Ideally, the initial discussion should take place before the research development, i.e. at the stage when the research question arises and before any data are collected. Here are some suggestions for points to consider during this discussion, to ensure an efficient first meeting:

• A clear-cut research question is already a great start, although this is often refined as the research develops.

• What is the target population? This should be a relatively large group of people with a set of similar characteristics.

• Do you envisage a comparative (including interventional or laboratory) study or an observational setting?

• What is the main outcome of interest and how would you measure it? Please be aware that clinical measurements are often called “clinical outcomes”. From a statistical perspective, the outcome is associated with the main characteristic of interest, which is often called the dependent variable. There may be multiple statistical outcomes and secondary outcomes are also often considered

• Make sure you understand the research to date by conducting a literature review. This is important, as the body of past research would determine whether your study is at an exploratory or confirmatory stage.

• The exploratory (discovery) phases of the research are justified by biological, clinical, epidemiological mechanisms or observations – this is often how a novel research question emerges. Highlighted concepts include pilot and feasibility studies which are not primarily concerned with hypotheses testing but rather “testing the waters” and summarising data and logistic aspects which are going to be used in a potential further larger setting.

• The confirmatory phase of research is all about numbers – that is because it targets generalizable, reproducible and population-representative results. Associated concepts include hypothesis testing, power, Type 1 error, effect size, minimum sample size etc. The input elements are often predicated on prior elicited research or from an exploratory phase of a previous experiment.

• Study design – this needs careful consideration and discussion. It needs to be adequate, needs to answer the scientific questions and aim at minimising bias and confounding variables (an example is randomization in clinical trials). Examples of common epidemiological designs include cross-sectional studies, case-control studies (not all comparative studies are case-controls), cohort studies, etc. The gold standard comparative studies to assess effectiveness of an intervention are clinical trials.

• Regarding the data needed to be collected to answer your question – the strategy depends on the population and study design (different strategies for observational and clinical trials apply). This is research-field specific and needs to be efficient but comprehensive. At this stage, the researcher should also understand whether the data are independent (cross sectional, case-control studies) or hierarchical (potentially longitudinal) as this has implications on the sample size and further analyses.

• As for analyses strategies, only broad plans can be made but for confirmatory phases, the studies need to be adequately powered and the data comprehensive enough to answer incisive statistical questions.

It is unlikely that one piece of research would lead to changing clinical practice or population policies and robust evidence is needed to convince public health decisional bodies. The road to achieve this can be long and bumpy and includes trial and error. But all starts with good practice which includes careful planning.