' and then delete all the rows that **do not** have **14** in the interval column. (N.B. Ensure that you select all the columns before sorting in Excel, otherwise the patient details will get mixed up).

9. This will give you a list of patients consisting of every i^{th} record from the original list.¹ This should be **at least** 900 records. Save this sample into a new file (keeping the initial sample list in another file, in case you need to return to it later).

Note: You may have more than 900 records left after following this sampling procedure. This does not matter at this stage; please send all remaining records to the tracing service (NSTS). After your file is returned from NSTS, you will need to follow the instructions in section 10.5 to delete a **random selection** of records from the file to reduce it to 850 records.

4.3 Checks carried out by the trust

Once you have compiled your list of approximately 900 patients, you should carry out the following checks before you send the list to the NSTS to carry out a further check for deceased patients.

- **Duplications.** You should check your list to make sure patients' names do not appear more than once, and you should remove any duplicated names.²
- **Current inpatients.** Check that none of the patients are known to be current inpatients in your trust (or elsewhere, if possible)
- **Patient ages.** Check that all patients are aged 16 or over at the time of their attendance at the Emergency Department
- **Postal addresses.** Exclude any addresses that are outside the UK
- **Incomplete information.** Check for any records with incomplete information on key fields (such as surname and address) and remove those patients. However, do not exclude anyone simply because you do not have a postcode for them. Only remove a patient if there is insufficient name or address information for the questionnaire to have a reasonable chance of being delivered. The more cases that are removed at this stage, the poorer the sample coverage and the greater the danger of bias
- **Deceased patients.** Check hospital records do not have a record of a patient's death from a subsequent attendance or visit to hospital

¹ An advantage of using this sampling approach is that the age distributions of selected patients are representative of patients seen over the sampling period.

² This sampling procedure minimises the chances that patients will be duplicated in your final list. That is, in the above example, a patient could only be selected twice if they had 29 or more attendances to the Emergency Department in 1 month. However, if your trust has particularly small numbers of attendances, you are more likely to have some duplicated patients.

Checks for deceased patients

One of the most reliable and up-to-date sources of information on patient deaths is your own trust's records. **It is essential that you check that your trust has no record of a patient selected for the survey having died at your trust.** Relatives are likely to be particularly upset if they receive a questionnaire or reminder from the trust where their relative died. Clearly, patients may also have died at home or while under the care of another trust, so you still need to check with the tracing service (NSTS) as well.

The methodology for this survey requires three stages of checks for deceased patients before the first mailing is sent out. The checks are carried out sequentially by:

- 1) the trust
- 2) NSTS
- 3) again by the trust (for patients who may have died in hospital after submission of the sample to NSTS).

You are also advised to repeat this check before the second and third mailings, and to ensure that approved contractors are advised immediately if any patients in the sample die during the survey period.

4.4 Submit the patient list to the NHS Strategic Tracing Service (NSTS)

Before sending out the questionnaires, the list of patients should be checked for any deceased patients by the NHS Strategic Tracing Service (NSTS). NSTS will return your sample file with deceased patients clearly identified.

Please be aware that **only** NSTS registered organisations can submit files. If your organisation is not registered to use NSTS, or if you are unsure of your organisation's status, please contact the NSTS Service Management Team via nsts.servicemgmt@nhs.net **before** sending any data.

Data submitted for tracing to NSTS must be in the correct format and must be submitted using the correct process.

Please allow up to 5 days when submitting data via portable media such as floppy discs or CD ROMs.

Security

The security of data is of paramount importance so please review these documents on data encryption **before** sending anything to NSTS:

- Batch Trace Advice (in Appendix 3 & available on www.nhssurveys.org)
- Password Guidance (in Appendix 4 & available on www.nhssurveys.org)

Failure to follow this guidance will result in your submission being destroyed and a security incident being raised.

Format

To avoid any delay, please ensure that your list (trace file) is in the correct format for NSTS.

Summary 'briefing' information on this is at:

http://www.connectingforhealth.nhs.uk/systemsandservices/nsts/docs/brief_batch_trace.pdf

The TS2 form which must be submitted with each batch is at:

<http://www.connectingforhealth.nhs.uk/systemsandservices/nsts/docs>

Additionally, your organisation's registered NSTS batch trace user should be familiar with all aspects of NSTS batch tracing. NSTS can advise you who this is if necessary.

