Maths Learning Centre
WRITING ABOUT STATISTICS
(for your research proposal)

Some tips for writing about statistics
for the MBBS III students.

The important message:
- You're telling a STORY
- The STORY is about the QUESTIONS
- STATISTICS is part of the STORY because it helps you answer the QUESTIONS
- ⇨ A reader should be able to have a rough idea of what the QUESTIONS are by just reading the STATISTICS.

The details:
Subjects:
- How they will be chosen
- How many and how you chose this size
- Why they will help answer the questions

Data Collection:
- What will be done to the subjects
- What will be recorded / calculated
- Why these will reflect the questions

Data Analysis:
- The question you're trying to answer
- The variables involve
- The procedure you'll use and why you chose it
- How you'll know the answer

Examples:

Writing about sample size calculations
"50 participants will be recruited to the study. A clinically important difference in temperature is considered to be 2 degrees. Lehr's formula (as presented in Petrie & Sabin 2012) gives a sample size of at least 50 in order to have 80% power of detecting this difference at the 5% level of significance. This is based on a standard deviation of 7 degrees and the paired t-test (see Data Analysis).

Writing about data analysis
"In order to decide if chilli content has an effect on temperature after the meal, a paired t-test will be performed. This is appropriate because the crossover design gives paired data, and body temperature is usually normally distributed. To investigate whether gender and age affect the relationship between chilli and temperature, a mixed-effects regression with age and gender as covariates will be performed. Results will be considered significant for p-values below 0.05."