Tool 23: Using the PICOT Template to Write Research Questions

The PICOT question format offers a consistent "formula" for developing answerable, researchable questions in quantitative research. Writing these questions using the PICOT format makes the rest of the process of finding and evaluating evidence much more straightforward.

The PICOT template includes the following five prompts:

**P = Population/disease:** The group of people studied; this could include people of a certain age, gender, ethnicity, or with a certain disorder.

**I = Intervention or variable of Interest:** Whatever has brought change to the sub-population, for example, the health intervention tested in the study, exposure to a disease, or a risk behavior.

**C = Comparison:** For intervention studies, this could be a placebo or standard care. For observational studies, this could be people with no disease or without the risk factor studied. Some studies may lack a comparison.

**O = Outcome:** Examples include the disease outcome, risk of disease, accuracy of a diagnosis, or rate of occurrence of adverse outcome.

**T = Time:** Either the time it takes for the intervention to achieve an outcome or the length of time participants are observed.

The following examples are based on Jhpiego publications (citations follow examples), and show how PICOT questions work.

**Descriptive study:**
Among Tanzanian males presenting for voluntary medical male circumcision (VMMC) (P), are exact measurements of penile parameters such as glans circumference (I) correlated with height and weight (O) immediately before surgery (T)? (This study did not include a comparison group.)


Does intensive hands-on training (I) influence confidence in delivering emergency obstetric care (O) in Afghan health care workers who have obstetrical responsibilities (P) following training (T)?

Intervention or therapy research questions:
In nongovernmental organization (NGO) projects and clinics (P), what is the effect of community-based health intervention packages (I) on under-5 mortality (O) using the Lives Saved Tool’s (LiST’s) evidence-based interventions, compared with data from Demographic and Health Surveys (DHS) (C), within the same project baseline/endline survey time frames (T)?


Are pregnant women (P) who have misoprostol available from a home visit by a community health worker (CHW) (I) at decreased risk for postpartum hemorrhage (O) at home births (T) compared with pregnant women who did not (C)?


Diagnosis or diagnostic test:
Among women in Zimbabwe (P), is the positive predictive value of visual inspection of the cervix with acetic acid (VIA) (O) greater among women with risk factors as assessed by clinical history-taking (I) compared with those without risk factors (C) at the time of screening (T)?


Prevention:
For Indonesian women (P), does the use of visual inspection with acetic acid single visit approach (I) reduce the future risk of cervical cancer by better service delivery of curative procedures (O), compared with women who were not offered cervical cancer prevention services (C), over 54 months of health center service records examined (T)?


How do males (P) diagnosed with or exposed to HIV (I) perceive male circumcision to prevent HIV spread (O) during African VMMC campaigns (T)?
