



# Leaflet 7

## How to Select an Audit Sample

The following diagram shows a simple process to follow to help decide whether to choose the whole audit population or use a more manageable sampling method.

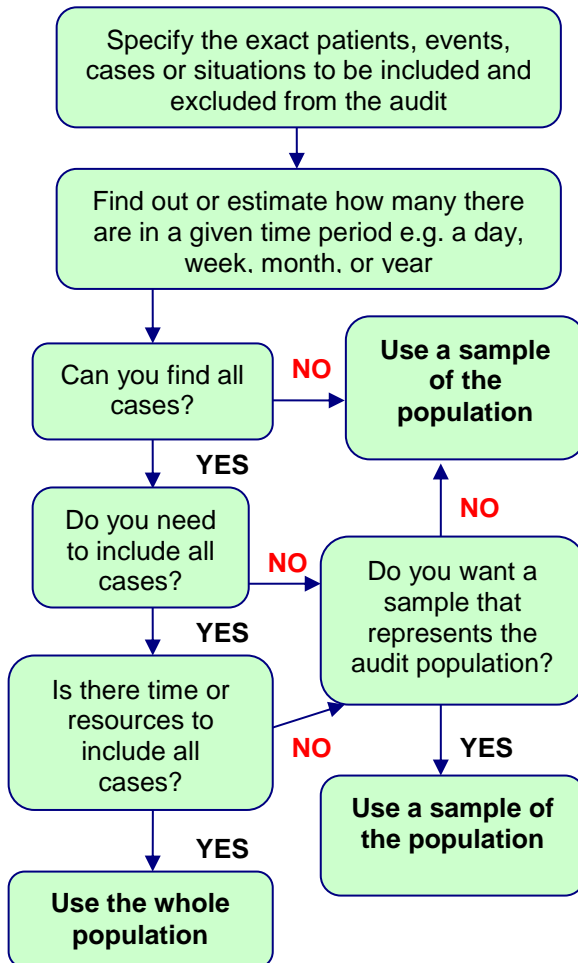


Diagram adapted from Dixon, N & Pearce, M: Clinical Audit Manual, Healthcare Quality Quest (2008)

### 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. For example:-

When auditing a blood collection process on session, take care not to use just the first 5 of the day when everyone (staff and donors) are fresh, ready for a new day. Consider spreading the cases throughout a day or even across the week. Ensure practice from all staff members is captured or you may only get to see data from an experienced staff member or recently trained person.

Further information about clinical audit is available from SharePoint on the clinical audit pages: <https://nhsbloodandtransplant.sharepoint.com/sites/Clinical/SitePages/Clinical%20Audit.aspx> where full details of all completed clinical audit reports can be found (accessed 9<sup>th</sup> January 2024). All leaflets in this series (INF450-INF460) are available via the controlled document library on NHSBT Intranet (Link)

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## Populations and Samples

Clinical audit involves comparing a defined 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 it more manageable, 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; a research study will need large numbers of individuals to show which intervention is best whereas clinical audit determines whether practice complies with standards. It is often possible to get the information required from smaller sample sizes. However, there is no magic number to determine 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:

**Simple random sampling** – select cases in a completely random way ensuring 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.*

**Stratified random sampling** – divide the population into groups depending on characteristics they share *e.g. diagnosis, blood group, age, collection team. A randomised sample is then selected from each group.*

**Interval random sampling** – arrange the population in order; the first case is selected at random. The rest of the cases are then selected at pre-defined intervals, *e.g. every 3<sup>rd</sup> or every 5<sup>th</sup> donor.*

**Rapid-cycle sampling** – can be used when you know there may be a problem and want to obtain results as quickly as possible. Carry out the audit with a relatively small sample, implement changes and then re-audit 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, use of these is restricted by the audit specifics as audit samples may end up less representative of the audit population.

**Purposive sampling** – cases are selected for specific purposes – because they have certain characteristics, *e.g. blood group, age, diagnosis.*

**Convenience sampling** – cases are selected for inclusion in the sample because they can be accessed relatively easily. *e.g. donors visiting a blood donation session on a specific day.*



**Quota sampling** – like convenience sampling, steps are taken to ensure that subgroups of the audit population are represented in specific proportions, *e.g. age, diagnosis.*

**Consecutive sampling** – samples are included from an agreed start date, *e.g. all blood donors from 1<sup>st</sup> September.*