

## COGLS8

### Apply statistical analysis to data for life sciences related work activities



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#### Overview

This standard covers the competences you need to analyse data from life science related work activities, and to apply the principles and processes of statistical analysis, in accordance with approved procedures and practices. You will be expected to analyse data, utilising statistical and graphical.

During this work you must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO YOU.

The activity is likely to be undertaken by someone whose work role carries out life science related work activities. This could include individuals working in hospitals, scientific laboratories, schools and universities.

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### Performance criteria

*You must be able to:*

- P1 ensure that your life sciences related work activity is carried out in accordance with standard operating procedures
- P2 establish the scope and purpose of the laboratory data to be analysed
- P3 identify the appropriate analytical process to be used to analyse the data and consult with relevant people, gathering all the data relevant to the analysis
- P4 collate all the data required for the analysis
- P5 apply the principles and processes of statistical process control to the data
- P6 carry out statistical and graphical methods to present the results of the analysis
- P7 produce a report containing the results of the analysis
- P8 present the results of analysis to the appropriate people

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### Knowledge and understanding

*You need to know and understand:*

- K1 why it's important to understand and keep up with the strategic direction of the life sciences agenda across the UK and globally and how this will influence the organisation
- K2 the impact of cost effectiveness within the life sciences industry
- K3 the lines of communication and responsibilities in your department, and their links with the rest of the organisation
- K4 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
- K5 your organisation's requirements for recording and archiving reports
- K6 different ways to analyse data and which is the appropriate method to use
- K7 how to apply statistical process control charts to measurement processes
- K8 why accuracy and precision in measurement analysis is essential to ensure appropriate conclusions in experimental results
- K9 ways to define limits (such as limits of detection, determination, quantitation and quantification)
- K10 how to use outlier tests and limits of detection correctly, and when not to use them
- K11 how to understand the influence of sample size (e.g., in control charts for grouped data, on statistical significance and power)
- K12 how to understand the strengths and weaknesses of data
- K13 how to present data
- K14 how to write up different types of reports depending upon requirements

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