

## Data Presentation Standards

Data must be presented in an easily understandable form. Depending on the type of data, it can be represented by a bar chart (or histogram), pie chart, a line graph, or even just a sentence, provided it is quickly interpreted and any trends or comparisons are obvious.

**Line graphs** can show even small changes, which is one of their advantages. The X axis usually indicates time.

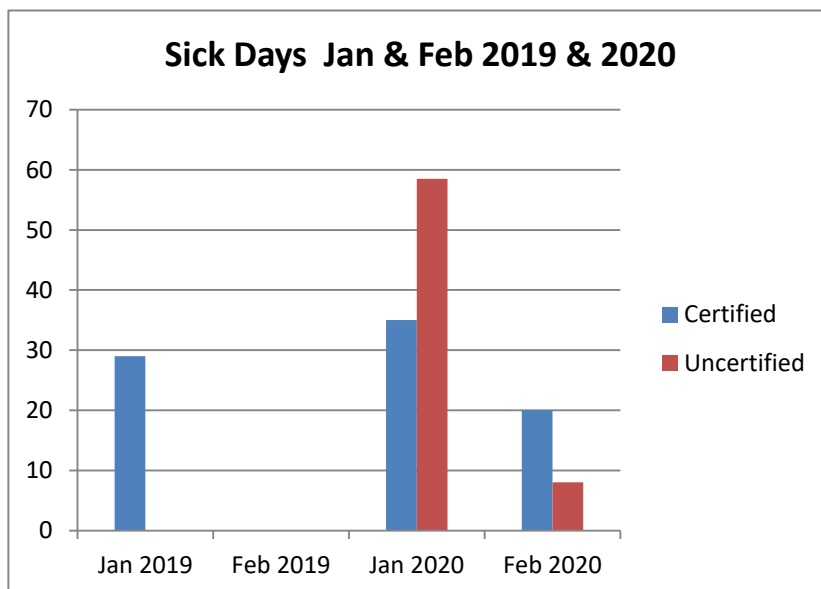
**Pie charts** are used to indicate the components of one whole. They do not show trends.

**Bar charts**, or **histograms**, are used for measuring differences between groups but they do not show changes over time in such a clear way as line graphs. Histograms can also show frequency distributions (i.e. how often different outcomes are observed) much more effectively than line graphs.

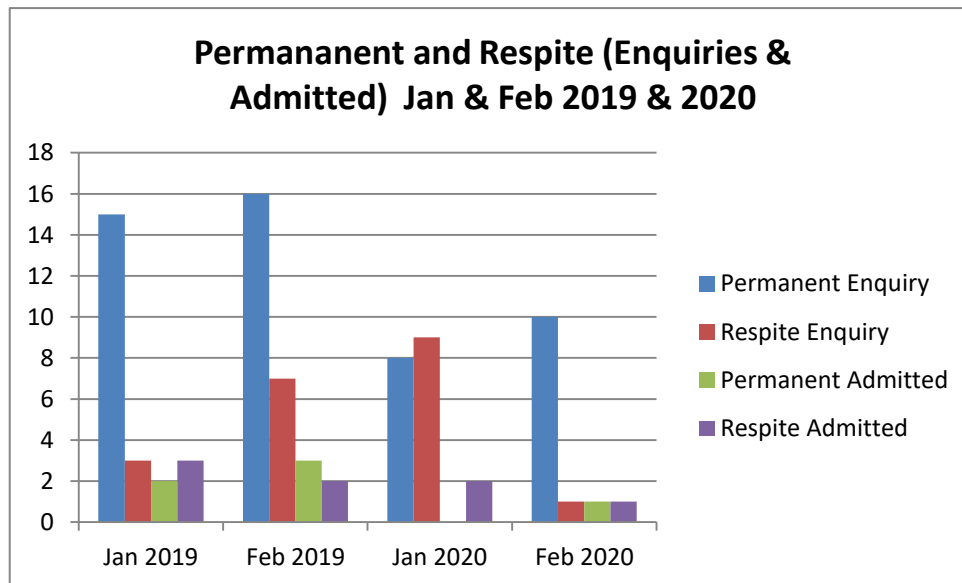
Most Knellwood data is best represented in histogram form for the Board.

### ***Histograms***

Here is an example of a histogram comparing certified and uncertified sick days for January and February 2019 and 2020.



The following histogram compares enquiries for permanent and respite beds in Knellwood for the same two months and years, and indicating the numbers who were admitted as residents.