Note

Please be aware that tracing services are not foolproof and even after your patient list has been checked for deaths, some patients may die in the period between running the check and the questionnaire being delivered. You may find that some recently deceased patients remain in your sample. You need to be prepared for this. Special sensitivity is required when dealing with telephone calls from bereaved relatives.

4.5 When the patient file is returned from the NSTS

The file returned from NSTS can be used to identify any patients that have died and therefore need to be deleted from the sample file. This will reduce the numbers in your sample list slightly.

You should not exclude patients just because it was not possible for the NSTS to match them on their records. If you did this, you would bias the sample.

If you have more than 850 patients remaining on your list

When your patient list comes back from NSTS, and you have removed all deceased patients, there may still be more than 850 patients in the list. You will need to delete a **random selection** of records from the file to reduce it to 850 records. To do this:

1. Calculate how many patients you need to remove by subtracting 850 from the number in your list. For example, if your list has 872 patients, you will need to remove 22 patients.
2. Calculate your sampling interval. In this example, it would be:

$$872/22 = 39.6$$

3. Note that an important difference between this random sampling and the previous procedure you used to select the original sample of 900 is that, at this stage, you are now selecting patients to exclude, rather than to include.
4. Now **ROUND UP** your sampling interval to the nearest whole number, to give you a value which we will call *j*. (In this example *j* would be 40.)

5. Create a new data column in your patient file (call this column 'interval'). Fill this column with a repeating series of numbers, starting with 1 in the first row and then numbering each record consecutively through to 40, then starting again at 1 through to 40, and so on until you get to the bottom of the list. (Remember to use your own value of j.)
6. Choose a random number, between 1 and the value of j (40). Let's assume the random number is 23 in this example.
7. The patients that will be excluded from the sample will be all those records with a value of 23 in the 'interval' column (remember to use your own random number).
8. Delete all records with values that are equal to 23. If you are using Excel, it might be easiest to sort the data by the new column 'interval' and then delete all the rows with 23 in the interval column. (N.B. Ensure that you select all the columns before sorting in Excel, otherwise the patient details will get mixed up).
9. This will give you a list of 850 patients. Save this as the patient survey sample.

Note: You may have slightly more than 850 records left after following the instructions above. If you have between 850 and 855 records, then please keep them all in the sample.

However, if you have more than 855 records remaining, please contact the Co-ordination Centre on **01865 208127** for advice on how to reduce your sample.

If you have fewer than 850 patients remaining on your list

If your patient list has fewer than 850 patients after deceased patients have been removed, you **MUST** contact the Co-ordination Centre on 01865 208127 or email emergency.data@pickereurope.ac.uk

4.6 Create the sample file

An example of the spreadsheet you should complete has been included below. This can be downloaded from our site (<http://www.nhssurveys.org/categories.asp?parent=272>) and is entitled “*Sample construction spreadsheet*”. The column headings will match the validated spreadsheet produced by the Co-ordination Centre for final submission of data and so it will be advantageous for you to use this spreadsheet.

This file has three purposes:

- 1) It will be used to keep a record of which patients have not returned questionnaires so that reminders can be sent to them.
- 2) It will be used to generate weekly response rates for your trust that must be forwarded to the Co-ordination Centre every Thursday from the 24th April 2008 until the closing date of the survey.
- 3) The anonymous data in this file (ie all the data **except** patient name and address information) will form part of the file that you will submit to the Co-ordination Centre when the survey is completed.

Table 1 – Sample Excel file of patient details

<i>Patient record number</i>	<i>Title</i>	<i>Initials</i>	<i>Surname</i>	<i>Address1</i>	<i>Address5</i>	<i>Postcode</i>	<i>Year of birth</i>	<i>Gender</i>	<i>Ethnic category</i>	<i>Day of attendance</i>	<i>Month of attendance</i>	<i>Year of attendance</i>	<i>Time of attendance</i>	<i>PCT of Residence</i>	<i>Day of questionnaire being received</i>	<i>Month of questionnaire being received</i>	<i>Year of questionnaire being received</i>	<i>Outcome</i>	<i>Comments</i>
1001	Mrs	AM	Abbot			AB1 1YZ	1934	2	A	5	3	2008	10:30	5LS				3	Informed that patient had died
1002	Mr	EC	Ahmed			AB2 6XZ	1970	1	J	20	3	2008	13.45	5LT	04	05	2008	1	
1849	Ms	K	Yoo			AB4 7MX	1950	2	R	17	3	2008	11.10	5LS					
1850	Ms	F	Young			AB9 5ZX	1946	2	A	14	3	2008	23.55	5GT	16	06	2008	1	

