Although Team A deferred more donors, they also screened more donors. As a percentage, Team A's inappropriate deferral rate was 5.9% whereas Team B's inappropriate deferral rate was 7.7%, showing that Team B deferred proportionately more donors inappropriately than Team A.

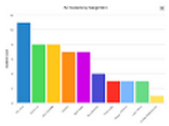
Charts and Graphs

These are useful tools to present and compare information in a simple, easy to understand format. Use those that best show the point you are trying to make, **but** care must also be taken not to over-use.

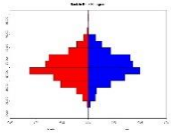
There are several different types of chart available with no hard and fast rules as to which one should be used.

Remember – keep it as simple as possible.

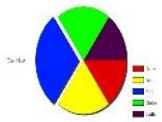
Bar Charts – used for distinct categories, such as blood group and gender. There are spaces between each bar as the data is *discrete.*



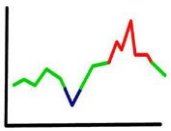
Histograms – used for ranges of data, e.g., blood pressure, height and weight. There are no spaces between each bar as the data is continuous.



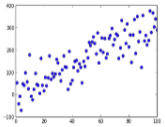
Pie Charts – used for showing proportions / percentages within different groups.



Line Graphs – are useful for comparing changes over time and are better than bar charts for comparing changes between different groups.



Scatter Charts – are used when looking for associations or patterns between two factors.



Analysing Qualitative Data - By looking for similarities between different question responses we may find better evidence of trends and problems for situations where practice was appropriate but not necessarily the best. Was an action prompted by a regular patient, was something observed that could be an example of good practice or where the process has a previously unknown risk. Repeated use of key words may highlight trends in Best Practice or an area for improvement. Rich qualitative data can help find the root cause of issues, allowing correlation between key events or findings to be brought together to find solutions.

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 1st December 2022). All leaflets in this series (INF450-INF460) are available via the controlled document library on NHSBT Intranet (Link)

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

INFORMATION DOCUMENT INF458/2
EFFECTIVE: 29/12/2022

NHS Blood and Transplant

Leaflet 9

How to Analyse Your Clinical Audit Data

Clinical Audit

Clinical Audit Manager: Marc Lyon – 07764 280833

Senior Clinical Audit Facilitators:

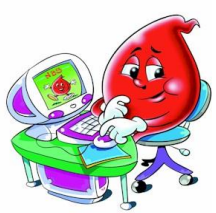
Emma-Kate Chawishly – 07711 447198
Dawn Tilsley – 07720 275387

clinical.audit@nhsbt.nhs.uk

Analysing clinical audit data

The basic aim of data analysis is to convert raw data into useful information; looking for anomalies and patterns in the data which will tell you how well you comply with your audit standards.

Ideally, you will have identified how to analyse your audit data before collection. This helps to ensure that you collect data that answer the audit objectives. This leaflet gives brief details of ways to obtain information from your data.



If you have collected the right data, it will be easy to analyse and get the information you need. (See leaflet 7 'How to Select an Audit Sample' INF456; and leaflet 8 'How to Collect Clinical Audit Data Effectively, INF457).

Remember - Objectives are specific and measurable.

For example: ***'****To determine the number of donors deferred appropriately in accordance with the Donor Selection Guidelines'. Information regarding donor deferrals would be gained and a method, such as peer review, used to determine which deferrals were appropriate; giving the number and percentage of donors deferred inappropriately.*

The type of data analysis depends on the type of information you have collected. This can range from simple averages and percentages to more complicated techniques.

Although statistical techniques can be useful, will everyone understand them? If the results of the audit are to change practice, the analysis must be simple enough for everyone in the process to understand.

Different Types of Data

There are two main types of data, **Quantitative** and **Qualitative**:

Quantitative data *is concerned with numerical or specific data e.g. Yes/No, Age, Gender, Blood Pressure, Blood Groups. The analysis of this type of data is performed using simple mathematical techniques.*

Qualitative data *is usually descriptive rather than numerical e.g. comments on questionnaires, donor complaints. This data needs to be analysed differently and carefully, as it can often be subjective and open to interpretation*.

Analysing Quantitative Data

The following descriptive statistics are commonly used data analysis tools.

Average – your data will determine the most appropriate of the three average methods to use:

Mean – the mathematical average; add all the values together and divide by the number of data points (this is the most frequently used average).

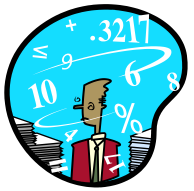
The other 'averages' can be used to determine if your data is skewed. *i.e. if you have one or two extreme values at one end of your data range that differ greatly from the mean, the mode and median averages may describe your data more effectively.*

Mode – is the most commonly occurring data point.

Median – when the data is sorted into numerical order, the median is the middle value. This method reduces the skewing of data by extreme values.

Standard Deviation – gives information about the spread of data around the mean. The value of the standard deviation should be compared relative to the mean. A large standard deviation, when compared to the mean, implies the data is widely spread whereas a small standard deviation implies the data is mainly concentrated around the mean.

For example*: patients have a mean age of 32y with a standard deviation of 1.2y. This means most patients will be 32y or very close to it. A standard deviation of 10.5y would imply that the age range of the patients was more widely spread.*



Confidence Intervals - These can be used to calculate whether you have got the same information as you would have got had you audited the whole population. Ordinarily, the bigger the sample size, the lower the confidence interval; giving a higher confidence level.

Ask yourself: At what point are you reassured that the data analysis provides a result that you have sufficient confidence in to make recommendations for change in practice?

For example*: two teams investigated the appropriateness of donor deferrals.*

- *Team A health screened 256 donors and 15 were deferred inappropriately.*
- *Team B health screened 156 donors and 12 were deferred inappropriately.*