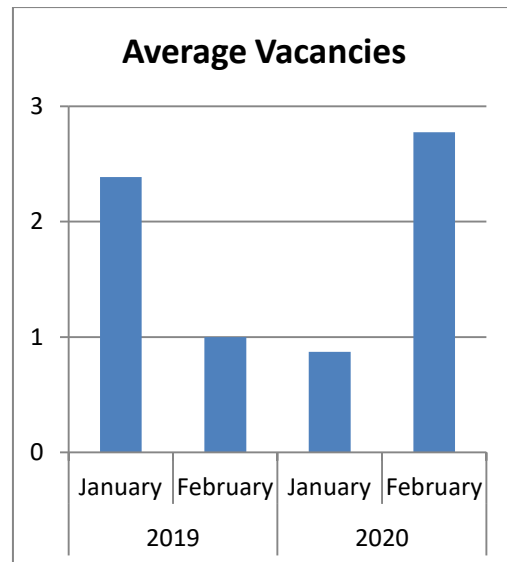
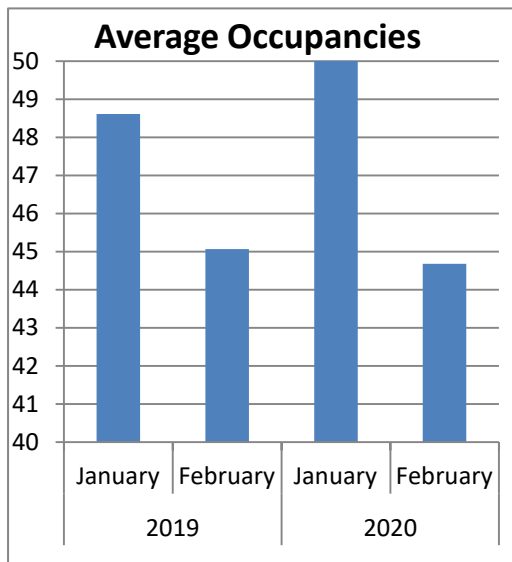


These charts are produced automatically by entering the data into an Excel spreadsheet.

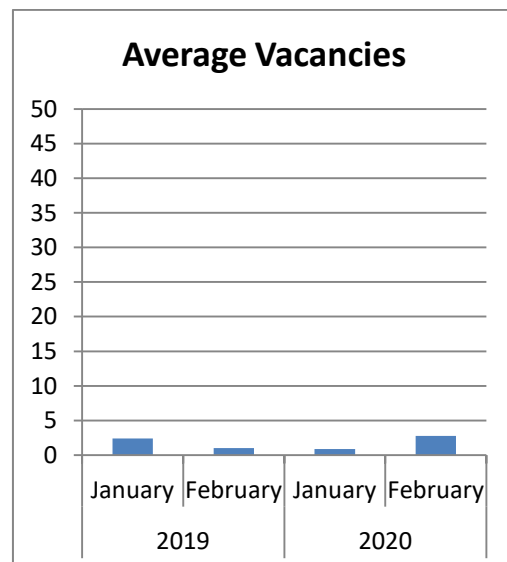
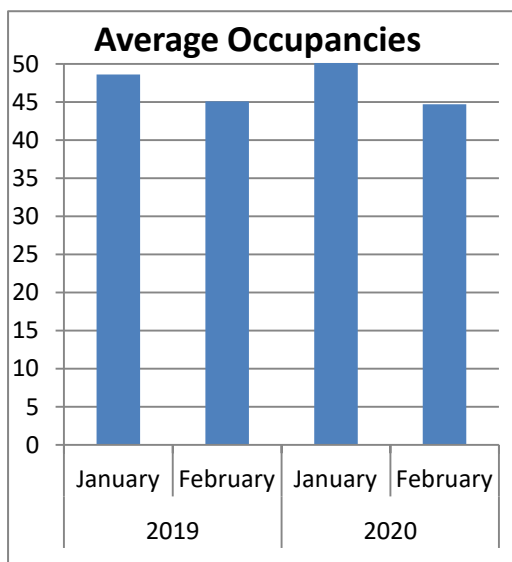
It is important to arrange the correct data in the right format for the charts, and to choose appropriate scales for each axis. The data is exported into a Word report (e.g. for a Board meeting). This gives an indication of trends. If an in-depth check has to be made, the data in the spreadsheet can be examined in more detail by management.

Below are two histograms showing average bed occupancies and vacancies over the same two months and years.

These could be confusing because they do not show similar scales on the Y axis.