Important note about table 1

The headings of Table 1 are in three different colours:

Bold black headings: these columns contain information on patients' names, addresses and comments that may allow them to be identified. This information should be deleted from all files sent to the Co-ordination Centre

Red italic headings: these columns should be completed during the sampling phase and submitted to the Co-ordination Centre prior to mailing for final inspection (see Section 0) and at the conclusion of the survey

Green italic headings: these columns should be completed when the patient responds to the survey, either by returning a completed questionnaire, or the trust has been notified that the patient will not be participating (patient deceased, moved address, too ill, or called to opt out).

The following information is compiled using hospital records:

- Patient Record Number¹
- Title (Mr, Mrs, Ms, etc.)
- Initials (or First name)
- Surname
- Address Fields ²
- Postcode

Note

The **Patient Record Number, Title, Initials, Surname, Address** fields and **Postcode** are used for printing out address labels. You (or your contractor) can use the mail merge function in a word processing package for this purpose.

- The **Year of Birth** should be included in the form of NNNN.
- **Gender** should be coded as 1 = male and 2 = female.
- **Ethnic Category** coding has changed for the 2008 Emergency Department survey. The ethnicity of a person is specified by that person, and should be coded using the 17 item alphabetical coding specified by NHS Connecting for Health³. The codes are as follows:

¹ This field will be a series of sequential numbers (for example, 1001 through to 1850). The patient record number will be included on address labels and on questionnaires. Later, when questionnaires are returned (whether completed or returned undelivered), you (or the Approved Survey Contractor) will be able to use these numbers to monitor which patients have returned their questionnaires and to identify any non-responders, who will need to be sent reminders.

² The address should be held as separate fields (eg street, area, town, and county), consistent with the address format required by the NSTS.

³ These codes can be found in the NHS Data Dictionary provided by Connecting for Health on the following website:

http://www.datadictionary.nhs.uk/data_dictionary/attributes/e/enh/ethnic_category_code_de.asp?shownav=1

National Codes:**White**

- A British
- B Irish
- C Any other White background

Mixed

- D White and Black Caribbean
- E White and Black African
- F White and Asian
- G Any other mixed background

Asian or Asian British

- H Indian
- J Pakistani
- K Bangladeshi
- L Any other Asian background

Black or Black British

- M Caribbean
- N African
- P Any other Black background

Other Ethnic Groups

- R Chinese
- S Any other ethnic group

- Z Not stated

It is acknowledged that patient records might not always contain complete data on patients' ethnic category. However, this field should be included wherever possible. This data is required in order to evaluate non-response from different ethnic categories. This is in keeping with the aims of the Healthcare commission and Department of Health to be more responsive to all ethnic groups and provide services that take account of their individual requirements.

- **Day** of the month of attendance (1 or 2 digits; eg 7 or 26)*
- **Month** of attendance (1 or 2 digits; eg 02 or 3) *
- **Year** of attendance (4 digits; eg 2008) *
- **Time** of attendance (4 digits in 24-hour format; HH:MM e.g. 09:25, 23:15)
- **PCT of Residence** should be coded using the **first three** characters of the PCT character codes (maintained by the National Administrative Codes Service). They provide postcode files which link postcodes to the PCTs

Additional information should also be entered on this spreadsheet. The details of this information are discussed below:

- 1) **Patient record number.** This field will be a series of consecutive whole numbers (for example, 1001 through to 1850). This number is unique for each patient. It can be seen in the example that the numbers are in ascending order, starting at 1001 at the top of the list, through to 1850 at the bottom. The patient record number will be included on address labels and on questionnaires. Later, when questionnaires are returned (whether completed or not), you (or

* Date fields must be supplied in separate columns (eg date, month, and year).

the approved contractor) will be able to use these numbers to monitor which patients have returned their questionnaires and to identify any non-responders, who will need to be sent reminders. If an approved contractor is used, you will need to agree with them on the range of serial numbers that will be used for your patients.

