3) Quota sampling

Similar to convenience sampling, steps are taken to ensure that subgroups of the audit population are represented in particular proportions, e.g. age, diagnosis.

4) Consecutive sampling

Samples are included from an agreed start date, e.g. all blood donors from 1st September

Sampling Bias

If you do not choose your audit sample carefully it can skew your audit results and give inaccurate information. It is important that you choose the best method of sampling for the given situation, ensuring that the audit is as robust as possible.

Contact details and further information on any part of this leaflet can be found at:

http://nhsbtweb/group_services/clinical/statistics_clinical_audit/index.asp

The diagram overleaf shows a simple process to follow to help decide whether you should choose the whole audit population or use a sampling method to make your audit more manageable.

Specify the exact patients, events, cases or situations to be included and excluded from the audit

Find out or estimate how many there are in a given time period e.g. a day, week, month, or year

Can you find all cases? — **NO** → **Use a sample of the population**

YES

Do you need to include all cases? — **NO** → Do you want a sample that represents the audit population? — **NO** → **Use a sample of the population**

YES

Is there time or resources to include all cases? — **NO** →

Do you want a sample that represents the audit population? — **YES** → **Use a sample of the population**

YES

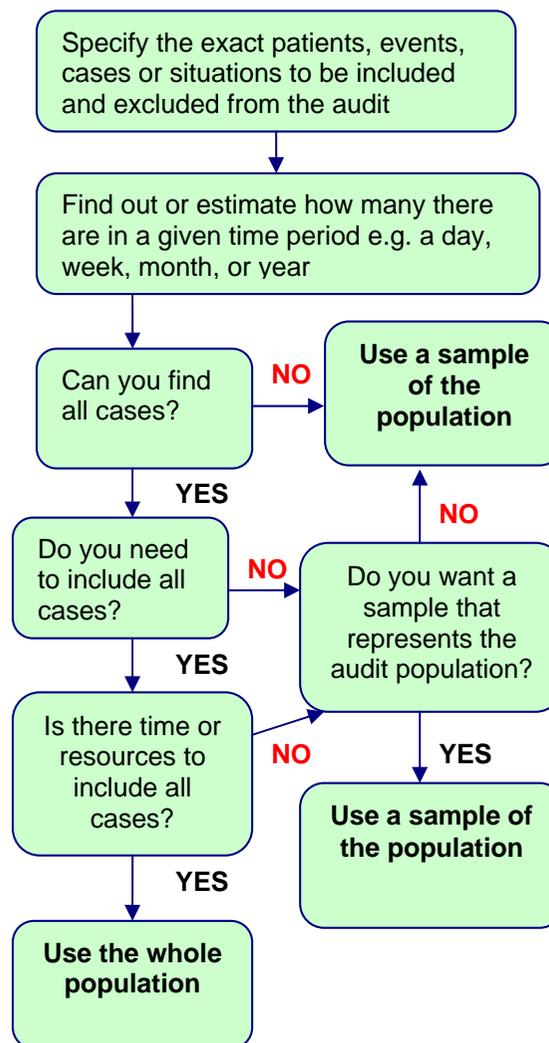**Use the whole population**

Diagram adapted from Dixon, N & Pearce, M: Clinical Audit Manual, Healthcare Quality Quest (2008)

Leaflet developed from an original idea by UBHT NHS Trust Clinical Audit Department.

INFORMATION DOCUMENT INF456/1.2
EFFECTIVE: 17/06/13

NHS

Blood and Transplant

How to Select an Audit Sample

Statistics & Clinical Audit

Populations and Samples

Clinical audit involves comparing some aspect of patient or donor care against an agreed standard. The patients or donors who have received this aspect of care are known as the 'audit population'.

For example, *if you were auditing consent for stem cell storage and processing, your audit population would be all stem cell donors.*

Ideally a clinical audit should include all patients / donors, but this can be impractical due to resource or time constraints. To make the audit more manageable, we need to select a smaller sample of this population whilst ensuring that the sample is representative of the whole population.

How big should my sample be?

Clinical audit is not research, so whereas a research study will need large numbers of subjects to show which intervention is best, clinical audit needs only to determine whether practice complies with standards. You can usually get the information that you need from smaller sample sizes.

However, there is no magic number as to exactly how large your sample should be – this will depend on:-

- the area being audited
- the amount of data being collected
- how easy it is to collect that data
- the resources available for data collection

How do I choose my sample?

Random sampling

Random sampling methods will return a sample which is more representative of the overall population and assumes that this population remains the same throughout the period being audited. There are a number of ways to choose a random sample:-

1) Simple random sampling

Cases are selected in a completely random way which ensures that each case has an equal chance of being selected e.g. by using a computerised random number list or drawing random numbers out of a hat.

2) Stratified random sampling

The population is divided into groups depending on characteristics they share in common e.g diagnosis, blood group, age, collection team. A random sample is then selected from each group.

3) Interval random sampling

The population is arranged in order and the first case is then selected at random. The rest of the cases are then selected at pre-defined intervals, e.g. every 3rd or every 5th donor.

4) Rapid-cycle sampling

This method can be used where you know there may be a problem and you want to obtain results as quickly as possible. Here you carry out the audit with a relatively small sample , implement changes and then reaudit using another small sample to determine whether improvements have been made. This method uses lots of small data sets to monitor care and can make the change cycle quicker to complete.

Other sampling methods

There are other ways of choosing your audit sample. However, care should be taken when using these as audit samples may end up less representative of the audit population.

1) Purposive sampling

Cases are selected for specific purposes – because they have particular characteristics, for example, blood group, age, diagnosis.

2) Convenience sampling

Cases are selected for inclusion in the sample because they can be accessed relatively easily. For example, donors visiting a blood donation session on a specific day.