Why do you need to write a proposal?

- Your proposal is the document that states exactly the reason why you want to do the research and exactly what you are going to do.
- Your proposal is also the document that you will submit to the ethics committee and to Tygerberg Children's Hospital or the Department of Health to get the necessary approvals and permissions to do the study.
- Lastly your proposal is the plan that you will follow during your research and you should constantly ensure that you still do what you originally stated you would do – this is what you will get ethics approval for. If during the course of your research, you want to change anything in your proposal (except the literature review) you HAVE to get permission from the ethics committee first.

A few important things to remember when you want to start writing your proposal:

- Before you start writing your proposal you should already have:
  - Selected your mentor
  - Discussed your study with a biostatistician
  - Done your literature review – at least the first draft of the review
- It is jolly hard work to write a proposal (or in fact to write anything). The reason is that you have to be in a permanent state of critical thinking and of criticizing your own writing.

"If any man wishes to write in a clear style, let him be first clear in his thoughts".
Johann Wolfgang von Goethe 1749-1832

- Your proposal should be the "critical path" of your research and should read like a story with a nice easy and logical flow to it. Do not distract from the flow by putting in too much detail– the detail should go into the appendices.
- To make things easy for you, we include an appendix with the outline of a proposal (Appendix 5) and a formatted template for easy use (Template 1). The proposal outline/framework and the template are standard and all the aspects in the outline and must be in your template proposal.
- The template has been formatted to make it easy to use. If you mess up the formatting – you are on your own.
- The wrong thing to do is to just take the template and start filling in all the different sections without thinking the whole time. The writing is the quick

part, the thinking takes much longer.
- Also included is a template of what you should include in your CV (Template 2).

"I don't mind that you think slowly but I do mind that you are publishing faster than you think". -Wolfgang Pauli, physicist, Nobel laureate (1900-1958). This is exactly the same quote as used in the Literature review (Step 3) – throughout your process of writing and publishing, remember to think and not go into auto-pilot writing style!

- Once you start writing remember:
  - Do not make up new abbreviations – use only globally accepted abbreviations and limit the number used.
  - Use consistent terminology – this is actually quite boring, but it is more important to write clearly than to write beautiful literature. Scientific writing is a new skill you have to develop. At school you were taught to write in descriptive terms and not to use (for example) the same word too many times. Your teacher probably told you that if you want to write a beautiful essay about nature to use different words to describe the vegetation – trees, plants, shrubs, flowers etc. In scientific writing you must define exactly what you mean by "a tree" and then ensure that if you talk about a tree, that your readers know that a tree is only a tree and not a shrub or a piece of vegetation or a flower. Use consistent terminology and define what it means. For example define for YOUR study what you define as pneumonia – is it a child with symptoms of pneumonia? Or a child with radiological features of pneumonia? Or a child with bacteriological confirmation of pneumonia? Define it once and then use the term consistently to mean only as you have defined it.
- Writing a proposal is not a one-direction activity – rather it is an iterative process. You start with the literature overview so that you know what knowledge is available and where the gaps are. Then you develop your research question/aim/hypothesis and read your literature review again to ensure that you in fact have addressed the knowledge aspects needed for your question/aim/hypothesis. Then you develop your methodology and once again you go back to ensure that now your literature review contains the necessary information from previous studies on the methodology relevant to your study and ensure that the question/aim/hypothesis still fit with the methodology. Often one has to adapt aspects of the literature review to fit the question/aim/hypothesis at this stage or adapt the methodology and especially the data collection to ensure that you will collect the correct variables to answer the question/aim/hypothesis.
- The points made in this step and appendix 5/template 1 can be viewed as a recipe – this step is the overall method while the appendix/template contains

all the ingredients and the detail of how to use the ingredients together (Some advice from the experience of cooks who have made many spectacular flops in the past and who now after many years, know what works: "Read the recipe for a quick overview, but buy the correct ingredients and exactly follow the instructions how to mix ingredients". So we advise you to not make the same mistakes – rather use the appendix/template given in this manual).

"Learn from the mistakes of others. You can't live long enough to make them all yourself". (Eleanor Roosevelt)

- In your proposal you have to write which data sources you are going to use and how you will collect the data (see Appendix 7 for tips on data collection tools). However, the detail of the data, the variables, the data dictionary etc. should be added as appendices in your proposal.
- The proposal should follow a logical sequence and contain enough information to assure your mentor and the ethics committee of the need for the research, its scientific validity and your ability to do the research.
- Each proposal must have a budget – see Step 8 and template 3 which will give guidance regarding the budget which should be added as appendices to your proposal.
- Once you have written the whole proposal, it is a good idea to give it to a colleague to read and critically evaluate.
- Remember that your proposal should be so clear that anyone can understand and follow it easily.

"We should not write so that it is possible for the reader to understand us, but so that it is impossible for him to misunderstand us"(Marcus Fabius Quintilianus c. 35-100).

- Once you think your proposal is complete, you have to read it again a couple of times. This is really difficult and remember:

"Hell – is sitting on a hot stone reading your own scientific publications" (Erik Ursin).

Do not try to read only once or twice – read specifically for each of the aspects listed below:

► Read once for good science and flow, use PICOT and ask the following questions:

- Does my literature review fit with the question/aim/hypothesis?
- Did I define the study population including controls? (P and C from PICOT)
- Did I clearly define the variables and the outcome? (I and O from PICOT)
- Are my study methods, time period and data collection sufficient to answer the research question? (T from PICOT)

- Are there any biases?
- Are there any confounders?
- Will I be able to collect the data and finish in the time available?

► Read once for spelling and grammar and ask:

- Did I use consistent terminology?
- Did I use terms that I am not even sure what they mean? If so, delete these terms and use different terminology which you clearly define.
- Are there parts that are duplicated?
- Did I go off on a tangent that has nothing to do with my main research question/aim/hypothesis? If so, delete the tangents.
- Are there clear headings and sub-headings?

► Read once to check references.

► Lastly, print out proposal and page through asking:

- Does this look like a professional document?

Lastly *"Easy reading is damned hard writing"*. (Nathaniel Hawthorne 1804-1864)

Gie, R., & Beyers, N. (2014). Getting started in clinical research: Guidance for junior researchers. Cape Town: Department of Paediatrics and Child Health, Faculty of Medicine and Health Sciences, Stellenbosch University.