- 2) **Day of questionnaire being received.** This can only be completed if and when a questionnaire is received by the trust or approved contractor. It should be a one or two digit numerical response eg N or NN, **not** a date format eg 12/05/08.
- 3) **Month of questionnaire being received.** This can only be completed if and when a questionnaire is received by the trusts or approved contractor. It should be a one or two digit numerical response, **not** a date format.
- 4) **Year of questionnaire being received.** This can only be completed if and when a questionnaire is received by the trusts or approved contractor. It should be a four digit numerical response, **not** a date format.
- 5) The **Outcome** field will be used to record which questionnaires are returned to the freepost address, or are returned undelivered, or which patients opt out of the survey, etc.
 - 1 = Returned useable questionnaire
 - 2 = Returned undelivered by the mail service or patient moved house
 - 3 = Patient died
 - 4 = Patient reported too ill to complete questionnaire, opted out or returned blank questionnaire
 - 5 = Patient was not eligible to fill in questionnaire
 - 6 = questionnaire not returned (reason not known).

The outcome column is left blank at first if the survey has not been returned (on table 1 you can see that Ms Yoo has not yet returned her questionnaire).

- 6) The **Comments** column is useful for recording any additional information that may be provided when someone calls the helpline – for example, to inform you that the respondent has died or is no longer living at this address.

4.7 Distribution of patient ages

You should check that patients of all ages are included in your sample, especially for those aged 16, 17 or 18 years or those over 75 years. We have found these age groups are the most likely to be excluded due to poor sampling.

Check that your sampled patients' ages cover the full range of expected ages. Ideally, you should do this by checking the distribution of ages on a histogram (See Figure 1). For most trusts the histogram should generally decrease with age, (representing higher numbers of younger adults) then increase slightly for those aged around 60 years (baby-boomers), before entering a further decline to reflect fewer people at extreme old age.