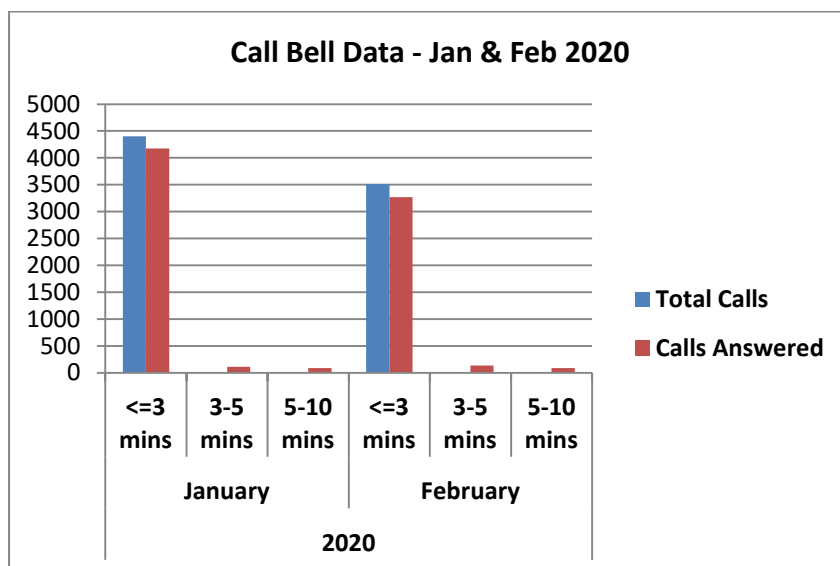
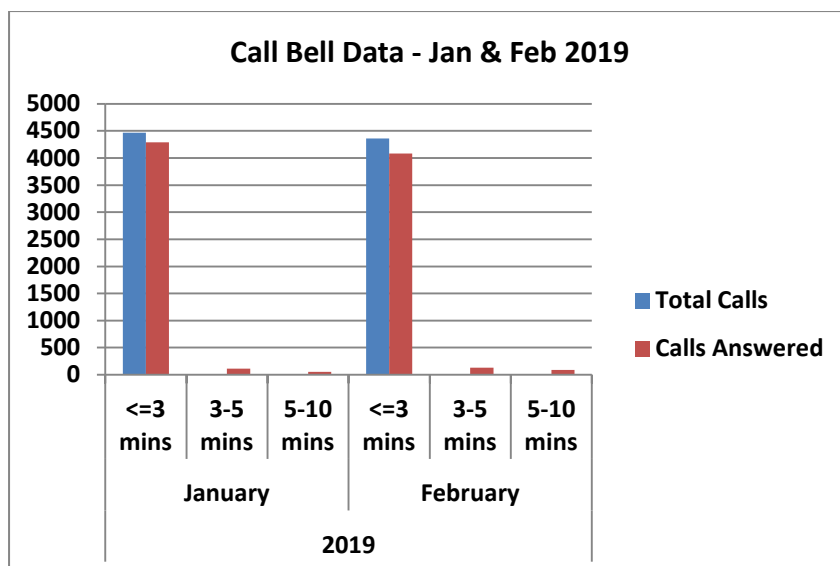


Here is a better way of displaying the same data.



Now it can be easily interpreted and compared. It shows consistently few vacancies and good occupancy numbers, which is excellent.

Below are two more histograms showing several variables, comparing the number of call bells answered in a timely manner over the same two months and years.

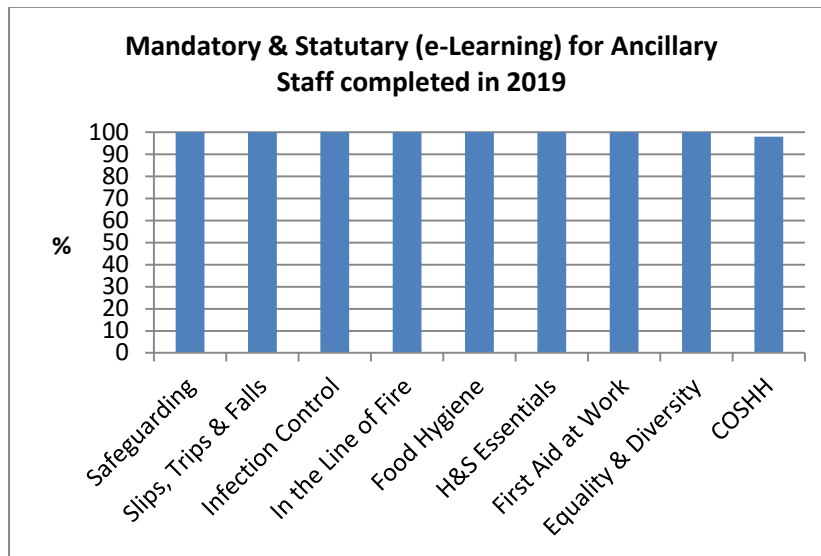


All that is required for a report to the Board is an indication of how many calls are answered quickly.

