# Qualitative Methods for Quality and Safety in Healthcare: Assessment Part 1

**You should submit a written report on the analysis of the specified dataset (maximum 2,000 words). You must answer all of the questions set out below using the dataset provided (50% of module mark).**

The staff of a neonatal unit want to investigate some indicators of care in their unit, including two measures from the National Neonatal Audit Programme (NNAP), for babies born very preterm: i.e. before 32 completed weeks gestational age.

The team record the gestational age at birth, diagnosis of bronchopulmonary dysplasia (BPD), sex, temperature at admission, and length of stay in neonatal care of 205 babies admitted to their unit and discharged home at the end of their neonatal stay. [[1]](#footnote-1)

The dataset is available on Blackboard as a csv file with the following variables:

|  |  |
| --- | --- |
| **Variable name** | **Description** |
| *gest* | Gestational age of the baby at birth (completed weeks) |
| *bpd* | Bronchopulmonary dysplasia: whether or not the baby needed respiratory support at 36 weeks post-menstrual age: 2  “Y” = yes  “N” = no |
| *sex* | Sex of the baby:  “F” = female  “M” = male |
| *temp* | First measured temperature within hour of birth:  “1” = <36.5°C (hypothermic)  “2” = 36.5°C to 37.5°C (normothermic) [[2]](#footnote-2)  “3” = >37.5°C (hyperthermic) |
| *los* | Total length of stay of the baby in neonatal care (calendar days) |

You should answer the following questions about these data using appropriate graphical methods, tables, summary statistics and statistical hypothesis tests.

**Question 1** (30% of overall mark for Assignment Part 1)

Use appropriate summary statistics, tables and graphical methods to summarise and describe the variables:

1. *los*
2. *bpd*
3. *temp*

**Question 2** (40% of overall mark for Assignment Part 1)

Through the use of appropriate statistical methods, tables and graphical output:

1. Describe and quantify the relationship between gestational age at birth (*gest*) and length of stay (*los*).
2. Investigate whether there is a difference in length of stay (*los*) between female and male babies (*sex*).
3. Investigate any difference in the incidence of BPD (*bpd*) by the sex of the baby (*sex*).

**Question 3** (30% of overall mark for Assignment Part 1)

Through the use of appropriate statistical methods, tables and graphical output:

1. Investigate any difference in the length of stay of babies (*los*) according to their temperature at admission (*temp*).

## INSTRUCTIONS

* The **maximum word count is 2,000 words**: excluding references and cover sheet.
* The deadline for submission is **12:00 on 20 December 2021**.
* You should **submit your report through Turnitin**. Your mark and comments will be returned through Grademark.
* This part of the assessment will be marked by a member of academic staff (usually the Module Lead) and moderated by another member of academic staff.
* The marking rubric is shown below.
* You can complete the tasks of the assignement using any software you choose - or, indeed, complete the work by hand (although this isn't recommended).
* Complete each part of the assignment in turn, clearly describing the methods you have selected, the results from the analyses and a lay interpretation of the results.
* Your report should contain all of the important information:
* Include a clear description of the statistical methods used, including both to summarise the data and to undertake any analyses.
* Clearly justify the methods you have used and why these were preferred to possible other methods.
* Clearly state any assumptions you have made when carrying out each analysis and whether you think that the assumptions are appropriate in each care.
* Ensure that any graphs or charts presented are designed to be clear to the reader and appropriated labelled.
* Referencing any key references you have relied on (academic literature and also policy documents if relevant) where this is appropriate.