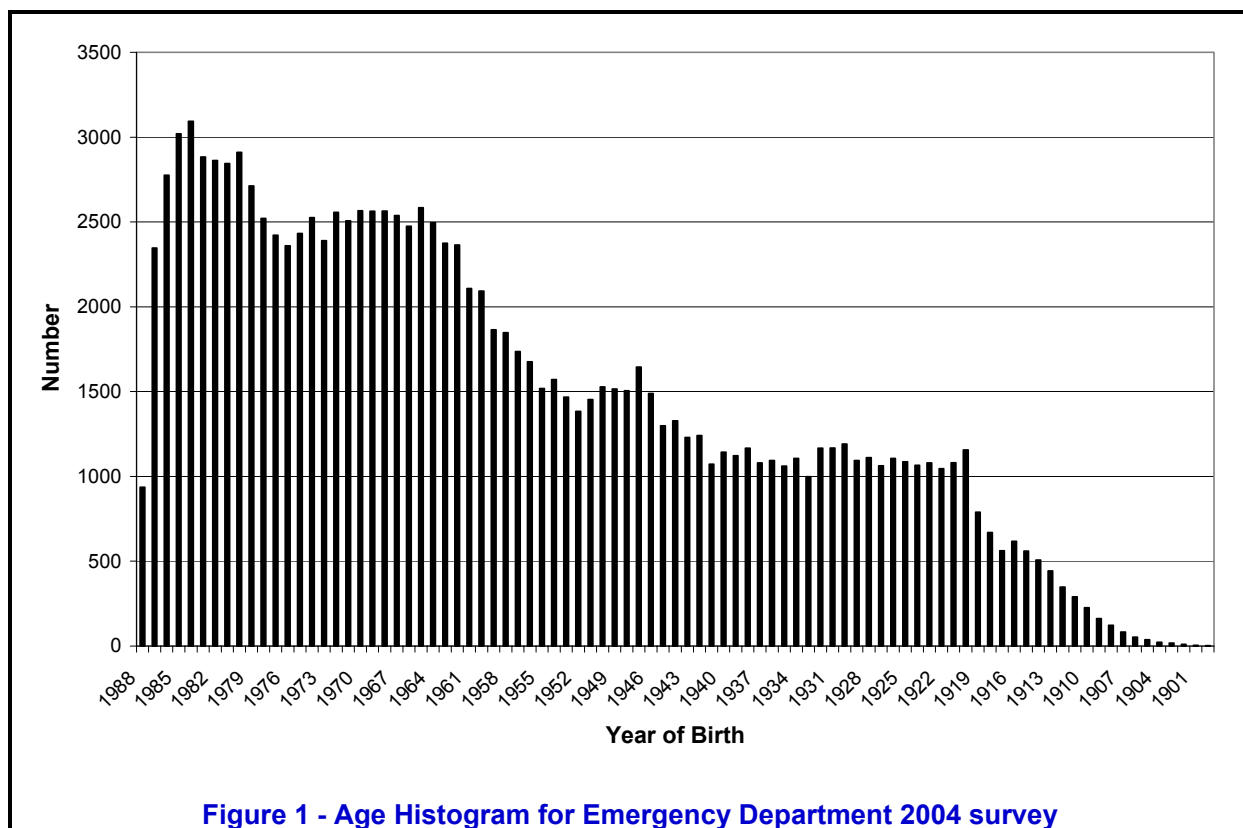


Figure 1 - Age Histogram for Emergency Department 2004 survey

4.8 Distribution of patient gender

Your sample will probably have similar proportions of men and women. You should check each of these genders are included and that you can explain if the sample is skewed toward male or female patients.

4.9 Sharing the patient sample file with an approved contractor

If you are working with an approved contractor and have an honorary contract, the full sample information **and** the name and address information should be sent to those contractor staff covered by the honorary contract. If you are working with an approved contractor, but **not** using an honorary contract to share patients' name and address details, you should supply them with a version of the list shown in **Table 1 (Sample Excel file of patient details)**, with names and addresses removed. The contractor can use this list to record the outcome codes, and you should ensure that the contractor is kept up to date with any information that comes directly to the trust about patient deaths, etc.

4.10 Creating the mailing and response spreadsheets

At this point, you should generate two copies of your sample file and name them “<NHStrustName>_Emergency2008.xls” and “Emergency 2008 mailing spreadsheet”. The following changes should be made:

- <NHStrustName>_Emergency2008.xls: delete all name, address and comment columns ie all columns in bold black in **Table 1 (Sample Excel file of patient details)**. The Co-ordination Centre has produced a ‘data entry spreadsheet’ (available on our website: www.NHSSurveys.org), which has all the required columns for the sample information, as well as columns for the response data from returned questionnaires. Only this “anonymised” version can be used to record patient responses. It is this version of the spreadsheet that must be submitted to the Co-ordination Centre.
- Emergency 2008 mailing spreadsheet: this spreadsheet is used for mailing purposes. It is essential that the “Outcome” column (about whether patients have responded, or why they have not responded) is kept accurate and up-to-date. Reminders can then be sent to patients who have not yet responded.

For patient confidentiality reasons, **it is essential that you do not keep patient name and address details in the same file as their survey response data.**

4.11 Increasing sample size beyond minimum requirement

Your trust may wish to use the Emergency Department survey as an opportunity to gather data in addition to that required by the Healthcare Commission. One way to do this is to increase the number of patients you sample, ensuring that you target sufficient numbers from each of the units you want to compare so that you can get enough responses to make comparisons. However, before you decide to do this, there are some important points to consider:

- The core sample for the 2008 Emergency Department survey must be drawn as specified in this guide. It is essential that any additional sample drawn can be easily distinguished from the core sample, and that it is drawn in such a way as to not interfere with selection of the core sample
- Small, limited surveys are easier for in-house staff to handle than large surveys. You may wish to consider keeping the two things separate by doing the large patient survey on its own (either in-house or with an approved contractor) and then following it up with smaller, targeted in-house surveys.

To summarise

If you do choose to increase your sample size, it is essential that you ensure that the sample of patients you draw according to the requirements for the national survey can be easily distinguished from any additional patients you include in the sample.

You must **only** send the Co-ordination Centre data for the 850 patients sampled according to these guidelines.

5 Final sampling inspection by the Co-ordination Centre

Trust data should still be checked for errors and received back from NSTS before being forwarded to the Co-ordination Centre. An anonymised sample file¹ **must** be submitted to the Co-ordination Centre **prior** to the first mailing. This is to allow us to make final quality control checks. All columns *in red italics* in Table 1 (sample Excel file of patient details) must be submitted, but name, address and postcode details must be removed.

If you are using an **approved contractor**, the sample should be checked as normal by the trust and by NSTS before being submitted to the contractor. We strongly recommend the contractor carries out the same high standard of checks as in previous years, but will then submit the file to the Co-ordination Centre. The Co-ordination Centre will address any issues arising from these final checks to the approved contractor.