Obviously a few calls are answered late, and the management will want to investigate the reasons by analysing the data in more detail, but for the Board's purposes, the trend is sufficient.

It can be seen that most calls are consistently answered within 3 minutes, which again is excellent.

Here is a histogram showing online training courses completed by ancillary staff.



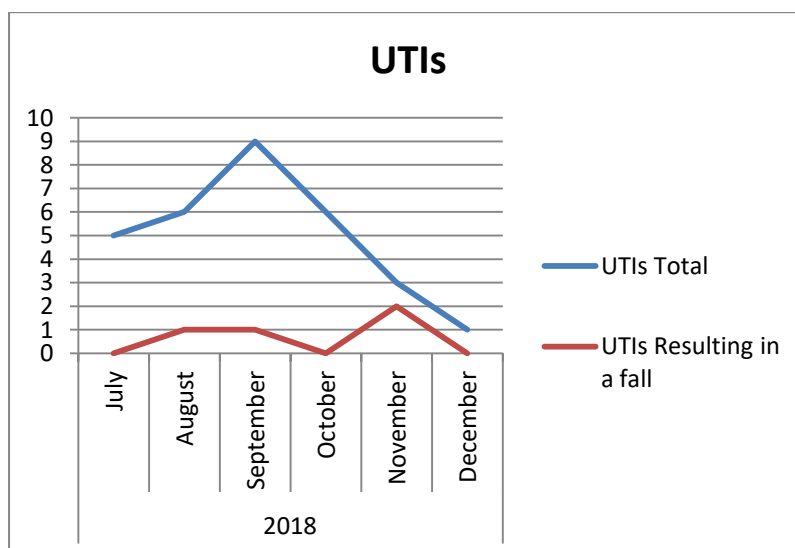
This data would be better represented by a single sentence, such as:

**“All annual mandatory and statutory e-learning undertaken by ancillary staff in 2019 is 100% complete except COSHH training, which is 98% complete”.**

### ***Line Graphs***

If the X axis shows time over a consecutive number of months, and there are only a few variables, a line graph is an alternative method of displaying data.

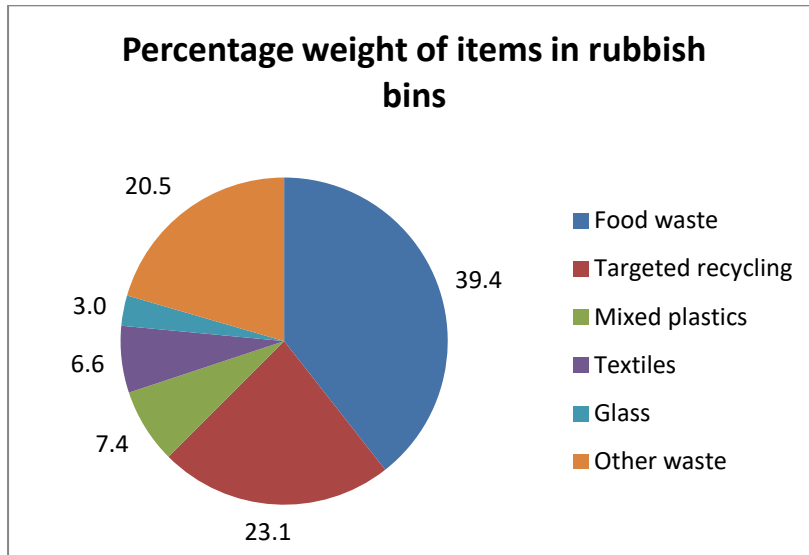
This graph shows the number of urinary tract infections over the period from July to December 2018, and indicates those resulting in falls.



## ***Pie Charts***

A pie chart is a circular chart divided into slices, or segments, where each one represents a percentage of the whole, which is 100%. The size of each segment is proportional to the quantity it represents. As a guide, a pie chart should only be used when there are no more than seven data points, or segments.

Here is an example of a pie chart. It is easily understandable and doesn't have too many segments.



Unlike line graphs or histograms, pie charts can't show a trend. They can only give a snapshot of data at a given time.

When choosing which type of chart or graph best represents data, the ability to convey accurate information is paramount. The most effective type of chart is the one that shows the key information in the most readable and digestible format without sacrificing accuracy.