## MARKING RUBRIC

* **Question 1 (30%)**
* **Question 2 (40%)**
* **Question 3 (30%)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Grade** | **Mark** | **Question 1** | **Question 2** | **Question 3** |
| **Distinction** | **100** | Faultless choice and application of methods. Excellent description of, and justification for, chosen methods, with excellent discussion of considered alternatives.  Graphical output of publication quality.  Highly nuanced understanding of the interpretation of the output. | Faultless choice and application of methods. Excellent description of, and justification for, chosen methods, with excellent discussion of considered alternatives.  Excellent consideration of the assumptions underlying the methods.  Highly nuanced understanding of the interpretation of the output. | Faultless choice and application of method. Excellent description of, and justification for, chosen methods, with excellent discussion of considered alternatives.  Excellent consideration of the assumptions underlying the method.  Highly nuanced understanding of the interpretation of the output. |
| **95** |
| **85** |
| **78** | Faultless choice and application of methods. Comprehensive description of, and justification for, chosen methods, with good discussion of considered alternatives.  Graphical output of good quality.  Nuanced understanding of the interpretation of the output. | Faultless choice and application of methods. Comprehensive description of, and justification for, chosen methods, with excellent discussion of considered alternatives.  Comprehensive consideration of the assumptions underlying the methods.  Nuanced understanding of the interpretation of the output. | Faultless choice and application of method. Comprehensive description of, and justification for, chosen methods, with excellent discussion of considered alternatives.  Comprehensive consideration of the assumptions underlying the method.  Nuanced understanding of the interpretation of the output. |
| **75** |
| **72** |
| **Merit** | **68** | Near faultless choice and application of methods. Good description of, and justification for, chosen methods, with some discussion of considered alternatives.  Graphical output of good quality.  Good understanding of the interpretation of the output. | Near faultless choice and application of methods. Good description of, and justification for, chosen methods, with some discussion of considered alternatives.  Good consideration of the assumptions underlying the methods.  Good understanding of the interpretation of the output. | Near faultless choice and application of method. Good description of, and justification for, chosen methods, with some discussion of considered alternatives.  Good consideration of the assumptions underlying the method.  Good understanding of the interpretation of the output. |
| **65** |
| **62** |
| **Pass** | **58** | Few faults in the choice and application of methods. Adequate description of, and justification for, chosen methods, with discussion of considered alternatives.  Graphical output of fair quality.  Adequate understanding of the interpretation of the output. | Few faults in the choice and application of methods. Adequate description of, and justification for, chosen methods, with discussion of considered alternatives.  Graphical output of fair quality.  Adequate understanding of the interpretation of the output. | Few faults in the choice and application of method. Adequate description of, and justification for, chosen methods, with discussion of considered alternatives.  Some consideration of the assumptions underlying the method.  Adequate understanding of the interpretation of the output. |
| **55** |
| **52** |
| **Fail** | **48** | Many faults in the choice or application of methods. Inadequate description of, and justification for, chosen methods, with little discussion of considered alternatives.  Graphical output of poor quality.  Inadequate understanding of the interpretation of the output. | Many faults in the choice or application of methods. Inadequate description of, and justification for, chosen methods, with little discussion of considered alternatives.  Inadequate consideration of the assumptions underlying the methods.  Inadequate understanding of the interpretation of the output. | Many faults in the choice or application of method. Inadequate description of, and justification for, chosen methods, with little discussion of considered alternatives.  Inadequate consideration of the assumptions underlying the method.  Inadequate understanding of the interpretation of the output. |
| **45** |
| **42** |
| **30** | Major faults in the choice or application of methods. Little or no description of, and justification for, chosen methods, with little discussion of considered alternatives.  Graphical output of poor quality making it difficult of impossible to interpret.  No evidence of understanding of the interpretation of the output. | Major faults in the choice or application of methods. Little or no description of, and justification for, chosen methods, with little discussion of considered alternatives.  No consideration of the assumptions underlying the methods.  No evidence of understanding of the interpretation of the output. | Major faults in the choice or application of method. Little or no description of, and justification for, chosen methods, with little discussion of considered alternatives.  No consideration of the assumptions underlying the method.  No evidence of understanding of the interpretation of the output. |
| **15** |
| **0** |

1. Data obtained from [The Neonatal Survey](https://www2.le.ac.uk/departments/health-sciences/research/timms/projects/tns). [↑](#footnote-ref-1)
2. This is [an audit measure for the National Neonatal Audit Programme (NNAP)](https://www.rcpch.ac.uk/sites/default/files/2021-01/nnap_2021_audit_measures_guide_v1.0_23122020-compressed.pdf). [↑](#footnote-ref-2)