The Co-ordination Centre will be checking for extraordinary errors. These are more visible when viewing data from many trusts at one time. For this reason, samples will be checked as collated files. Emails discussing any sample anomalies will be returned to the trust or approved contractor which provided them on Tuesday of each week. [Please note: samples submitted on a Monday must be sent to the Co-ordination Centre by 11am for the samples to be returned to the trust or approved contractor the following day.]

Initially, we will be working to the timetable included below but, if sufficient samples are submitted during a week, we hope to be able to respond to trusts and approved contractors earlier:

Date sample received	Date sample returned
07/04/2008 – 14/04/2008	15/04/2008
15/04/2008 – 21/04/2007	22/04/2008
22/04/2008 – 28/05/2008	29/04/2008
29/04/2008 – 05/05/2008	06/05/2008

Samples should reach the Co-ordination Centre by the **5th May 2008 at the latest**. If they do not, there is a risk your trust will not have enough time to correct any problems in the sample and complete the survey with an acceptable response rate. Major errors may then result in the data from the trust being excluded from the relevant Healthcare Commission assessments.

¹ Created by removing the patients' names, addresses and postcodes.

6 Appendix 1: Declarations of data protection compliance

Declaration of compliance with the Data Protection Act 1998

DECLARATION RELATING TO THE

[Name of survey eg 2008 Emergency Department Survey] FOR TRUSTS USING IN-HOUSE SURVEY TEAMS

While carrying out the [insert survey name], all trusts need to comply with:

- the Data Protection Act 1998,
- the NHS Code of Practice on Confidentiality, and
- the Caldicott principles.

Due to the large amount of patient information requested by the NHS patient survey programme, it has become necessary to regulate which individuals at a trust are able to view the raw data and some of the processed data. Only those trust staff who have completed this declaration will be authorised to view this restricted data. As the Caldicott Guardian is the designated person within the trust to supervise access to patient identifiable information, all declarations must be co-signed by the trust's Caldicott Guardian. If the trust's Caldicott Guardian does not authorise this, the trust must carry out the survey using an approved contractor.

For further information on the new guidelines, please see the "Data protection" section in the Guidance Manual for the [insert survey name].

I, [insert name of Caldicott Guardian] the Caldicott Guardian for [insert trust name] declare the aforementioned trust to be compliant with the Data Protection Act 1998 and will ensure that data collected while carrying out the NHS patient survey programme will conform to the guidelines set out under the section "Data protection" in the Guidance Manual for the [insert survey name here].

Signature: Date:

I, [insert name of first survey lead] the first Survey Lead for [insert trust name] declare I understand the requirements of the Data Protection Act 1998 as they relate to the [insert survey name here] and will ensure that data collected while carrying out the NHS patient survey programme will conform to these requirements and the guidelines set out under the section "Data protection" in the Guidance Manual for the [insert survey name here].

Signature: Date:

I, [insert name of second survey lead] the second Survey Lead for [insert trust name] declare I understand the requirements of the Data Protection Act 1998 as they relate to the [insert survey name here] and will ensure that data collected while carrying out the NHS patient survey programme will conform to these requirements and the guidelines set out under the section "Data protection" in the Guidance Manual for the [insert survey name here].

Signature: Date:

7 Appendix 2: Declarations for additional data analysts

Declaration of compliance with the Data Protection Act 1998

**DECLARATION
RELATING TO THE
[Name of survey eg 2008 Emergency Department Survey]
Additional data analysts**

If the trust requires additional data analysts to have access to the raw data set, this form must be completed and sent to the Co-ordination Centre, and a response received before access to the data set is granted. Only those trust staff who have completed this declaration will be authorised to view this restricted data. As the Caldicott Guardian is the designated person within the trust to supervise this access, all declarations must be co-signed by the Caldicott Guardian. If the Caldicott Guardian does not authorise this, the raw data set and responses from subgroups numbering less than twenty can only be viewed by the authorised survey leads.

For further information on the new guidelines, please see the “Data protection” section in the Guidance Manual for the **[insert survey name]**.

I, **[insert name of Caldicott Guardian]** the Caldicott Guardian for **[insert trust name]** declare the aforementioned trust to be compliant with the Data Protection Act 1998 and will ensure that data collected while carrying out the NHS patient survey programme will conform to the guidelines set out under the section “Data protection” in the Guidance Manual for the **[insert survey name here]**.

Signature: Date:

I, **[first additional data analyst]** the first additional data analyst for **[insert trust name]** declare I understand the requirements of the Data Protection Act 1998 as they relate to the **[insert survey name here]** and will conform to these requirements and the guidelines set out under the section “Data protection” in the Guidance Manual for the **[insert survey name here]**.

Signature: Date:

I, **[second additional data analyst]** the second additional data analyst for **[insert trust name]** declare I understand the requirements of the Data Protection Act 1998 as they relate to the **[insert survey name here]** and will conform to these requirements and the guidelines set out under the section “Data protection” in the Guidance Manual for the **[insert survey name here]**.

Signature: Date:

8 Appendix 3: NSTS Batch Trace Advice

Dear Colleague

In line with our continual process of review and improvement of NSTS Batch Tracing, we write to confirm and advise you of the following:

1. **Acceptable Media:** Batch Trace files may only be submitted on CD or on diskette. Re-writable CD (CD-RW) is the preferred media-based method of submission. Tapes (DAT, DLT, etc) are now no longer acceptable. A **new TS2** (Batch Submission) form has been drafted to reflect this and is attached - please ensure a **new** one is completed and included with every submission.
2. **Encryption:** Batch trace files **must** be encrypted to AES 256-bit strength using WinZip v9 or above (current version is 11) – the Windows 'zip' facility does not do this and should not be used. The password/phrase used to encrypt the file should be at least twelve characters long and follow the password/phrase guidelines (see separate sheet).
The encryption password/phrase for the batch must be emailed to Atos Origin at NSTSBatchTracingACP@nsts.nhs.uk when the batch is sent off; the email must have your organisation's Access Agreement Number (e.g. AAN123) and the Batch Trace User ID in the subject line.
3. **Delivery method:** Media containing encrypted batch trace file(s) must be sent (as usual) to Atos Origin's Andover Data Centre using a secure delivery method such as either Royal Mail Special Delivery or a Courier approved by your organisation, but please ensure that the package can be tracked from sender to addressee and will have to be signed for.
4. **Failure to comply:** Any batch trace data received that is (i) not encrypted to AES 256-bit strength; or (ii) has an 'unsafe' or incorrect password/phrase (see guidelines); or (iii) is sent in by non-secure delivery method (e.g. 1st Class Post); will not be processed. Instead: an NSTS security incident will be raised; the batch trace user will be contacted to resubmit the data securely; and the media will then be destroyed.
5. **PKI:** Organisations wishing to submit tracing batches by PKI-encrypted email are encouraged to do so. Please see the following for more information and guidance:
<http://www.connectingforhealth.nhs.uk/systemsandservices/nsts/docs/index.html#pkiencripted>

Please contact us at nsts.servicemgmt@nhs.net with any queries.

Thank you for your cooperation.

Philip Nicholson
NSTS Security Manager
NHS Connecting for Health

December 2007

9 Appendix 4: NSTS password/phrase guidelines for batch encryption to AES 256 bit strength

While it has been reported that it might be necessary to use a password/phrase as long as 64 characters to take full advantage of AES 256-bit encryption, we recommend that a pass-phrase of no less than 12 characters is used for encryption of NSTS batch trace files. This achieves a good compromise between security and usability.

For optimal effect, a password/phrase should therefore:

- Be at least twelve characters long;
- Contain a mix of alphabetic, numeric and 'special' characters (such as ; - < ? #);
- not use an alphabetic or numeric series, either backwards or forwards (i.e. ABCDEFG, GFEDCBA, ABCABCABC 1234567 or 7654321, 123123123);
- not use a string of identical letters or numbers (i.e. AAAAAAA or 1111111);
- not use a common keyboard shortcut (i.e. ASDFG or QWERTY).

A pass-phrase is to be preferred and might be something like:

- A 'pseudo' phrase such as 5pm_Go_Walking (please don't use this!);
- A 'word' using the first one or two characters from a sentence plus some added special characters (such as ev go_bo de fa short for 'every good boy deserves favour' which some of you may recall from music lessons);
- A sentence, perhaps with additional characters, selected from a book or newspaper.

Passwords/phrases should, of course, be changed regularly and not less frequently than every month. For batch encryption one can use a fresh pass-phrase for each batch, of course.

NSTS Service Management Team
NHS Connecting for Health

December 2007